



Annual report
2019



Hydro's reporting 2019

The enclosed Financial statements and Board of Directors' report, together with the accompanying notes, fulfills Hydro's Norwegian statutory requirements for annual reporting. The remainder of the Annual Report includes additional information about Hydro's business, viability performance, financial and operating performance, shareholder information and corporate governance.

The "Annual report - 2019" is available in PDF-format on our website www.hydro.com in English. The "Financial statements and Board of Directors' report - 2019" is also available in PDF-format as a separate document in both English and Norwegian. All parts of the reports can be downloaded and printed in PDF-format, together with additional, supplementary information. Paper copies of the reports can also be ordered on our website.

Throughout the report, Hydro refers to Norsk Hydro ASA and its consolidated subsidiaries if not otherwise stated.

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Year in brief

2019 operating results impacted by reduced aluminium and alumina prices, partly offset by lower raw material costs.

Hydro's underlying EBIT decreased to NOK 3,359 million from NOK 9,069 million for 2018. The decrease mainly reflects lower realized aluminium and alumina price, partly offset by the positive effects from increased production in Brazil, lower raw material costs and positive currency effects.

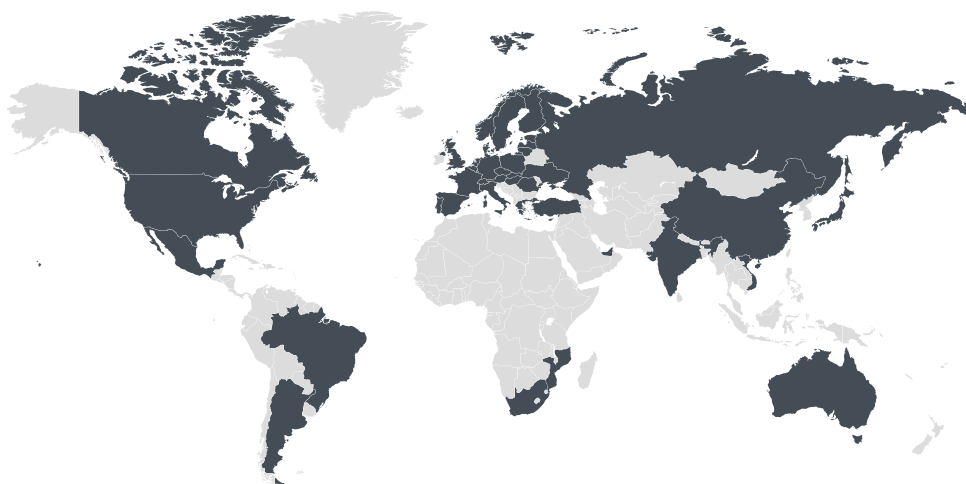
Bauxite production in Paragominas amounted to 7.4 million mt for the year while alumina production from Alunorte was 4.5 million mt. Primary aluminium production was about 2.0 million mt and we delivered 2.6 million mt of casthouse products and liquid metal to internal and external customers. Downstream, we shipped roughly 1 million mt of Rolled Products to the market. Extruded Solutions business area delivered around 1.3 million mt. Our energy business produced around 9.2 TWh of hydroelectric power



40
countries



36,000
employees



■ Hydro present

Based in Norway, Hydro has 36,000 employees involved in activities in 40 countries.

Key figures

Amounts in NOK million unless other unit indicated	2019	2018	2017
Revenue	149,766	159,377	109,220
<i>Underlying EBIT</i>			
Bauxite & Alumina	974	2,282	3,704
Primary Metal	(1,259)	1,762	5,061
Metal Markets	983	686	544
Rolled Products	413	413	380
Extruded Solutions	2,009	2,390	284
Energy	1,243	1,846	1,531
Other and eliminations	(1,003)	(310)	(289)
Total	3,359	9,069	11,215
Net Income	(2,370)	4,323	9,184
Underlying return on average capital employed (RoaCE), percent	1.3%	6.6%	9.6%
Investments	10,907	7,614	28,848
Total assets	164,401	164,928	163,273
Share price year-end, NOK	32.64	39.21	62.35
Dividend per share, NOK	1.25	1.25	1.75
Number of employees, year-end	36,310	36,236	34,625
Recordable injuries, per million hours worked	3.0	3.4	2.9
Greenhouse gas emissions, million tonnes CO ₂ e	9.68	9.27	11.19

3,359 MNOK

Underlying EBIT

Result driven by lower realized aluminium and alumina prices, partly offset by the positive effects from increased production in Brazil, lower raw material costs and positive currency effects.

3.4 BNOK

Free cash flow

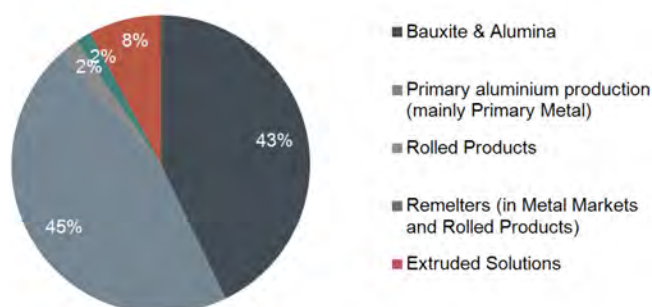
Net cash flow from operations in 2019 amounted to 12.6 BNOK, supported by 5.6 BNOK in net operating capital release. Net investments amounted to 9.2 BNOK.

9.68 mt CO₂e

Greenhouse gas emissions

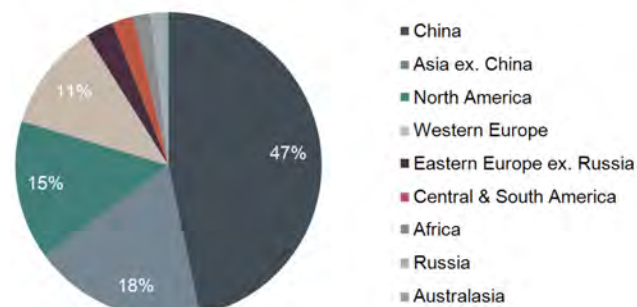
Direct greenhouse gas emissions from Hydro's consolidated activities decreased in 2018 due to the embargo at Alunorte and curtailment at Albras and Paragominas. This was partly reversed in 2019 due to the lifting of the embargo and ramp-up of production

Hydro's consolidated direct greenhouse gas emissions per business area

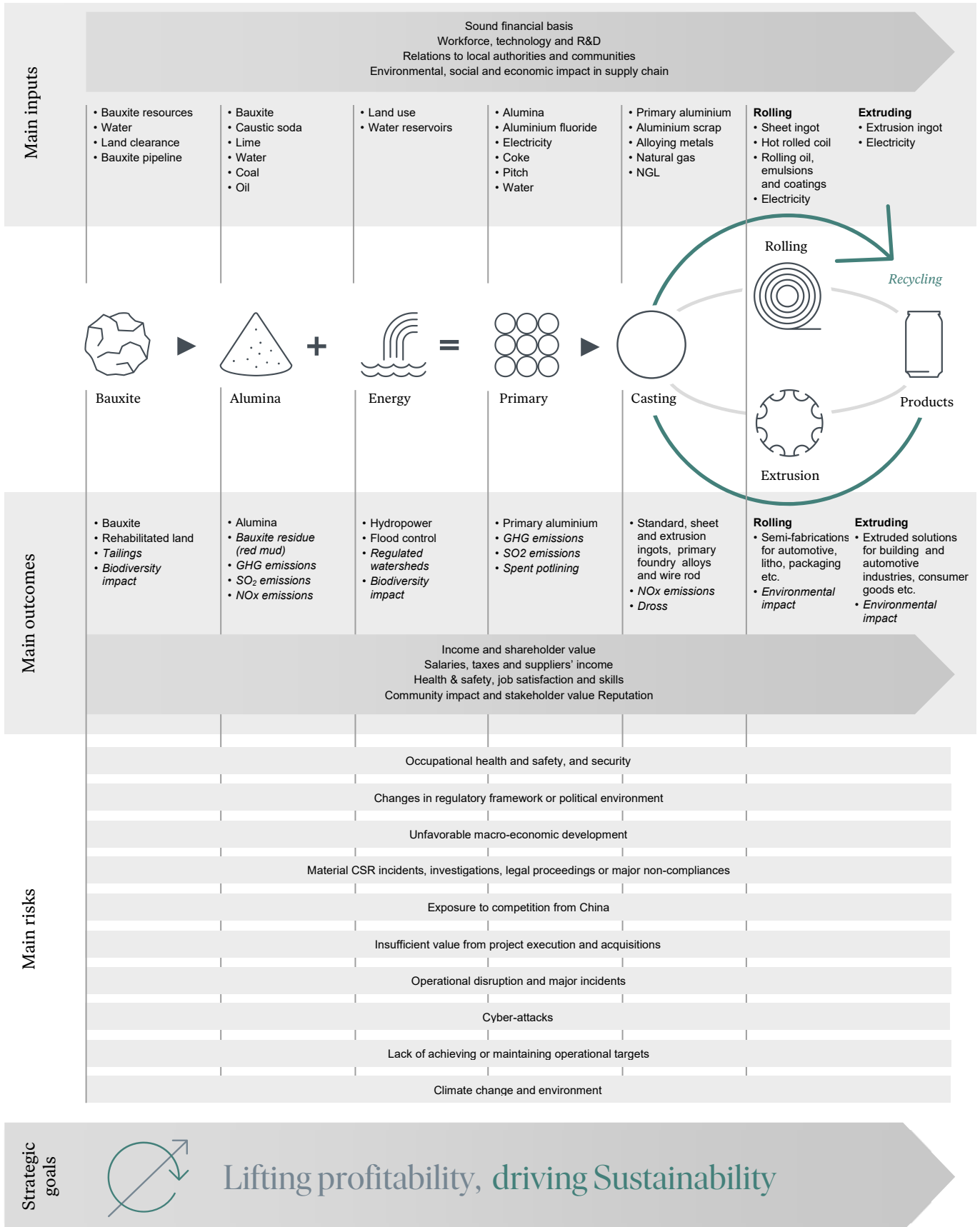


Global aluminium consumption by region 2019

Total market 89.8 million mt



Hydro's value chain



* Included as part of the relevant topics in the more extensive risk description (see further references below). For a more extensive and precise overview of Hydro's main risks, see page 21 and 105. Text in italics reflects mainly negative impacts.

Hydro and the UN Sustainable development goals

The UN Sustainable Development Goals (SDGs) embrace a universal approach to the sustainable development agenda. They explicitly call on business to use creativity and innovation to address development challenges and recognize the need for governments to encourage sustainability reporting. Hydro has an impact on all of the 17 development goals, but some more than others. Of the 17, Hydro has chosen eight goals that are the most important to us, that are highlighted throughout the report.

Improving our footprint



Making a positive difference



Driving innovation



Lifting profitability, driving sustainability

In 2019 we embarked on our new strategic agenda: “Lifting profitability, driving sustainability”. My aim is to position Hydro as a robust and profitable industry leader, based on innovation and sustainability.

Safety of our people remains our top priority. On December 11, I received the worst possible call a CEO can get, from our joint venture in Qatar. A contractor tragically lost his life during a heavy storm while at work for Qatalum. Our most important job is to make sure our employees come home from work safely. Our overall performance on safety improved in 2019, but still short of our ultimate target of an injury-free work environment.

Trade wars, Brexit uncertainty, weak markets and the embargo in Alunorte have weighed on our financial result in 2019. In addition, a malicious and sophisticated cyber-attack hit us hard last spring. I am immensely proud of how our people and organization handled the situation working day and night to recover.

The lifting of the 19-month embargo on our alumina refinery Alunorte in Brazil was a long-awaited milestone. We can only succeed if we have trust in the local communities, and we have stepped up our infrastructure investments as well as community dialogue, social investments, education and competence building. Our responsibility is as important both on the inside and outside of the fence.

Profitability

On our 2019 Investor Day, we announced ambitious targets to lift profitability and drive long-term shareholder value. We launched a NOK 7.3 billion improvement program to be delivered by 2023, including a strategic review of the Rolled Products business area and a capital returns target of 10 percent over the cycle (RoACE). I am pleased to see that all business areas are making progress towards their 2023 target, under challenging market conditions.

Our new strategic agenda is based on cost-competitive assets, operational excellence, strong market positions, innovation and differentiation on sustainable processes and products. A clear capital allocation framework is established based on different strategic modes for each business area.

In my view we cannot achieve profitability in the long run without operating and producing in a sustainable way. I see it as an ethical responsibility, but also as a business opportunity, to make the carbon footprint of our products a competitive edge.

In August 2019, we launched two new greener brands: Hydro REDUXA with one of the world’s lowest carbon footprint (less than 4 kg CO₂ per produced kg aluminium) and Hydro CIRCAL produced on minimum 75 percent post-consumer scrap.

I am happy to see that Hydro CIRCAL already is sold to more than 60 building projects in 16 countries in Europe, the Middle East, and the US. This is a small, but promising illustration that there is a willingness to make greener choices in the marketplace when alternatives are offered. And this is only the beginning.

In my opinion it should be as obvious and easy for decision-makers to consider the carbon footprint of different materials and consumer products, as it is to read the fat content on a milk carton at the grocery store.

Technology and innovation are key to profitability and sustainability. We have to be in front in order to succeed in the world championship every day. In electrolysis technology we are first tier, producing the world’s most climate and energy-efficient primary aluminium at our Karmøy Technology Pilot plant, with average 2019 numbers for energy consumption in line with the target values of 12.3 kWh per kilo aluminium – and 11.7 kWh per kilo aluminium for the six ULTRA cells. Innovative technology elements from the pilot are already implemented in our upgraded production line at Husnes, reopening in first half of 2020.

In material technology we unite our expertise with researchers and product designers to develop tailor-made alloys that expand the use of our material into new applications in transportation, building and construction, packaging, electronics, marine and offshore.

Based on our expertise in energy and metallurgy we also consider new opportunities for how to use and expand our core competencies into interesting areas like batteries and recycling.

Sustainability

Hydro’s sustainability agenda rests on three pillars: Climate, environment and social responsibility. We have a good starting point: A century-long history of sustainable industrial development, using hydropower to produce products that the world needs in a responsible manner. 70

percent of the electricity used in our primary aluminium production is from renewable sources.

Our new climate strategy – “30 by 2030” – calls for reducing our gross CO2 emissions by 30 percent throughout the value chain. We will do this through greener sourcing and greener production. We are also helping our customers reduce their footprint through our greener products.

The energy mix at Alunorte is crucial for our climate ambition. Changing from oil to gas in the calciners will reduce CO2 emissions by 600,000 tonnes per year by 2025. Switching from coal boilers to renewable power will cut another 2 million tonnes a year by 2030.

The ambition of Primary Metal is to reduce specific greenhouse gas emissions by another 8 percent by 2030 from an already first-tier level. Through digitalization and big data, we make use of simulations and predictions to optimize and get more out of less. Toward 2050, we need to go even further. Through R&D we will explore potential paths towards low- or zero-carbon emissions, like carbon capture, carbon-free processes and use of biocarbon in anodes.

More renewable power in our energy mix and operational improvements will contribute to further reductions in carbon footprint. Hydro is one of the largest corporate buyers of long-term renewable energy contracts in Europe. By committing to long-term contracts, we not only improve our own footprint, we also support and enable more renewable energy projects to be realized and financially viable.

In our new environment strategy towards 2030 we will address the industry's key challenges. This will include continued rehabilitation of forest at our bauxite mine in Pará, Brazil, reducing our tailings and bauxite residue footprints, recycling our spent pot lining and halving our non-greenhouse gas emissions to air (SO2, NOx and particulate matter).

Through our social responsibility strategy, we emphasize community dialogue, social investments and targeting education and capacity building for 500,000 people by 2030, spanning programs for children and trainees, our suppliers as well as local stakeholders in Pará, Brazil and other communities Hydro is part of.

Engaging with a range of international organizations, we work to improve industry standards for human rights, transparency and responsible production. Hydro is a signatory to the UN Global Compact, and included on the Dow Jones Sustainability Indices, the UN Global Compact 100 and the FTSE4Good list.

Hydro became the first member of the Aluminium Stewardship Initiative (ASI) to have an unbroken chain of certifications throughout the entire value-chain, from mine to end-products. As of 1 March, 40 Hydro plants have been ASI certified, and we aim to reach 60 before year-end. I am confident that more customers want materials from certified suppliers.

The Hydro Way

Based on our values care, courage and collaboration, we will meet the challenges and seize the opportunities in the market through safe, compliant and efficient operations, portfolio optimization, restructuring and improvements, a robust balance sheet, selective capital allocation and strict capital discipline.

We will position our metal, our products and solutions for the future by demonstrating responsible and sustainable conduct in all parts of the value chain, minimizing the footprint of producing it, while maximizing the benefits of using it and bringing post-consumer scrap back into the loop.

I am confident that we have set the right agenda for the company, and I am confident that our people have what it takes to embark on the opportunities ahead. We have the competence, engagement and dedication to deliver and transform Hydro into a profitable and sustainable company with a promising future.



Hilde M. Aasheim

Hilde Merete Aasheim
CEO and President

Board and Management

Board of Directors



Dag Mejdell
Chair



Irene Rummelhoff
Deputy chair



Arve Baade



Finn Jebsen



Liselott Kilaas



Peter Kukielski



Sten Roar Martinsen



Thomas Schulz



Svein Kåre Sund

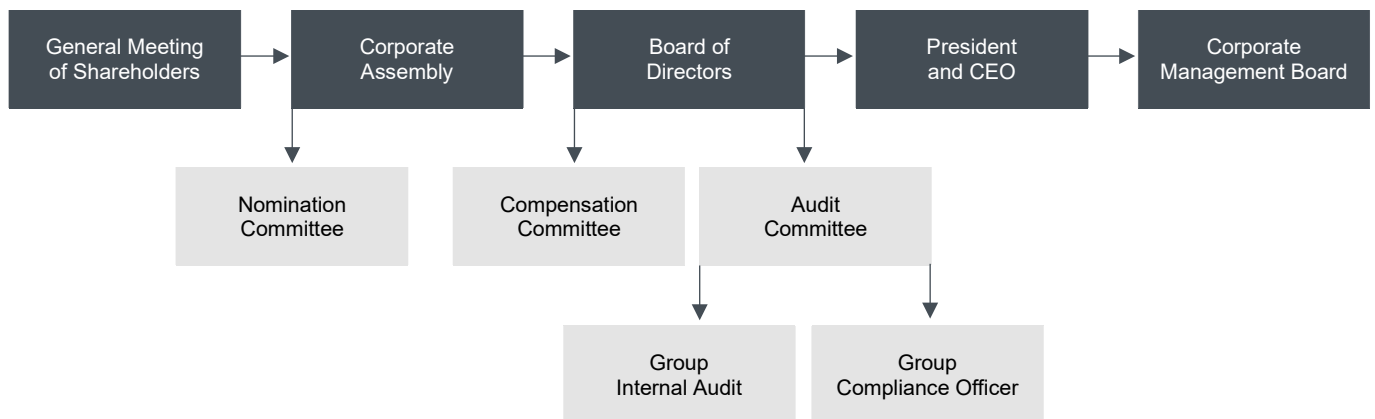


Marianne Wiinholt



Tor Egil Skulstad
Observer

Governance bodies in Hydro



Corporate Management Board



Hilde Merete Aasheim
CEO & President



Einar Glomnes



Egil Hogna



Eivind Kallevik



Pål Kildemo



Anne-Lene Midseim



Arvid Moss



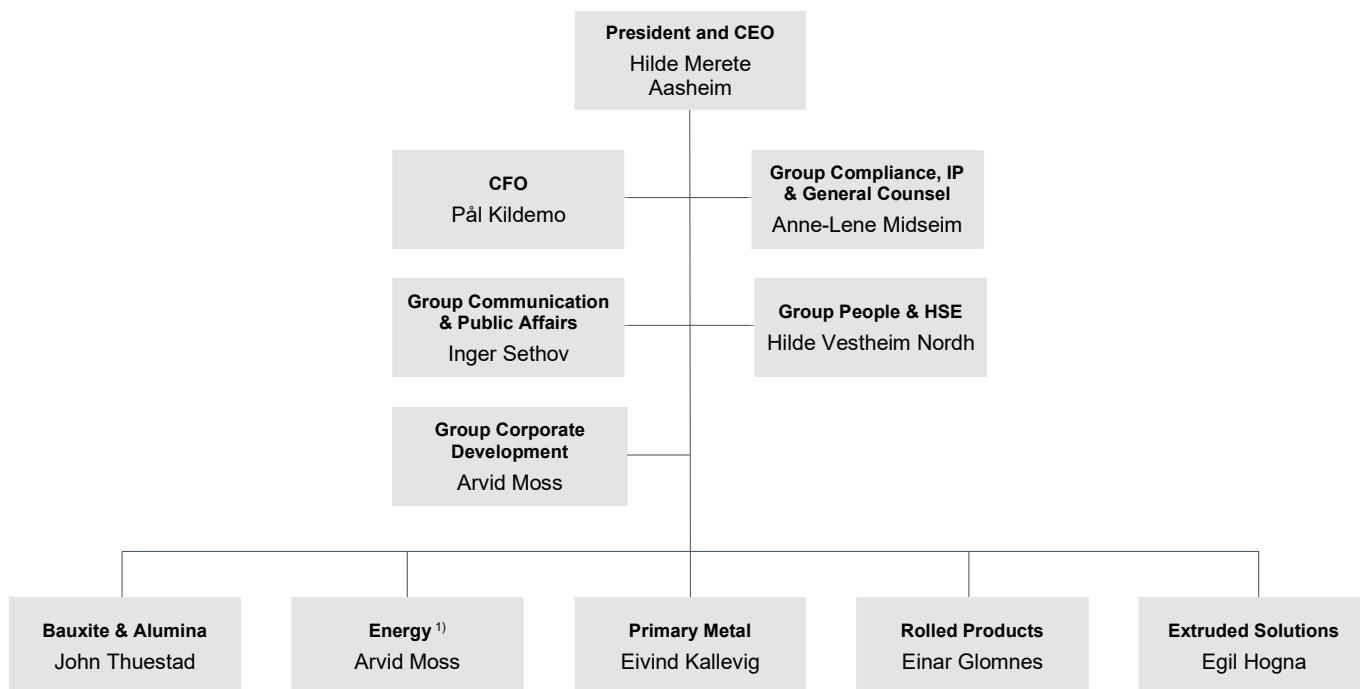
Hilde Vestheim Nordh



Inger Sethov



John Thuestad



1) Projects report to EVP Energy

Board of Directors' report

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Quick overview

Hydro aims to lift profitability and drive sustainability in order to increase long-term value for our stakeholders and contribute to a viable society.

Hydro has strong positions throughout the value chain and an attractive asset base. This includes competitive positions in bauxite and alumina, hydropower production, our smelter portfolio, Europe's largest rolling operations, strong position in recycling and a world leading position in extruded solutions. Through continuous improvement, restructuring efforts and selective investments in areas with positive market prospects, Hydro has increased the robustness of its portfolio over recent years.

Following disappointing financial results in 2019, resulting from the ongoing curtailed operations in Brazil at the start of the year, a cyber-attack in March and declining market conditions towards the end of the year, several immediate measures were launched to improve cash generation. These include an ambitious new improvement program and target for operating capital release, as well as the restructuring of our Rolled Products business area.

Hydro's future profitability depends on our ability to operate sustainably. We have quantified a set of ambitions towards 2030 to improve our performance on climate, environment and social responsibility.

Strategic direction and key developments

Lifting profitability and driving sustainability

Hydro aims to lift profitability and drive sustainability, in order to increase long-term value for our stakeholders and contribute to a viable society. The two main pillars of our strategy are to deliver 10 percent capital returns over the business cycle and to reduce our CO₂ emissions by 30 percent by 2030.

Following disappointing financial results in 2019, resulting from ongoing curtailed operations in Brazil at the start of the year, a cyber-attack in March, and declining market conditions toward the end of the year, we launched several immediate measures to improve cash generation. These include an ambitious new improvement program and target for operating capital release, as well as the restructuring of our Rolled Products business area.

We also introduced a new capital allocation framework, with strategic growth modes for the different parts of our value chain, designed to increase returns and ensure that capital is allocated according to the following strategic objectives:

- More stable earnings profile
- Increased exposure in areas with a competitive advantage
- Larger customer base downstream
- Sustainable value chain with lower environmental footprint to reduce risk

Hydro's future profitability depends on our ability to operate sustainably. We have quantified a set of ambitions to improve our performance on climate, environment and social responsibility toward 2030. By reducing risk, emphasizing safety in our operations, improving relations with stakeholders and neighbors, increasing resource efficiency, reducing our own emissions and developing new markets, Hydro's business will be more robust. Complying with laws, regulations and Hydro's steering documents, and respecting human rights, are fundamental to our way of working and are key elements to our license to operate.

We recognize that we can only succeed if communities and partners around us succeed. With our social responsibility strategy, we aim to make a positive difference by strengthening our business partners and the local communities where we operate. Community dialogue and stakeholder engagement are vital to this work. Within safety, our ambition is to prevent all injuries and ill health to avoid human suffering, and to avoid damage to property and loss of production. Hydro aims to mitigate emissions to land, water and air, conserve biodiversity and reduce waste production, addressing the industry's key environmental issues.

Strong foundation

Hydro has strong positions throughout the value chain and an attractive asset base.

This includes:

- First quartile cost position for the integrated Alunorte refinery and Paragominas bauxite mine, and long-term access to key raw materials for aluminium production

- 10 TWh hydropower production in Norway at a competitive production cost, secure and stable energy source for aluminium production
- Low second quartile cost position for our primary aluminium plant portfolio, technological leadership through Karmøy technology pilot and more than 80 percent share of value-added metal products
- Largest aluminium rolling operations in Europe, focusing on growing market segments, including automotive and beverage can
- World's largest extruded solutions provider, the market leader in North America and Europe
- Strong and growing position in recycling of post-consumer scrap enabling Hydro to meet increasing demand for products with a high recycled content
- More than 70 percent of the electricity used in Hydro's production of primary aluminium is based on renewable power, enabling Hydro to meet increasing demand for products with low-carbon content

Hydro has increased the robustness of its portfolio in recent years, through continuous improvement, restructuring efforts and selective investments in areas with positive market prospects.

Despite the current challenging markets, the growth outlook in long-term demand for aluminium remains firm and is growing in line with macroeconomic development. Aluminium demand is driven by a general increase in consumption and by the increasing level of substitution to aluminium from other materials. Aluminium products are important in all phases of economic development due to the diversified nature of applications such as capital investment in infrastructure, marine products, building and construction as well as consumer goods such as packaging, transportation, beverage cans, electrical and technical applications and household goods.

Substitution effects are driving demand primarily in the transportation sector, driven by the need to improve fuel efficiency and range extension through lighter cars, trains and trucks. Aluminium is also key to zero-energy buildings, solar applications and packaging that preserves food and drink, and demands less energy to transport. Around 70 percent of our primary aluminium production is based on electricity from renewable sources, which positions Hydro as a leading producer of low-carbon primary aluminium. This, together with the use-phase benefits of aluminium and the recyclability of the metal, is reducing the carbon footprint of our products and solutions.

Strategic priorities

Cost-competitive asset base based on operational excellence and innovation

We aim to maintain and improve our position in the first and second quartile of the cost curve for our upstream asset portfolio by focusing on safety, operational excellence, process innovation and competitive sourcing of key raw materials and energy.

Strong market positions capitalizing on innovation

Our target is to grow in innovative product segments such as automotive and e-mobility, utilizing strong collaboration with key customers built on innovation and competence. We will also further explore the substitution potential of

aluminium, which is evident in many different market segments, such as cars, beverage cans and electrical wiring.

Differentiate on sustainable footprint, products and processes
Sustainability is an integrated part of lifting Hydro's profitability and long-term value creation in a low-carbon economy. To further improve our performance related to climate, environment and social responsibility, we have launched and quantified a set of ambitions toward 2030. We will achieve this by reducing our own environmental impact and emissions in production, by developing greener products, by helping our customers design more sustainable solutions, and by making a positive difference by strengthening local communities and our business partners. With last year's launch of our new certified low-carbon product brands CIRCAL and REDUXA, we set a new standard for commercializing our sustainability position with low-carbon and recycled aluminium.

Measures to lift profitability and drive sustainability

Hydro aims to lift cash flows and returns with extensive improvement and restructuring efforts across its business areas, while highlighting sustainability as a basis for the company's positioning. The new improvement ambition is targeting NOK 7.3 billion in total EBIT improvements across all business areas over the next five years, including the restart of curtailed capacity of the Brazilian assets with an effect of NOK 2.7 billion.

Restructuring and strategic review of Rolled Products

Hydro has initiated a strategic review and comprehensive restructuring of the Rolled Products business area to mitigate the declining profitability the business has faced over the last years. The aim is to reverse this trend by lifting organizational and operational efficiency as well as by shifting the product portfolio away from declining markets and toward growth markets like automotive and beverage can. The target is a NOK 0.9 billion improvement by 2023. These improvements will be realized, while also continuing the strategic review, which aims to evaluate the optimal ownership set-up for our Rolled Products business.

Revised operating model with leaner staff functions and strong business areas

Staff improvement efforts, represented by the Fit4Future program, are set to contribute NOK 0.5 billion in improvements mainly through increased efficiency within staff functions across Hydro, of which Global Business Services (GBS) will deliver most of the gains. The revised operating model includes a new corporate development

function to strengthen our ability to drive the profitability and sustainability agenda, through optimal capital allocation.

New capital allocation framework

A clear capital allocation framework is a vital component in our work to meet our profitability targets. Different strategic modes have been applied to the business areas. The strategic mode *sustain and improve* applies to our Bauxite & Alumina and Primary Metal business areas. The strategic mode *selective growth* applies to Energy, Metal Markets and Extruded Solutions. Rolled Products is under *strategic review*. We will run a dynamic capital allocation process that supports financial and investment flexibility, continuous review and re-allocation, and which also stimulates internal competition for capital, both between and within the business areas.

10 percent RoaCE target


Hydro is committed to drive long-term value for our shareholders. To strengthen the focus on profitability, we have introduced a 10 percent RoaCE target over the cycle for the group, while all business areas will aim to deliver RoaCE above their differentiated cost of capital. Hydro's RoaCE has averaged 5.1 percent over the past 10 years, and while our upstream assets are well placed on the industry cost curve, the expansion of alumina and aluminium production capacity in China has negatively affected the prices of alumina and aluminium.

Driving sustainability – new climate and environmental strategy

Our new ambition is to cut our own greenhouse gas (GHG) emissions by 30 percent and reduce non-GHG emissions by 50 percent by 2030. The fuel switch project from oil to gas at Alunorte, an increase in the use of renewable power in our energy mix, and operational improvements in all business areas are important contributors in our work toward reaching these ambitions. In addition, we will continue to address industry challenges related to management of tailings, bauxite residue and waste, and water-related risks.

Through continuous improvements and technology enhancements, Hydro has reduced its greenhouse gas emissions from the electrolysis process by 70 percent since the 1990s. By increasing the share of renewable energy used in electrolysis to above 70 percent, our carbon footprints through the aluminium value chain – from bauxite mining to electrolysis and casting – are among the lowest in the industry. This has enabled Hydro to take a leading position in delivering metal with low-carbon footprints to the market.

2019 Status and targets

 <p>Lifting profitability</p>	<p>Capital returns</p> <p>URoaCE 1.3%¹⁾</p> <p>10% target over the cycle</p>	<p>Balance sheet</p> <p>FFO/aND 27%²⁾</p> <p>>40% target over the cycle</p>	<p>Free cash flow</p> <p>3.4 BNOK³⁾</p>
<p>Improvement program</p> <p>1.0 BNOK</p> <p>2023 target 7.3 BNOK 2019 target 0.5 BNOK</p>	<p>Net operating capital</p> <p>5.6 BNOK release</p> <p>~ 4 BNOK target from end-2018 to end-2020</p>	<p>Capex</p> <p>9.6 BNOK</p> <p>2020 estimate 9.5 - 10.0 BNOK</p>	<p>Shareholder payout</p> <p>1.25 NOK/share⁴⁾</p> <p>68% average 5-yr payout ratio 40% payout ratio over the cycle 1.25 NOK/share dividend floor</p>

1) URoaCE Hydro (Annual definition) calculated as underlying EBIT last 4 quarters less Income tax expense adjusted for tax on financial items/ Average capital employed last 4 quarters.
 2) Funds from operation LTM/Average LTM adjusted net debt
 3) Free cash flow – operating cash flow less investing cash flow excl. sales/purchases of short-term investments
 4) Pending approval from the AGM on May 11, 2020

2019 Status and targets

 <p>Driving sustainability</p>	<p>Safety</p> <p>TRI rate 3.0 FY 2019</p> <p>Ambition: Zero fatalities and injury free environment</p>	<p>Social responsibility</p>  <p>2018 2030</p> <p>2030 target: Contribute to education and skills for 500,000 people</p>	<p>Biodiversity</p> <p>On track 2019</p> <p>Target: 1 to 1 rehabilitation of available mined areas</p>
<p>Climate</p> <p>30% reduction in CO₂ emissions by 2030</p>	<p>Business ethics</p> <p>94% Completed e-learning in Hydro's code of conduct</p> <p>2019 target: 90%</p>	<p>Greener products</p> <p>10 000 mt CIRCAL produced FY 2019</p> <p>combined 2020/21 target: 65,000 mt</p>	<p>Environment</p> <p>50% reduction in non-GHG emissions by 2030</p>

2019 Developments

Following the lifting of the production embargo at the Alunorte refinery in May, the alumina market (World ex-China) returned to a surplus towards the end of 2019, with the excess alumina balanced by Chinese alumina imports. In addition, demand for bauxite imports into China continued to grow. This was driven by an increase in alumina production by coastal refineries traditionally reliant on imported bauxite, and by new demand from inland refineries switching away from expensive domestic bauxite, which is increasingly difficult to source. The increased demand was largely met by the continued strong growth in imports from Guinea, moderate growth from Australian mines and by increasing Indonesian volumes following the lifting of an export ban.

Global primary aluminium demand declined 1.2 percent in 2019, reflecting negative macroeconomic developments. Global supply decreased by 0.7 percent, resulting in a global deficit of around 0.9 million mt. Primary production growth in China fell 2.1 percent year-on-year in 2019 due to several large disruptions, in addition to environmental and supply-side reforms that led to cutbacks of illegal capacity. Demand in downstream segments weakened during the second half of the year due to manufacturing weakness in both Europe and the US.

Hydro's safety performance improved in 2019. The company's TRI¹ rate decreased from 3.4 in 2018 to 3.0 in 2019 but did not meet the 2019 target of below 2.7. Hydro's joint-venture partner Qatalum experienced a fatal accident in 2019 as one contractor tragically died.

Hydro's underlying EBIT for the year 2019 was NOK 3.4 billion, down from NOK 9.1 billion in the previous year. The decrease reflects lower realized aluminium and alumina prices. This was partly offset by the positive effects of increased production in Brazil, lower raw material costs and positive currency effects.

Hilde Merete Aasheim was appointed new President and CEO of Norsk Hydro ASA, effective from May 8, 2019. Her focus from day one has been to lift profitability and drive sustainability.

The federal court in Belem, Brazil, lifted the production embargo on the Alunorte alumina refinery on May 20, allowing Alunorte to ramp up toward normal production. The embargo on Alunorte's new bauxite residue disposal area (DRS2) was lifted on September 26, which allowed Alunorte to resume activities of installation and commissioning at DRS2. The lifting of the embargoes ended a 19-month period of restricted activities at the plant. Alunorte, with annual production capacity of 6.3 million mt, reached 90 percent utilization of its capacity by the end of the year. With nine fully operational press filters, we expect to reach full capacity utilization by the end of 2020.

On March 19, 2019, Hydro was subject to an extensive cyber-attack. The attack affected our entire organization, with the most significant operational challenges and financial losses occurring in our Extruded Solutions business area. Hydro's other business areas were able to maintain normal

production levels, albeit based upon work-intensive workarounds and manual procedures. Hydro has resumed normal operations, and estimates the total cost of the cyber-attack to be in the range NOK 650 - 750 million. The company has robust cyber insurance in place with recognized insurers. In 2019, Hydro recognized NOK 216 million in insurance compensation, most of which is reflected in Extruded Solutions' result. Further compensation will be recognized when deemed virtually certain.

Progress has been made on Hydro's new improvement program, which is targeting NOK 7.3 billion by 2023. At the end of 2019, we realized NOK 1 billion in improvements, which was ahead of the NOK 0.5 billion goal for the year. The contribution from Bauxite & Alumina was higher than targeted, reflecting a faster ramp-up of Alunorte and Paragominas than projected in the improvement program. However, mainly due to the Alunorte curtailment during 2018 and 2019, Hydro was not able to deliver on its previous *Better* program.

Hydro has completed several investments related to the wastewater handling and treatment systems at Alunorte, totaling BRL 675 million (around NOK 1.5 billion). These aim at increasing wastewater treatment capacity by 50 percent and water reservoir capacity by 350 percent, in addition to strengthening the infrastructure related to the water management system and enhancing the system's robustness and flexibility.

On December 18, a decision was made to curtail a maximum of 20 percent of production at Hydro's majority-owned Slovalco primary aluminium plant in Slovakia. The curtailment was in response to the weakening market environment combined with Slovalco's relatively high cost position and uncertainty related to the renewal of its power contract, which is set to expire at the end of 2021.

Extruded Solutions has undergone an optimization of its large asset portfolio to identify ways to streamline and to reduce costs supporting its ongoing NOK 1 billion improvement target. In 2019, several extrusion plants in Europe and the US were closed or divested, and in most cases, production volumes were transferred to other facilities.

Hydro has initiated a strategic review and comprehensive restructuring of the Rolled Products business area to mitigate the declining profitability the business has faced over the last years. The aim is to reverse this development by improving organizational and operational efficiency, and by shifting the product portfolio away from declining markets and toward growth markets like automotive and beverage can. The improvement target is NOK 0.9 billion by 2023.

Hydro launched two new low-carbon aluminium brands in 2019, CIRCAL and REDUXA. Hydro CIRCAL is a range of products made with recycled post-consumer scrap, and sales of CIRCAL products were around 10,000 mt in 2019. By using recycled content, we reduce energy use substantially while still being able to offer high-quality products. CIRCAL contains a minimum of 75 percent post-consumer scrap. Hydro REDUXA is our series of certified, low-carbon

¹ Total recordable injuries per million hours worked, includes employees and contractors

primary aluminium. REDUXA is produced with renewable energy, and guarantees a maximum carbon footprint of 4.0 kg CO₂ per kg aluminium – 25 percent of the global average.

40 of Hydro's aluminium sites worldwide have achieved certification according to the Aluminium Stewardship Initiative (ASI)'s Performance Standard. ASI is a global, multi-stakeholder, non-profit standards setting and certification organization. It works toward responsible production, sourcing and the stewardship of aluminium following an entire value-chain approach.

The integration of Extruded Solutions and its 22,000 employees was concluded successfully in 2019. Integration synergies of NOK 200 million per year have been realized, primarily in remelting and recycling, and further synergy potentials are being explored, including innovation, research and development.

In the second quarter of 2019, Hydro Extrusion Portland, Inc. (formerly Sapa Profiles, Inc., or SPI), a subsidiary of Hydro Extruded Solutions AS (formerly Sapa AS), reached resolution with the U.S. Department of Justice as to claims involving certain aluminium extrusions that SPI manufactured from 1996 to 2015, including extrusions that were delivered to a supplier to NASA. SPI paid USD 46.9 million pursuant to a plea agreement and a civil settlement agreement. As part of the resolution, SPI's US parent company (Sapa Extrusions, Inc., now Hydro Extrusion USA, LLC) also entered into a deferred prosecution agreement. SPI is in negotiations with NASA as to SPI's potential debarment as a federal government contractor. These costs were provided for in periods before 2019.

In April 2019, Hydro raised EUR 800 million in the bond market by issuing new six-year and 10-year Eurobonds. The proceeds will be used to refinance maturing debt and for general corporate purposes. In December 2019, Norsk Hydro ASA signed a USD 1,600 million revolving multi-currency credit facility with the margin linked to Hydro's greenhouse gas emission target. The facility, which is available for general corporate purposes, carries a five-year maturity with two one-year extension options, and it replaces Hydro's undrawn USD 1,700 million revolving credit facility signed in 2013. The margin under the facility will be adjusted based on Hydro's progress to meet its target to reduce greenhouse gas emissions by 10 percent by the end of 2025.

Investor information

Hydro's share price closed at NOK 32.64 at the end of 2019. The return ex. dividend for 2019 was negative with NOK 6.57, or negative 17 percent.

Hydro's Board of Directors proposes to pay a dividend of NOK 1.25 per share for 2019, for approval by the Annual General Meeting on May 11, 2020, taking into account a demanding year for the company and the volatility in the aluminium industry. This is consistent with NOK 1.25 per share paid out for 2018. The proposed payment demonstrates the company's commitment to provide a predictable dividend to shareholders. Hydro has a dividend policy of 40 percent payout ratio of reported net income over the cycle with NOK 1.25 per share considered as a floor. The average five-year payout ratio is 68 percent.

Shareprice vs market



Financial results

Underlying financial and operating results

Key financial information	Year	Year
NOK million, except per share data	2019	2018
Revenue	149,766	159,377
Earnings before financial items and tax (EBIT)	499	8,522
Items excluded from underlying EBIT ¹⁾	2,860	547
Underlying EBIT ¹⁾	3,359	9,069
<i>Underlying EBIT:</i>		
Bauxite & Alumina	974	2,282
Primary Metal	(1,259)	1,762
Metal Markets	983	686
Rolled Products	413	413
Extruded Solutions	2,009	2,390
Energy	1,243	1,846
Other and eliminations	(1,003)	(310)
Underlying EBIT ¹⁾	3,359	9,069
Earnings before financial items, tax, depreciation and amortization (EBITDA) ²⁾	9,878	15,796
Underlying EBITDA ¹⁾	11,832	16,344
Net income (loss)	(2,370)	4,323
Underlying net income (loss) ¹⁾	708	5,819
Earnings per share	(0.88)	2.08
Underlying earnings per share ¹⁾	0.52	2.75
<i>Financial data:</i>		
Investments ¹⁾²⁾	10,907	7,614
Net cash (debt) ¹⁾	(11,760)	(11,745)
Adjusted net cash (debt) ¹⁾	(25,447)	(24,511)
Underlying Return on average Capital Employed (RoaCE) ¹⁾	1.3 %	6.6 %
Key Operational information		
	Year	Year
	2019	2018
Bauxite production (kmt) ³⁾	7,360	6,214
Alumina production (kmt)	4,487	3,712
Realized alumina price (USD/mt) ⁴⁾	326	429
Primary aluminium production (kmt)	2,038	1,993
Realized aluminium price LME (USD/mt)	1,827	2,140
Realized USD/NOK exchange rate	8.74	8.08
Rolled Products sales volumes to external market (kmt)	952	951
Extruded Solutions sales volumes to external market (kmt)	1,269	1,396
Power production (GWh)	9,150	10,693

1) Alternative performance measures (APMs) are described in the appendices to the Board of Directors' report.

2) EBITDA and investments per segment are specified in Note 1.4 Operating and geographic segment information in the financial statements.

3) Paragominas production, on wet basis.

4) Weighted average of own production and third party contracts. The majority of the alumina is sold linked to either the LME prices or alumina index with one month delay.

Hydro's underlying EBIT decreased to NOK 3,359 million from NOK 9,069 million for 2018. The decrease reflects lower realized aluminium and alumina prices, partly offset by the positive effects from increased production in Brazil, lower raw material costs and positive currency effects.

Underlying EBIT for Bauxite & Alumina decreased compared to 2018 driven by lower alumina sales price, partly offset by positive effects of increased production at Alunorte and Paragominas and positive currency effects.

Primary Metals' underlying EBIT declined substantially compared to 2018. The decrease was driven by lower all-in metal prices and lower earnings on power sales in Brazil, partly offset by positive currency effects and lower raw material costs.

Underlying EBIT for Metal Markets increased compared to 2018 due to higher results from the remelters, and sourcing and trading activities, partly offset by negative inventory valuation and currency effects.

The underlying EBIT for Rolled Products for 2019 was on the same level as last year. The result from the rolling mills was somewhat weaker. Increased costs related to the closure of part of the foil production at Grevenbroich were only partly offset by positive currency effects and somewhat lower operational costs. The Neuss smelter result increased, driven by lower raw material costs partly offset by lower all-in metal prices.

Extruded Solutions' underlying EBIT decreased compared to last year. Lower volumes, mainly resulting from the cyber-attack and a declining market, as well as higher costs, were partly offset by higher margins. Extrusion Europe results were lower, driven by a decline in most market segments. Extrusion North America results decreased somewhat mainly due to lower volumes and increased costs, offset by higher margins.

Compared to the previous year Energy's underlying EBIT was significantly lower, mainly due to lower production.

Impairments, rationalization charges and other effects

An impairment of NOK 506 million at Hydro's majority-owned Svalco primary aluminium plant in Slovakia was recognized 2019, reflecting the weakening market

environment combined with Svalco's relatively high cost position and uncertainty relating to the renewal of its power contract expiring at the end of 2021. Bauxite & Alumina recognized an impairment of NOK 145 million for undeveloped bauxite resources considered unlikely for future development. Extruded Solutions recognized significant rationalization and impairment costs of NOK 651 million for the full year, related to the optimization of their asset portfolio. In addition, an increase in environmental provisions of NOK 125 million was recognized for an idle extrusion site in the US. Rolled Products recognized a provision of NOK 1,088 million in rationalization charges related to its ongoing strategic review.

All costs described above are excluded from underlying EBIT. See Note 2.5 Impairment of non-current assets in the financial statements and the Alternative Performance Measures section for further information.

Liquidity, financial position, investments

Hydro manages its liquidity at group level, ensuring sufficient funds to cover group operational requirements.

Hydro's net debt was NOK 11.8 billion at the end of 2019, compared to NOK 11.7² at the end of 2018. Net cash provided by operating activities of NOK 12.6 billion was sufficient to cover net cash used in investing activities of NOK 9.2 billion and dividend payments of NOK 2.6 billion to Norsk Hydro's shareholders.

Hydro's adjusted net cash (debt) to equity ratio was 37 percent, well below its targeted maximum ratio of 55 percent. Funds from operations to average adjusted net cash (debt) ratio was 27 percent, which is below the targeted minimum of 40 percent over the business cycle. See note 7.1 to the financial statements for information on Hydro's capital management measures.

Norsk Hydro ASA has a USD 1.6 billion revolving multi-currency credit facility with a syndicate of international banks, maturing in December 2024, with two one-year extension options. The facility was undrawn per year-end 2019. The facility will continue to serve primarily as a back-up for unforeseen funding requirements. See Note 7.1 Capital management in the Financial statements for additional information.

² Adjusted from NOK 8.7 billion, as reported in 2018, to NOK 11.7 billion due to IFRS 16 implementation effects as specified in note 10.5 to the consolidated financial statements.

Reported EBIT and net income

In addition to the factors discussed above, reported earnings before financial items and tax (EBIT) and net income include effects that are disclosed in the table below. Items excluded

from underlying EBIT and underlying net income (loss) are defined and described as part of the Alternative Performance Measures in the Appendices to the Board of Directors' report.

Items excluded from underlying EBIT and net income ¹⁾	Year	Year
NOK million	2019	2018
Unrealized derivative effects on LME related contracts	91	39
Unrealized derivative effects on power and raw material contracts	(99)	(260)
Metal effect, Rolled Products	370	(73)
Significant rationalization charges and closure costs ²⁾	1,484	79
Impairment charges ³⁾	906	-
Alunorte agreements - provision ⁴⁾	80	519
Transaction related effects ⁵⁾	21	-
Pension ⁶⁾	(62)	40
Other effects ⁷⁾	68	203
Items excluded from underlying EBIT	2,860	547
Net foreign exchange (gain)/loss	1,204	1,303
Calculated income tax effect	(986)	(355)
Items excluded from underlying net income	3,078	1,495
Income (loss) tax rate	(52)%	33%
Underlying income (loss) tax rate	72%	30%

1) Negative figures indicate reversal of a gain and positive figures indicate reversal of a loss.

2) Significant rationalization and closure costs include a provision for costs related to reduction of overcapacity, closures and environmental clean-up activities in Rolled Products and Extruded Solutions.

3) Impairment charges for 2019 include write downs of undeveloped bauxite resources in Brazil, the Slovaco smelter and various assets in Extruded Solutions.

4) Alunorte agreements - provision relates to provisions for the TAC and TC agreements with the Government of Pará and Ministério Público made on September 5, 2018, including later adjustments for changes in cost estimates.

5) Transaction related effects include a net gain of NOK 14 million related to divestment of an Extruded Solutions plant in 2019 and a loss of NOK 35 million related to revaluation of Hydro's pre-transactional 50 percent share in Technal Middle East and to fair value allocated to inventory sold during the year.

6) Pension includes adjustments in Extruded Solutions as described in Alternative Performance Measures section in the appendices to the Board of Directors' report.

7) Other effects include adjustments in Rolled Products, Extruded Solutions, Energy, as well as Other and eliminations as described in the in Alternative Performance Measures section in the appendices to the Board of Directors' report.

Market developments and outlook

Upstream market developments

The Platts alumina price index started the year at USD 395 per mt ranging from USD 275 - 418 per mt during 2019 and ended the year at USD 275 per mt. The price index remained above USD 350 per mt until the Alunorte production embargo was lifted in May and declined steadily thereafter to end the year at the low of USD 275 per mt. The Platts alumina price index averaged USD 331 per mt for the year, a 30 percent decrease compared to 2018. Prices as a percentage of LME varied, averaging 18.3 percent for the year compared with 22.5 percent in 2018. The price index at the end 2019 represented 15.0 percent of the three-month aluminium price quoted on LME.

As the Alunorte refinery increased production rates following the lifting of the production embargo in May, traditional alumina trade flows were re-established. China imported 1.6 million mt (1.4 million mt net of exports) of alumina in 2019 compared to net exports of 1.0 million mt in 2018 which was required to balance the World ex China alumina market last year.

China imported 100.7 million mt of bauxite in 2019, 22 percent higher than the previous year. Driven by new mines increasing production, imports from Guinea increased 16 percent from 2018 to 44.4 million mt, slightly below the 21 percent increase in imports from Australia (36.0 million mt). Those two countries accounted for 80 percent of China's bauxite imports, compared to 82 percent in 2018. Imports from Indonesia increased 91 percent to 14.4 million mt as monthly exports increased after a government-imposed export ban was lifted. Imports from Brazil increased 18 percent to 1.6 million mt. Imports from the Solomon Islands and Malaysia reached 1.2 million mt and 0.8 million mt, respectively.

The price of bauxite imported into China in 2019 decreased to an annual average of USD 51 per mt CIF China compared to USD 53 per mt CIF China in 2018.

Three-month LME prices started the year around USD 1,850 per mt and ended the year at USD 1,830 per mt. During the first quarter of 2019, prices moved towards USD 1,950 per mt due to very strong alumina prices on continued Alunorte uncertainties regarding restart. As Alunorte restart was announced, three-month LME price moved down to USD 1,800 per mt and it stayed in a USD 1,730 to 1,830 per mt range throughout the year.

North American and European standard ingot and product premiums started the year at USD 419 per mt and at USD 115 per mt respectively. European standard ingot premiums improved from start of the year to end of the third quarter based on both demand and healthy fundamentals, however premiums decreased towards the year-end. North American standard ingot premiums, on the other hand, traded sideways on very high levels for the first five months of the year before falling somewhat on the lifting of import duties from Canada. Towards the end of the year, North American standard ingot premiums fell by almost USD 100 per mt due to demand contraction and availability of secondary aluminium. North American and European standard ingot and product premiums ended the year at USD 320 per mt and at USD 140 per mt respectively. Average North American standard ingot premiums decreased USD 24 per mt compared to 2018, while corresponding standard ingot premiums in Europe decreased about USD 22 per mt.

Global primary aluminium consumption decreased by 1.1 percent to 64.4 million mt in 2019. Global supply decreased by 0.5 percent to 63.4 million mt resulting in global deficit of around 0.9 million mt. For 2020, global primary aluminium demand is expected to increase by 0-1 percent and aluminium production is expected to increase by 3-4 percent, resulting in a global surplus in 2020.

Demand for primary aluminium outside China decreased by around 3.3 percent in 2019, while corresponding production increased by 1.1 percent. Overall, demand outside China exceeded production by around 0.5 million mt in 2019. Demand for primary aluminium outside China is expected to change by around negative 1 to positive 1 percent in 2020. Corresponding production is expected to be up about 1 percent, leaving the world outside China in largely balanced for 2020.

Demand for primary metal in China increased around 0.6 percent to 36 million mt in 2019. Chinese production declined by 1.8 percent in 2019, resulting in a small deficit for the year. The historically low Chinese production growth was a result of further closures following supply-side reform and larger smelter disruptions. Chinese primary production is expected to increase by 4-6 percent in 2020. Primary demand is estimated to increase by around 1-3 percent, resulting in a surplus in 2020.

LME stocks increased slightly in 2019, from 1.3 million mt at the end of 2018 to 1.5 million mt at the end of 2019. The increase occurred mainly in the fourth quarter, driven by backwardation attracting metal to LME warehouses. Total inventories, including unreported inventories are estimated to have declined by 0.9 million mt in 2019. The total stock level is estimated to be around 11.2 million mt at the end of 2019.

Demand for extrusion ingot and foundry alloys in Europe decreased in 2019 compared to the previous year. The consumption of sheet ingot and wire rod in the European market remained stable in 2019 compared to 2018. US extrusion ingot consumption declined during the second half of the year while primary foundry usage remained relatively stable. In Asia, a faster-than-expected slowdown in China, growing trade tensions and rising geopolitical risks lead to moderate regional growth. The extrusion ingot market was mostly stagnant, while the downturn in automotive markets

across the region lead to a year-on-year contraction in the foundry alloy market.

Downstream market developments

European demand for flat rolled products was stable in 2019. Lower car production and weaker demand in general engineering were balanced by positive growth rates from beverage can, driven by ongoing steel line conversions and the substitution of PET bottles. The market for aluminium foil was soft and impacted by increased imports. European demand is expected to grow by 1 percent in 2020.

European demand for extrusions weakened towards the end of 2019, with overall demand estimated to have decreased close to 4 percent compared to 2018. Demand was impacted by overall weaker industrial production in several European countries, as well as declining automotive production. North American demand for extrusions also weakened towards the end of the year, the decrease is estimated to be 5 percent for the full year. The key drivers for the weaker demand were decelerating activity in the truck and trailer segment, as well as overall softer demand in building and construction.

In recent years the European market has seen increasing levels of Chinese imports at low prices. Unlike the US and several other countries, no anti-dumping policies against Chinese extrusion imports are currently in place. However, in February 2020 the EU launched formal anti-dumping proceedings on extrusion imports from China.

Energy market developments

Nordic electricity prices declined somewhat in 2019 from a relatively high price level in 2018, primarily due to improved hydrology and lower power consumption, particularly during the first six months of the year. The Nordic price decline was also impacted by falling production costs for coal and gas fired power plants which in turn affected power prices in Continental Europe. Even though the hydrological balance improved in 2019 it remained, on average, below normal for the year.

In Brazil, the seasonal oversupply in the north during the wet season caused relatively low prices in the first half of 2019. The hydrological balance remained well below normal throughout 2019. At the end of the wet season, prices in the North region aligned with the South-East region at a higher level, which largely continued towards the end of the year.

Risk review

Hydro has an enterprise risk management (ERM) model, approved by the Board of Directors. In accordance with this model, risk factors that are relevant for Hydro's business are continuously identified, analyzed, addressed and monitored. Risk management is an integral part of our business activities where strategic and incident risks are managed at Group and Business Area levels respectively.

Hydro's corporate staffs establish and develop policies and procedures for managing risk and coordinate an annual overall enterprise risk assessment. Major risks are analyzed and managed according to Hydro's risk appetite, through the annual strategy process. Mitigating actions are followed

up, on an ongoing basis, as part of our internal performance review structure. In order to improve risk management, including ensuring mitigating actions correspond with appetite, Hydro's ERM process is currently being revised. The main process improvements include more granularity in risk descriptions and evaluations, and a more distinct differentiation between strategic and incident risks.

Risk management in Hydro is based on the principle that risk evaluation and mitigation is an integral part of all business activities. The core strategy to reduce the risks related to weak economic and unfavorable market developments is the continual improvement of our competitive position, differentiated capital allocation, as well as maintaining a solid financial position and strong creditworthiness.

Below is a description of some of the principle risks identified that may affect business operations, reputation, financial condition, results of operations and, ultimately share price. Some of the mentioned risks might have a positive business impact or represent a business opportunity, whereas the focus in the description below is on downside risk. Whilst this report is accurate at its time of generation, readers are reminded that risks will emerge, increase, decrease or change with time and events. All information in this report should be carefully considered by investors, in particular, the risks described in this section.

Changes in the regulatory framework or political environment in which Hydro operates could have a material effect on the company

Hydro needs competitive and predictable framework conditions. Hydro is subject to a broad range of laws and regulations in the legal jurisdictions in which we operate. These laws and regulations impose stringent standards and requirements and potential liabilities. Some examples include accidents and injuries, the construction and operation of our plants and facilities, taxes and tariffs, air and water pollutant emissions, the storage, treatment and discharge of waste waters, the use and handling of hazardous or toxic materials, waste disposal practices, and the remediation of environmental contamination, among other things. Changes in such laws and regulations, or changes in the way these laws and regulations are interpreted or enforced, may impact Hydro's operations.

Hydro is exposed to macroeconomic developments, including price and currency risk, demand/supply balances, and changes in global trade policy framework

The aluminium industry is pro-cyclical with demand for products closely linked to economic development. This results in volatility in the market prices for aluminium products in periods of macroeconomic uncertainty or recession. Specific incidents with a macroeconomic impact such as the US-Iran conflict or a major epidemic outbreak could also have an impact on Hydro. Macroeconomic development and political instability also drive changes in currency rates, which have a significant effect on Hydro's cost and competitive position. A large share of Hydro's operations has production cost in local currencies, in countries such as Norway, Germany, Brazil, Canada and Australia. If these currencies appreciate against the USD, this will increase cost and may weaken Hydro's global competitive position relative to production from other regions. Aluminium products are traded globally, and

therefore affected by the development in global trade flows, trade frameworks, tariffs and anti-dumping legislation.

After the outbreak of the coronavirus (COVID-19), authorities in an increasing number of countries have taken strong measures to reduce the spread of the virus. This is likely to reduce the global economic activities for a certain period of time, which again will affect the demand for aluminium in such period. Further, due to disruptions in the supply chain, our suppliers, Hydro and Hydro's customers may be inhibited from receiving raw materials, which again may disrupt Hydro's production or sale of products. Except for the macro-economic effects, the situation has currently had limited effect on Hydro's operations, but if the situation continues or escalates, it may have a significant effect on Hydro's financial results. Hydro is monitoring the situation carefully, and is continuously working to find mitigating solutions if the situation continues or escalates.

Hydro is exposed to competition from China, which could have an impact on market prices and demand for our products

China is the world's largest consumer and producer of aluminium, with more than half of the global production capacity. As a result, changes and developments in aluminium supply and demand in China have a significant impact on global market fundamentals.

Hydro could be affected by material CSR incidents, investigations, legal proceedings, or major non-compliance with laws and regulations

Hydro could be negatively affected by criminal or civil proceedings or investigations related to, but not limited to product liability, environment, health and safety, alleged anti-competitive or corrupt practices or commercial disputes. In addition, Hydro is exposed to allegations or perceived failures to behave in a socially responsible manner and to manage social impacts, particularly related to human rights breaches. Infringement of applicable laws and regulations could result in fines or penalties, costs of corrective work, the suspension or shutdown of our operations and damage to the company's reputation.

Hydro could be affected by operational disruptions or other major incidents and may not be able to maintain sufficient insurance to cover all risks related to its operations

Hydro is exposed to a number of risks and hazards which could result in disruptions to operations. Breakdown of critical equipment, power failures or other events leading to production interruptions in key plants could have a material adverse effect on our financial results and cash flows. Some operations are located in close proximity to sizable communities, and major accidents could result in substantial claims, fines or significant damage to Hydro's profitability, and or reputation.

Hydro is exposed to supply chain concentration risk and may experience disruption in supply of alumina, anodes or certain alloy materials

Hydro is exposed to risks related to supply chain concentration. This includes parts of the supply chain with one or a limited number of suppliers, or where multiple suppliers are concentrated in the same area and where there is a risk of simultaneous supply interruptions. Such interruptions could be a result of changes in regulatory

framework, operational disruption, major public health issues etc. Hydro's assets within Bauxite & Alumina are concentrated in Brazil and include the Paragominas bauxite mine, Alunorte alumina refinery and the 244km bauxite slurry pipeline connecting the two. As Hydro receives almost all of its alumina from Alunorte, these assets are critical for the supply of alumina to the rest of the Hydro Group, both in Brazil and Europe, and Hydro is reliant on their ability to maintain stable operations. Hydro's exposure to supply chain concentration risk also includes risks related to the supply of anodes and certain alloy materials from China.

Hydro may fail to realize sufficient value in the execution and implementation of major projects or business acquisitions

Hydro makes significant capital investments and acquisitions as part of its business development and may not be able to realize the benefits expected from such transactions and projects. Major projects and acquisitions are subject to significant risk, and uncertainty in making the investment evaluation, project execution and subsequent operations. Acquisitions may also contain significant unidentified risks and liabilities.

Hydro is exposed to the threat of cyber-attacks which may disrupt its business operations, and result in reputational harm and other negative consequences

Hydro's IS/IT infrastructure is a critical element in all parts of our operations, ranging from process control systems at production sites to central personnel databases and systems for external financial reporting. Cyber-crime is increasing globally, and Hydro is exposed to threats to the integrity, availability and confidentiality of systems. Threats may include attempts to access information, ransomware attacks, destructive installation of viruses, denial of service and other digital security breaches.

Hydro may be unable to achieve or maintain the operational targets necessary to secure the competitiveness of our business

Hydro operates in a highly competitive market where operational excellence in all parts of the value chain is required to reach and maintain a competitive position. This includes each step of the business process from the sourcing of raw materials, to physical operations of each plant, and the commercial optimization of the product portfolio. Disruptive technological development by competitors could threaten Hydro's competitiveness. Failure to create an environment and competence which enables the organization to continuously achieve increased operational targets will reduce the competitiveness of our business.

Occupational health and safety, and security risks

Hydro is exposed to occupational health, safety and security risks at sites and whilst on travel. Due to its global operations, Hydro is exposed to major public health issues, such as outbreaks of pandemics or epidemics. These risks have the potential to impact Hydro's employees and contractors, operations of assets, and in specific incidences local communities and reputation. Hydro is monitoring the development of the Coronavirus disease (COVID-19) and assessing current and potential impact on employees and operations. Initial mitigating actions have been implemented and further mitigating actions are evaluated on a continuous basis.

Climate change and environmental risks

Hydro is exposed to physical climate related risks, risks related to the transition to a low-carbon economy and other environmental risks mainly related to our operations in Brazil. Climate-driven changes in consumer behavior, such as substitution of aluminium by other materials is also a risk to Hydro. In addition to environmental incidents, there are risks related to the effects of known and unknown historical and current emissions to air, water and soil.

Financial position

Hydro's main strategy for mitigating risk related to volatility in cash flow is to maintain a strong balance sheet and an investment grade credit rating. The targeted key financial ratio levels over the business cycle are described in note 7.1 to the financial statements.

Key financial exposures

Hydro's operating results are primarily affected by price developments of our main products, raw materials, margin developments and to fluctuations in the most significant currencies for Hydro, which are the USD, NOK, EUR and BRL.

To mitigate the impact of exchange rate fluctuations, long-term debt is mainly maintained in currencies reflecting underlying exposures and cash generation. Hydro may also use foreign currency swaps and forward currency contracts to reduce effects of fluctuations in the US dollar and other exchange rates.

The table below shows sensitivities regarding aluminium prices and foreign currency fluctuations for 2019. The table illustrates the sensitivity of earnings, before tax, interest and depreciation (EBITDA) to changes in these factors and is provided to supplement the sensitivity analysis required by IFRS, included in note 8.2 to the financial statements. These sensitivities do not consider revaluation effects of derivative instruments, which may influence earnings.

Sensitivities with 100% production

Commodity price sensitivity +10%

NOK Million	UEBIT
Hydro Group	
Aluminium	3,660

Currency sensitivities +10%

NOK Million	USD	BRL	EUR
Sustainable effect			
EBIT	3,280	(1,100)	(220)
One-off reevaluation effect			
Financial items	(60)	830	(3,570)

Annual sensitivities based on normal annual production volumes, LME USD 1 750 per mt, USDNOK 9.07, BRLNOK 2.21, EURNOK 10.09.

Compliance, controls and procedures

Hydro's Code of Conduct requires adherence with laws and regulations as well as internal directives and procedures. It is systematically implemented and followed up through our compliance system. The compliance system is based on four pillars: prevention, detection, reporting and responding. In addition to financial compliance, priority areas are health, safety and environment (HSE), anti-corruption, competition law and data privacy (see the section Society).

Hydro follows the Norwegian Code of Practice on Corporate Governance of October 2018. Details on Hydro's compliance with the code are in the section Norwegian Code of Practice on Corporate Governance, in the appendices to this report.

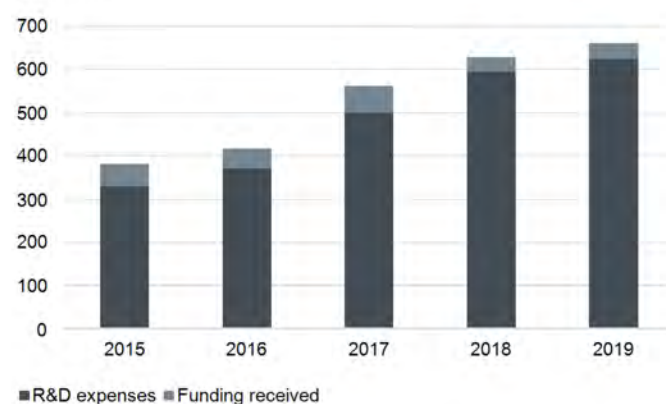
The Board Audit Committee carries out a control function and assists the board in exercising its oversight responsibility with the company's financial reporting and the requirements that extends beyond the financial reporting, covering environmental, social and governance issues.

Research and development

The greater part of our R&D expenses goes to our in-house research and application development organization, while the remainder supports work carried out at external institutions. Our main R&D centers are in Årdal (smelter technology) and Sunndal (alloys and casting) in Norway, Bonn in Germany (Rolled Products), and Finspång in Sweden and Detroit in the USA (both Extruded Solutions). A significant research and development department for Bauxite & Alumina has been built up in Alunorte in Barcarena, Brazil.

R&D Expenses

NOK million



Our R&D efforts are concentrated on:

- Making products and solutions that promote the use of aluminium and sustainable development
- Implementing technology elements in order to optimise productivity, energy efficiency and emissions in smelters

- Using R&D and technology to ensure optimal operations in existing assets, including cost and HSE
- Improving environmental impact in Bauxite & Alumina, such as biodiversity, rehabilitation and utilization of bauxite residue
- Developing recycling technology
- Increasing the share of value-added products and tailored solutions in collaboration with the customer
- Utilizing the opportunities of Industry 4.0 to improve process stability, productivity, cost and safety



Hydro's Technology Board consists of the members of Hydro's Corporate Management Board. The technology and innovation group meet every quarter to understand and discuss innovations in the business areas, including their value to the company. Innovations include the changes achieved through our continuous improvement work on all organizational levels. Business areas are responsible for their own technology development and for the execution of their respective technology strategies. A corporate technology office is established to ensure a holistic and long-term approach to Hydro's technology strategy and agenda. The Chief Technology Officer leads an internal R&D network with representatives from the business areas, and supports the Hydro Technology Board in developing overall research and technology priorities and strategies.

A major advantage for Hydro from an innovation perspective is our broad knowledge and control of the entire value chain from bauxite mining, alumina refining, electrolysis of primary aluminium and alloy technology to finished products and recycling.

We are now in the process of implementing the technology elements from the Karmøy Technology Pilot in our existing primary aluminium producers, improving performance and financial robustness. This includes the Husnes line B, planned to start production in 2020, and as a part of the regular maintenance and relining of our electrolysis cells in all smelters, where Sunndal presently has a strong focus due to its importance in the smelter portfolio. Hydro has also started working on several initiatives to reduce direct CO₂ emission in primary aluminium production.

Bauxite residue is a challenge in our industry due to its alkalinity and large volumes. Hydro participates in international collaboration projects investigating possibilities to use bauxite residue as a resource. An important example is together with the Norwegian University of Technology and Science (NTNU), Sintef, Norcem/Heidelberg and Veidekke to develop a new type of concrete using bauxite residue as a resource to improve quality. We are also working together with other aluminium companies through the International Aluminium Institute to solve this industry challenge. In addition, we are investing in R&D to reduce the total alkalinity of the bauxite residue.

An important part of Hydro's overall technology strategy is that our researchers cooperate closely with operators and experts in optimizing operations in existing plants. The

competence base in Hydro's technology environments is on a very high level and in core areas it is world-class.

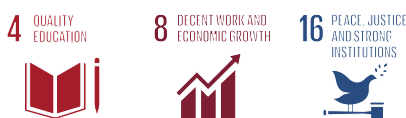
The growing use of aluminium in the automotive industry is being driven by emissions regulations and passenger safety requirements. Aluminium is well suited for all cars, from petrol-powered automobiles to fully electric vehicles and vehicles which use hydrogen fuel cell technology. This is creating new opportunities for Hydro. Hydro is a large supplier to the automotive industry. Customers include major producers in Europe, North America and Asia.

Society

As a global aluminium company with mining interests, ensuring responsible conduct in relation to society at large is important throughout Hydro's activities. We have to consider our impact on society, spanning from construction to divestment and closure activity, as well as the exposure to corruption and human rights violations, both within our own operations, the communities we are part of, and in the supply chain.

Our compliance system shall ensure that all persons acting on behalf of Hydro comply with applicable laws and regulations and with the requirements adopted by Hydro. Some of the measures we pursue to ensure integrity and responsible behavior include:

- Zero tolerance of corruption in the private and public sector
- Ongoing human rights due diligence, including audits of joint ventures and suppliers
- Continuous stakeholder engagement linked to existing operations and new projects



Hydro's board-sanctioned Code of Conduct creates the foundation that supports our efforts to do the right things and to always act with integrity throughout our global organization wherever we operate and conduct business on behalf of Hydro. It requires adherence with laws and regulations as well as internal constituting documents and global directives and is systematically implemented and followed up through our compliance system.

Our compliance system is based on a clear governance structure defining roles and responsibilities with regards to compliance and all compliance-related activities undertaken throughout the company.

The management of compliance risks, including risks related to corruption and human rights violations, are integrated in our business planning, enterprise risk management and follow-up process, including relevant risk-mitigating actions and key performance indicators. The progress of actions as well as any non-compliance matters is addressed in the quarterly performance review meetings that each business

area has with the CEO, and an annual compliance report is submitted to the Board of Directors. The head of Group compliance reports to the Board of Directors through the Board Audit Committee at her own discretion. She meets with the Board of Directors periodically and participates in all Board Audit Committee meetings.

The Head of internal audit reports to the company's Board of Directors through the Board Audit Committee. Every quarter she informs the board audit committee and periodically the Corporate Management Board about matters reported through the AlertLine. Hydro's internal audit has resources both in Norway, Brazil and North-America.

We are committed to building a culture of trust where employees are comfortable to ask questions, seek guidance, raise concerns, and report suspected violations. Normally, concerns and complaints should be raised with the employee's superior. However, if the employee is uncomfortable with that, he or she may raise the issue with Human Resources, HSE, a union/safety representative, Compliance, Legal or Internal Audit. The employee can also use Hydro's whistle-blower channel, AlertLine, where concerns can be reported anonymously. All employees and on-site contractors can use the AlertLine in their own language at all times via tollfree phone numbers, Hydro's intranet or through a dedicated address on the Internet. In certain countries, e.g. Spain, there are legal restrictions on such reporting lines. In 2019, 347 reports were filed through Hydro's AlertLine compared to 342 in 2018. All cases were investigated. In total 20 persons were dismissed as a result of breaches of Hydro policy in 2019. The number is limited to cases reported to Hydro's Internal Audit. This includes two persons related to two cases of substantiated corruption.

Grievance, or complaint, mechanisms are important to understand the impact of Hydro's operations, and the impact on the rights of individuals and groups affected by our operations. Grievances may be of any kind, including social and environmental issues, and can be made anonymously. In situations where we identify adverse human rights impact, we work to mitigate, prevent, address and remedy these as recommended in the UN Guiding Principles on Business and Human Rights. Channels for submitting grievances vary depending on local needs and stakeholder groups. In Brazil, the system has several channels, including a phone number, email and dedicated, specially trained field workers.

Hydro will not tolerate retaliation against anyone who speaks up in good faith to ask a question, raises a concern, reports a suspected violation or participates in an internal company investigation.

We are committed to respecting and promoting the human rights of all individuals potentially affected directly or indirectly by our operations. As an employer, owner and purchaser, an important contribution toward respecting human rights is to secure decent working conditions in our organization, in minority-owned companies and with our suppliers.

Hydro supports key frameworks that define human rights principles and is committed to follow these, including the UN Guiding Principles on Business and Human Rights. Hydro's human rights management is based on the OECD Due Diligence Guidance for Responsible Business Conduct.

We do not tolerate any form of harassment or discrimination, including but not limited to gender, race, color, religion, political views, union affiliation, ethnic background, disability, sexual orientation or marital status, any form of forced labor or child labor abuse.

Hydro is concerned about fundamental labor rights, such as minimum wage requirements and the regulation of working hours, and we support the principle of freedom of association and collective bargaining. We have a long tradition of maintaining a good dialogue with employee organizations. All major sites in Europe and Brazil are unionized. Extruded Solutions has a major presence in the US, and about 60 percent of our US employees are working at unionized sites. All business areas have a forum for dialogue between the management and union representatives. Hydro's Global Framework Agreement was last updated in 2016. The parties are currently negotiating a new agreement.

We recognize that our activities impact the societies in which we operate, and we have a long tradition of conducting dialogues with the relevant parties affected by our activities. These include unions, works councils, customers, suppliers, business partners, local communities, local authorities and non-governmental organizations. Hydro has significant operations in Barcarena, Brazil, including the Alunorte alumina refinery and Albras aluminium plant. Local social conditions are challenging with high levels of unemployment and general poverty. We have established contact with local authorities and representatives for our neighbors, including dialogue with traditional Quilombola groups in Brazil.

The Brazilian consultancy Proactiva is currently conducting a thorough human rights due diligence of operations in Pará state, Brazil. The due diligence covers Alunorte alumina refinery, Albras primary aluminium producer and the Paragominas bauxite mine, including the pipeline. The due diligence was high on the agenda of the Corporate Management Board in 2019, and part of their key performance indicators (KPIs). The final results are expected in the first half of 2020.

Unresolved issues remain related to identifying individuals directly impacted by the construction of a 244-km-long bauxite pipeline that crosses areas inhabited by traditional Quilombola groups in the Jambuaçu Territory in Pará state, Brazil. Hydro is working together with different stakeholders, including, but not limited to, Fundação Cultural Palmares, Quilombola communities, and the State of Pará, to establish an agreement that seeks to remedy impacts.

Hydro's social responsibility ambition is to make a positive difference by strengthening our business partners and the local communities where we operate. To do this, we target the fundamental drivers of long-term development. In line with stakeholder expectations and needs, and through strong partnerships, we aim to:

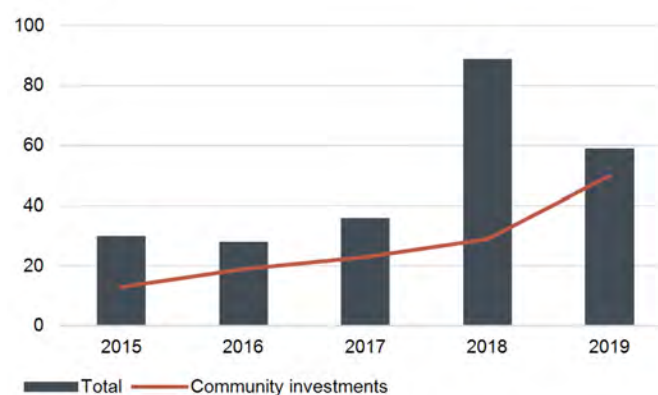
- Contribute to quality education in our communities
- Promote decent work throughout the value and supply chain
- Foster economic growth in our communities
- Strengthen local communities and institutions through capacity building on human rights and good governance

We have committed to contribute to quality education and capacity building for 500,000 people in our communities and for business partners from 2018 until end of 2030. In 2019, we reached over 26,000 people. Continuous improvement of current initiatives and development of new effective, high-impact initiatives will be important going forward.

Some of our community programs are linked to mining license requirements, while others are voluntary commitments. The programs target education, economic growth, decent work, capacity building and strengthening of institutions.

Community investments, charitable donations and sponsorships

NOK million



In 2018, around 45 million NOK relates to emergency relief and TAC-agreement following the extreme rainfall and subsequent flooding of Barcarena. Extruded Solutions has a wide range of sponsorships and support programs based on local needs. These activities are not yet included in Hydro's reporting.

In Pará state, Brazil, Hydro currently has more than 10 social programs across the seven municipalities where we have operations. For each of these projects, we have an implementation partner. The implementation partners met several times in 2019 to share knowledge and identify synergies to strengthen our partners and contribute towards the common goal of local development.

We initiated the Sustainable Barcarena Initiative in 2018 and have continued developing it in 2019. The initiative is an independent platform for sustainable development in Barcarena in Pará state. The overall aim is to bring local stakeholders together to discuss challenges and opportunities, strengthen capabilities and ultimately invest in the social initiatives they plan and develop together. In 2019, we established the Hydro Sustainability Fund which serves as a financing mechanism for the Sustainable Barcarena Initiative. The first round of financing is currently underway. Hydro contributes with BRL 100 million to the fund over a 10-year period. The fund will also seek funding from other sources. In 2020, we will continue supporting the development of the Sustainable Barcarena Initiative.

In Pará state we also engage with regional initiatives to preserve the Amazon. We run several programs that emphasize entrepreneurship and strengthening of traditional livelihoods. This also includes environmental efforts and

collaborations such as the Biodiversity Research Consortium Brazil-Norway.

Hydro's supplier and business partner requirements regarding social and environmental responsibility are, as stated in our global directives and procedures, an integral part of all stages of the procurement process. The requirements demand the suppliers and business partners to comply with all applicable laws and regulations relating to corruption and bribery, human rights, working conditions and environment and that they reflect the values and principles that Hydro promotes internally and externally.

To prepare for and respond to intentional, unintentional and/or naturally caused disasters, and to protect people and critical assets, we adapt and initiate security measures depending on the evolving risk picture.

Hydro has been included in the Dow Jones Sustainability Indices each year since the index series started in 1999. We are also listed on the corresponding UK index FTSE4Good, and the UN Global Compact 100 stock index.

Hydro support the principles underlying the Universal Declaration of Human Rights, the UN Global Compact and ILO's eight core conventions. We are a member of the International Council on Mining and Metals (ICMM) and are committed to follow their principles and position statements. Hydro has a long-standing partnership with Amnesty International Norway since 2002, and a cooperation agreement with the Danish Institute for Human Rights. We are also a founding member of the Aluminium Stewardship Initiative, a multi-stakeholder process to set standards to improve environmental, social and governance performance across the aluminium value chain. Forty of Hydro's aluminium sites worldwide have achieved certification according to the ASI, covering Hydro's value chain from bauxite mining to finished products.

Hydro uses the GRI Standards for voluntary reporting of sustainable development. We support the Extractive Industries Transparency Initiative (EITI) and comply with the Norwegian legal requirements on country-by-country reporting, and we prepare a modern slavery transparency statement according to UK and Australian legislation, see the appendices to this report.

In addition, we follow the Euronext guidelines to issuers for ESG reporting.

Environment

The most important environmental effects of Hydro's activities relate to climate change, biodiversity, recycling and water and waste management. The main resource inputs are bauxite, energy, water and land use.



Hydro launched a new climate strategy towards 2030 in 2019, as our carbon neutral strategy is coming to an end in 2020. Hydro's overarching ambition towards 2030 is to reduce the global climate impact of our value chain through greener sourcing, greener production and

greener products. We aim to reduce our own emissions by 30 percent in 2030 and explore different paths towards further significant emissions reductions and CO₂-free processes by 2050. Through greener sourcing and greener production, we also aim to help our customers in reducing their emissions through providing greener products.

Direct greenhouse gas emissions from Hydro's consolidated activities



Emissions in 2018 decreased due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Our new strategy puts more emphasis on reducing own emissions. Changes in our production portfolio might influence these targets, but our aim is still to reduce our specific emissions. We have set targets to reduce greenhouse gas emissions by 10 percent by 2025 and 30 percent by 2030, based on a 2018 baseline (2017 for Paragominas, Alunorte and Albras due to the production embargo at Alunorte and curtailment at Albras and Paragominas). The baseline emissions equal 13.3 million tonnes CO₂ equivalents (CO₂e) and includes direct emissions and indirect emissions from electricity generation (scope 1 and scope 2 emissions).

The timing is dependent on implementation of specific projects and the reduction is thus not anticipated to be linear from year to year. In order to have a greener production, we are looking into projects for significant emission reduction at Alunorte through a greener energy mix. We are also looking into improvement potentials throughout our organization.

The element "greener sourcing" in the new climate strategy refers to Hydro's position as a purchaser of raw materials and energy. Hydro has the opportunity to source less carbon-intensive electricity and cold metal with a lower carbon footprint. We also have the opportunity to increase the use of post-consumer scrap in metal production.

Innovation and technology development are key enablers towards reducing CO₂ emissions. We have initiated a significant R&D program towards 2030 to look into different alternatives to achieve CO₂-free processes. We will explore different paths such as carbon capture and storage, biomass anodes and carbon-free processes. By 2030 we expect to have a clearer view on a path to further significant emission reductions by 2050.

In 2018, Hydro concluded a review of its climate-related risks, including physical, technological, commercial, legal and reputational risk. The review forms the basis for scenario analyses and the updated climate strategy.

Since 2013, Hydro's ambition has been to be carbon neutral in a life cycle perspective. Carbon neutrality can be defined in many ways, and we define it as a balance between the direct and indirect emissions from our own operations, and the savings of applying our metal in the use phase. Hydro became carbon neutral in a life cycle perspective in 2019.

The goal of our new 2030 environmental strategy is to minimize our impact along the aluminum value chain by addressing the industry's key environmental challenges. We aim to do so by driving rehabilitation at our bauxite mine, developing and implementing sustainable management solutions for our tailings and bauxite residue streams whilst reducing our waste to landfill from our downstream operations and significantly reducing our non-GHG emissions to air.



Hydro's bauxite mine, Paragominas, is located in the state of Pará in Northern-Brazil, in the Amazon Basin. The rehabilitation target in our mining areas provides a driver for rehabilitation. It is a rolling target, aiming for

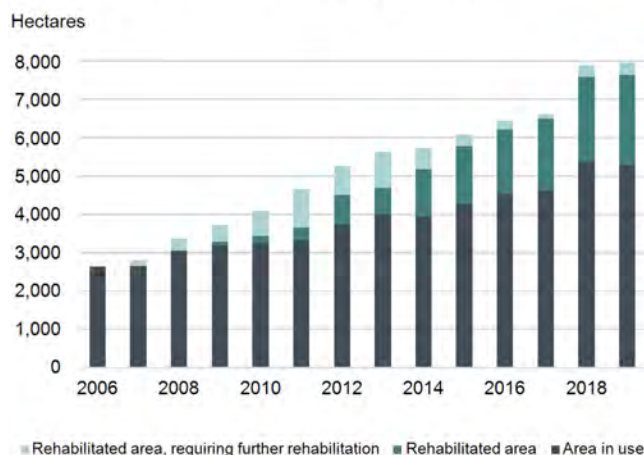
a 1:1 rehabilitation of mined areas available for rehabilitation over two hydrological seasons after release. This definition takes into account the nature of the mining and rehabilitation cycles, and the time lag necessary to ensure quality rehabilitation to restore biodiversity. It also takes into account that land periodically needs to be set aside for temporary infrastructure, e.g. roads, in order to safely operate the mine.

We cooperate with academic institutions to increase our knowledge and secure a science-based approach. This includes the formation of the Biodiversity Research Consortium Brazil-Norway (BRC) in 2013.

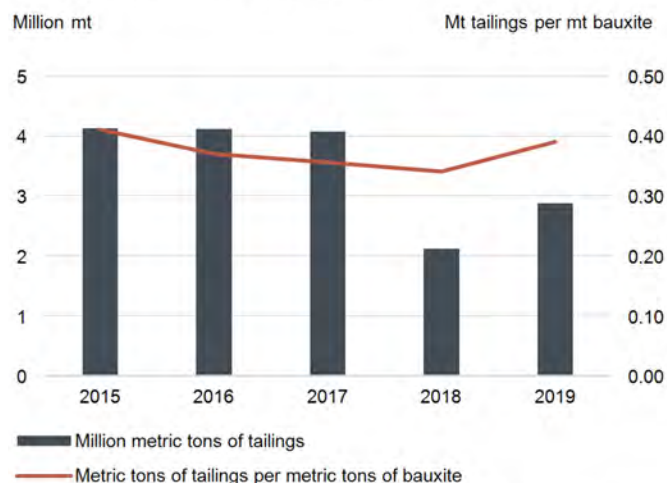
In addition to land use and biodiversity, the main environmental issues in bauxite extraction and alumina refining include waste disposal and greenhouse gas emissions. Waste production includes significant amounts of mineral rejects (tailings) from the bauxite extraction process and bauxite residue, from the alumina refining process. Tailings are stored in settling ponds. Separated water is clarified and reused in the process.

In Paragominas, a new tailings system was completed in 2017. The new tailings dams are situated on a plateau where mining has been finalized. The old tailings system is constructed in a shallow valley. When tailings dams are closed, they need to settle for at least five years before being available for rehabilitation. A tailor-made approach will be needed to rehabilitate the closed tailing dams as they differ in nature from the mined areas.

Land use and rehabilitation - Paragominas

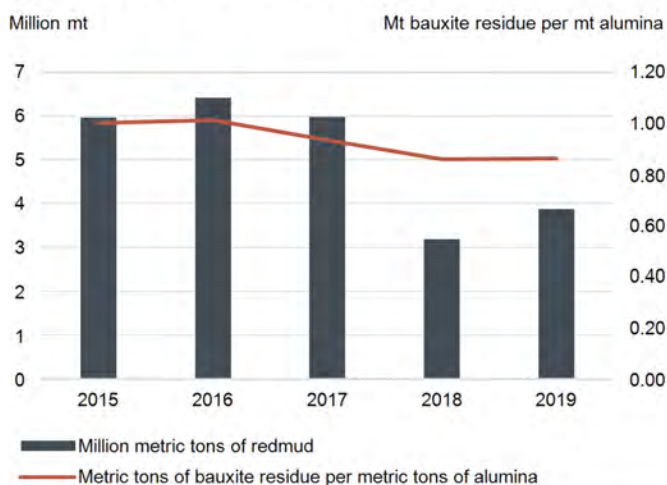


Tailings from bauxite production



Tailings production decreased significantly in 2018 due to the Paragominas curtailment. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

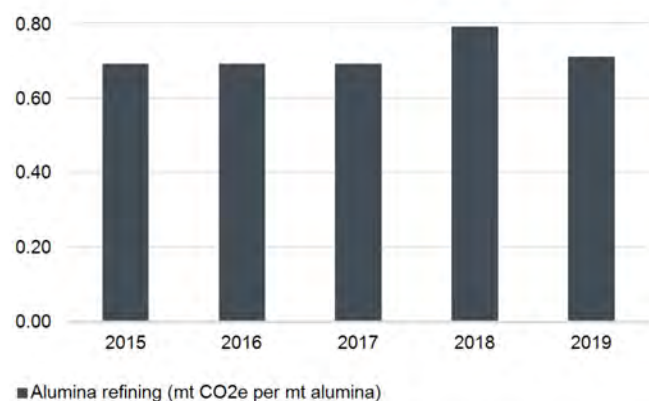
Bauxite residue from alumina production



Bauxite residue production decreased significantly in 2018 due to the Alunorte embargo. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

GHG emission intensity - alumina refining

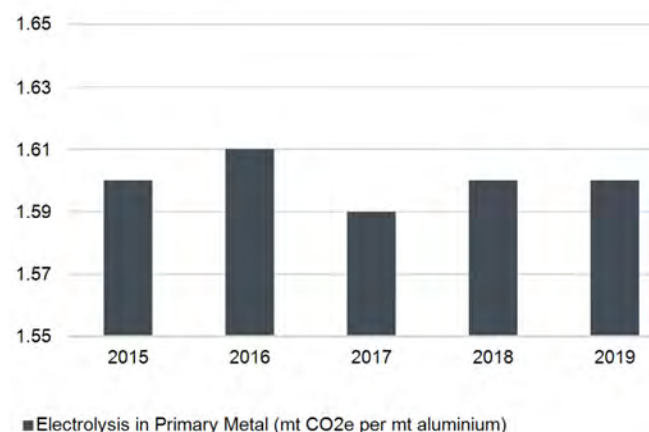
Mt CO₂e per mt aluminium



Includes greenhouse gas (GHG) emissions from alumina refining.

GHG emission intensity - electrolysis

Mt CO₂e per mt aluminium



Greenhouse gas (GHG) emissions from the electrolysis process from Hydro's smelters, excluding Neuss in Germany. Albras is excluded from the 2019 average due to extraordinary emissions during start-up of curtailed capacity. The emission intensity at Albras was 1.89 in 2019

Bauxite residue is a waste product of the alumina refining process. Its disposal is challenging due to large volumes and the alkaline nature of the liquid component of the residue. The residue is washed with water to lower the alkalinity and to recover caustic soda for reuse. Hydro uses an enhanced dry stacking technology for disposing of bauxite residue which allows for residue storage at steeper slopes, reducing the disposal area requirements. This reduces the relative environmental footprint. The new bauxite residue deposit area at Alunorte includes more advanced press filters. These are capable of reducing the residue moisture content to 22 percent, down from 36 percent achieved with the previous drum filter technology.

The dams and deposits are regularly inspected by Hydro and the Brazilian authorities. They have also been reviewed against international standards by external international geomechanical consultants NGI and Geomecnica. The last site visit by NGI and Geomecnica took place in 2016. The

resulting actions points were prioritized and are currently in the process of being closed. The majority have been closed successfully, with a smaller number still outstanding.

The Tailings Storage Facilities at Paragominas are raised exclusively using the downstream elevation method, with the exception of one relatively short and low centreline raising at the very top of the dam. The downstream elevation method provides the greatest level of structural integrity and safety. In addition, the tailings stored in our Tailings Storage Facilities are of a higher solids content (ca 55-60 percent solids content) than that generally found in the iron ore industry (e.g. Samarco and Brumadinho).

Hydro's Tailings Storage Facilities and bauxite residue storage areas are operated in line with all relevant regulations, however following the extreme rain event in February 2018, the free board levels at DRS1 were exceeded for few days leading to a production embargo at Alunorte. We also follow voluntary best practice and audits are conducted by international third parties. Following the Brumadinho tragedy in January 2019, Hydro reviewed its Tailings Storage Facilities to ensure continued safe operations and management. Hydro continues to work on improving its tailings management practices and collaborate with relevant stakeholders. Hydro participated in the Tailings Storage Facilities disclosure request initiated by investors and co-chaired by the Church of England pension board in the first half of 2019. Hydro is also participating in the drafting of a new International Standard for Tailings Storage Facilities through our membership in ICMM, which is one of the three co-conveners of the International Standard alongside UN Environment Program (UNEP) and PRI, an investor initiative in partnership with UNEP Finance Initiative and UN Global Compact.

Alunorte will perform a socioeconomic study on possible impacts of the new bauxite residue storage area. If the study indicates a need for compensatory measures, such measures shall aim to contribute to sustainable and long-term improvements in potentially affected communities. Moreover, Alunorte is committed to involve Ministerio Publico Federal in the potential necessary updates of the environmental license.

Spent potlining (SPL) from electrolytic cells used in primary aluminium production is defined as hazardous waste. We are actively trying to find alternative use of SPL from our operations. We aim to recycle 65 percent of our spent pot lining (SPL) by 2030, and find more sustainable solutions for our waste streams, identifying where they can be utilized as a resource.



Hydro uses the WRI Aqueduct water tool to perform an annual review of water withdrawal from water-stressed areas. The mapping of Hydro's sites in 2019 showed that 2 percent of our overall fresh-water input came from water-stressed areas, with regard to annual renewable water supply (according to the definition used by WRI). Qatalum in Qatar relies on public water supply produced by desalination.

Seawater is used for wet cooling towers at the power plant as well as for wet scrubbers at the potline fume treatment plants.

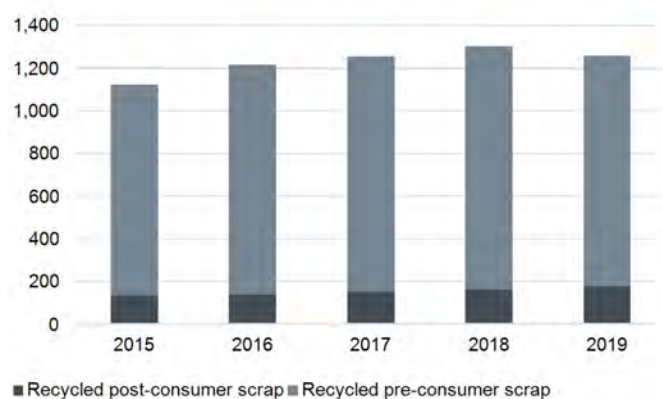
In 2017, Hydro developed a basic water risk analysis tool, covering water use and discharge, to be applied across key operations. Preliminary findings supported the results of the WRI Aqueduct tool - operating in water-stressed areas is not a material risk for Hydro's key operations. Instead, the more material risks are linked to the management of excess water and the quality of the external bodies into which Hydro discharges process water. As a first step towards implementing risk-based water management targets and increased local stakeholder engagement, Hydro is strengthening current water reporting and management practices. We aim to have implemented industry best practice water reporting by 2021.

Following a mass balance of mercury at Alunorte in Brazil, which was concluded in 2017, Hydro decided to install four mercury condensers on the digester lines. The first condenser was installed in 2018, as a pilot, and its technical performance is being monitored prior to the installation of the remaining units. The initial timeline was to install the remaining units in 2020, but this has been rescheduled to allow for further performance optimization of the technology.

Engagement with customers and other stakeholders on the environmental impact of our processes and products is an important element of our product stewardship. We perform life-cycle assessments for all major product groups to identify improvement potential. We also assess other aspects such as energy and material consumption, toxicity and recyclability.

Recycling

Thousand mt



People

Hydro shall be a leading company in our industry in the area of occupational health and safety. Our ambition is to strive for an injury free environment. This will be achieved through the consistent implementation of the management system; committed and visible leadership, and full engagement of all employees.

The number of total recordable injuries and associated rates improved in 2019 over 2018 levels to a total recordable injury rate of 3.0. There were no serious or life-threatening injuries during the year in our consolidated plants, however there were four high-risk injuries that had the potential to be fatal. There was one fatality at Qatalum in 2019, a 50/50 joint venture primary aluminium smelter managed by Qatalum. A sub contracted security guard tragically lost his life when a 1.5 ton guard porta cabin he was in was blown into the sea during a violent storm.

Nearly half of the reported injuries in 2019 were related to hands, about 20 percent legs, about 10 percent related to the face, eyes and head and 10 percent arms and shoulders.



We continue to see high-risk incidents with a potential for fatality or permanent injuries or ill health, but at a lower level than previous years. We consider this the main leading indicator for our safety performance. From 2020, our emphasis will be the closing rate of actions related to high-risk incidents in our operations in 30 days.

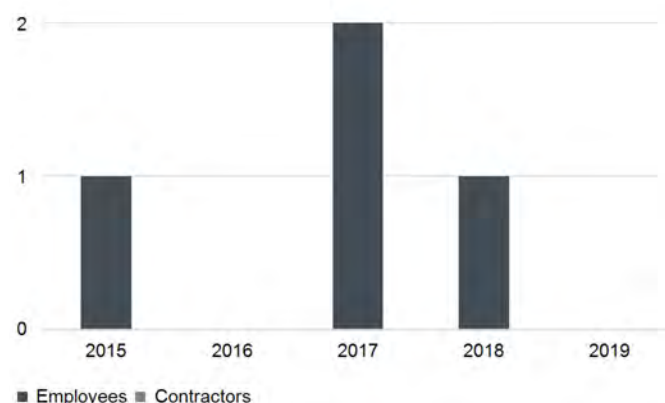
Existing health and wellbeing programs are being expanded including physical and psychosocial risk assessments. The Hydro Monitor will be further developed to provide feedback to our HSE initiatives.

The occupational illness rate in 2019 was 0.2 cases per million hours worked, compared to 0.5 in 2018, excluding Extruded Solutions. Most of the cases related to occupational illness relates to noise. Extruded Solutions records occupational illness as part of the total recordable injuries. There were no occupational illness cases in Extruded Solutions in 2019.

Sick leave in Hydro's global organization was 3.7 percent in 2019, compared to 3.6 percent in 2018. In Norway, sick leave was 4.5 percent in 2019 compared to 4.0 percent in 2018. Women in Norway had a sick leave of 5.7 percent, while men had 4.2 percent.

Fatal accidents

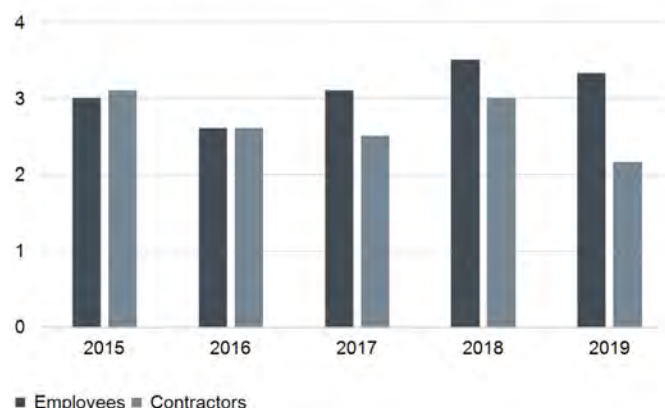
Number



In 2019, there was one fatality in Qatar in the 50/50 JV managed by Qatalum

Total recordable injuries

Per million hours worked



Hydro had 36,310 permanent employees at the end of 2019, an increase from 36,236 in 2018. The number of temporary employees was 1,647 compared to 1,680 the year before. Contractor employees represented about 12,265 full-time equivalents during 2019 compared to 10,500 in 2018. The large majority of employees are concentrated in the USA, Brazil, Germany and Norway. Extruded Solutions has a greater extent of seasonal variations than the other business areas in Hydro. This is solved in different ways in different parts of the organization and may include the use of agency workers. We still do not have the full overview of the extent of such use.

Through Hydro's global people processes we ensure the right competence, capabilities and organizational culture to be able to deliver on our overall strategic agenda – lifting profitability, driving sustainability.

Hydro's new people strategy, launched during 2020, sets global strategic priorities, ambitions, targets and activities, in addition to a defined process for annual update and revision. The global priorities cover learning and competence development, leadership and succession as well as diversity

and inclusion. These priorities are supported by every business area with targets and activities based on their specific needs, addressing challenges in regions where they operate.

A new people platform will be rolled out in 2020 to enable standardized and digitalized global human resources processes throughout the employee's career path.

Hydro's common process for people performance and development includes an appraisal dialogue, individual development plan and follow up, as well as talent planning and succession management.

Hydro has a global engagement survey, normally run every second year. The last survey took place in 2018 and reached the top 10 percent according to the IBM External Norm on the Employee Engagement Index. The 2018 survey did not include the business area Extruded Solutions, which will be included in 2020. A new survey for the entire organization was to be conducted for all employees in 2019, but was postponed to third quarter 2020 due to the cyber-attack. Maintaining employee engagement is a key priority going forward. All units have action plans based on their results.

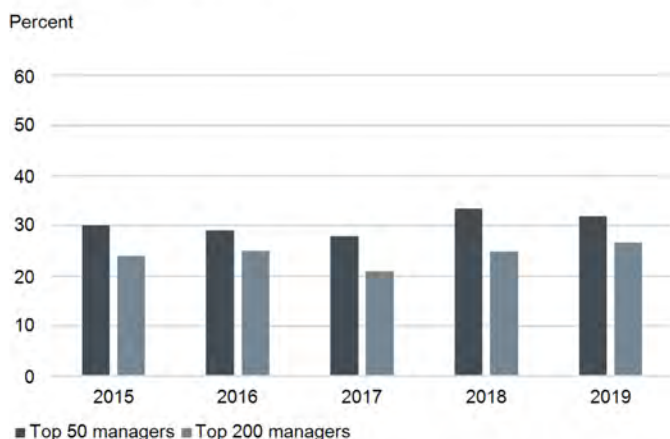
In order to have a healthy pipeline of leaders with the required breadth of experience, we strive to rotate leaders so that they gain knowledge from different parts of the organization. Through the succession and talent processes, we work with the leadership and specialist pipeline and identify required development needed. We have a portfolio of learning programs that supports development for leaders as well as specialists.

Hydro's organization around the world represents significant diversity in education, experience, gender, age and cultural background. We see this diversity as a source of competitive advantage, as it encourages innovation, learning and better customer understanding. We want all employees to know they are valued for their differences and that they contribute to the success of our business strategy. A part of the new people strategy is to identify measures and quantifiable targets to support our ambition.

In 2019, 18 percent of Hydro's employees were women. The share of women was 40 percent in Hydro's Corporate Management Board in 2019. With three women among the seven shareholder-elected members on the Board of Directors, Hydro complies with the Norwegian legal requirements on female representation. Our ambition is to have a high performing and sustainable work environment, based on diversity and inclusion.

We are continually adjusting working conditions so that all employees have the same opportunities in their workplace. In Brazil, we are required to employ at least 5 percent employees with disabilities. Paragominas employed 4.5 percent disabled people by the end of 2019, and Alunorte were at 4.5 percent at the end of 2019, while the level at Albras was 3.5 percent. Just as important as achieving the legal requirements, Alunorte, Paragominas and Norsk Hydro Brasil are working on the career development of employees with disabilities.

Share of women leaders



The total share of women at all levels in Hydro was 18 percent in 2019.

Share of non-Norwegian leaders



Portfolio optimizations, reviews and continuous improvement are essential elements of our business operations. Our aim is to involve employees in such processes at an early stage in order to achieve the best results for individuals and the company.

All employees shall receive a total compensation that is competitive and aligned with local industry standard (but not market leading). The compensation should also be holistic, performance oriented, transparent, fair and objective. Salaries in the organization are reviewed on a regular basis. There is no significant gender-pay differentials for employees earning collective negotiated wages in Norway, Germany and Brazil. Following the integration of Extruded Solutions, the USA and Hungary have become significant countries of

operations for Hydro. In 2018, we looked into the salary differences for all Hydro employees in Hungary and based on overall figures we find no significant gender related salary differences. We have also looked into the salary conditions for all Hydro employees in the USA. Based on our initial analysis, on average there are no significant gender related salary differences.

The annual bonus of Hydro executives shall reflect achievements in relation to pre-defined financial targets and achievements of operational and organizational key performance indicators (KPIs). Targets relating to safety, environment, corporate social responsibility, compliance and leadership expectations constitute a substantial part of the annual bonus plan. Please see note 9.1 and 9.2 to the consolidated financial statements for more information.

Board developments

The Board of Directors has an annual plan for its work. It includes recurring topics such as strategy review, business planning, risk and compliance oversight, financial reporting, people strategy, succession planning as well as HSE, climate change and CSR. The Board of Directors is closely following the market and macro-economic developments relevant for the aluminium industry.

High on the board's agenda in 2019 was the situation for Hydro's operations in Brazil related to the 50 percent production embargo on Alunorte, the cyber attack and the process of recruiting a new CEO. In addition, the board has spent time on the new CEO platform, the strategic review of the business area Rolled Products, health and safety developments, and improvement initiatives.

Extraordinary meetings have been held to address critical matters. The board had a deep dive on Extruded Solutions North America. The board conducted site visits at the Cressona and St. Augustine plants in North America.

The Board of Directors conducts an annual self-assessment of its work, competence and cooperation with management and a separate assessment of the chairperson. Also the Board Audit Committee performs a self-assessment. The reviews were facilitated by the corporate advisory firm Lintstock. The main conclusions of all assessments were submitted to the nomination committee, which in turn assessed the board's composition and competence.

The Board of Directors held 14 meetings in 2019 with an attendance of 92 percent. The Compensation Committee held eight meetings and the Audit Committee ten meetings.

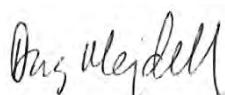
Net income and dividend – Norsk Hydro ASA

Norsk Hydro ASA (the parent company) had a net income of NOK 4,668 million in 2019 compared with net income of NOK 1,015 million in 2018. The result reflects increased dividends from subsidiaries in 2019 compared to 2018.

For 2019, Hydro's Board of Directors proposes a dividend of NOK 1.25 per share reflecting Hydro's robust financial situation, taking into account a demanding year for the company and the volatility in the aluminium industry. The proposed payment demonstrates the company's commitment to provide a predictable dividend to shareholders. Hydro has a dividend policy of 40 percent pay-out ratio of reported net income over the cycle with NOK 1.25 per share considered as a floor. The average five-year payout ratio is 68 percent.

According to section 3-3 of the Norwegian Accounting Act, the board of directors confirms that the financial statements have been prepared on the assumption of a going concern.

Oslo, March 10, 2020



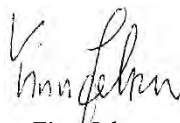
Dag Mejdell
Chair



Irene Rummelhoff
Deputy chair



Arve Baade
Board member



Finn Jebesen
Board member



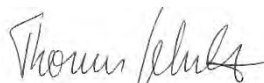
Liselott Kilaas
Board member



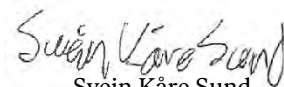
Peter Kukielski
Board member



Sten Roar Martinsen
Board member



Thomas Schulz
Board member



Svein Kåre Sund
Board member



Marianne Wiinholt
Board member



Hilde Merete Aasheim
President and CEO



Business description

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Quick overview

Hydro is a fully integrated, leading worldwide supplier of bauxite, alumina, primary aluminium, aluminium casthouse products and fabricated aluminium products.

We have substantial interests in bauxite and alumina including one of the world's largest bauxite mines and the world's largest alumina refinery, both located in Brazil. We operate or are partners in modern, cost-efficient primary metal production facilities in several countries in Europe, Canada, Australia, Brazil and Qatar, and in flexible remelting plants in a range of countries in Europe and the US.

We are an industry leader for a range of downstream products and markets, in particular the building, packaging, lithographic and automotive sectors. We supply high-quality, value-added aluminium products and solutions, and have strong positions in markets that provide opportunities for good financial returns.

With more than 100 years of experience in hydropower, Hydro is the third-largest power producer in Norway, and the largest publicly owned producer.

History and development

Norsk Hydro ASA was organized under Norwegian law as a public company in 1905 to utilize Norway's large hydroelectric energy resources for the industrial production of nitrogen fertilizers. Our history, spanning many industries and several continents, has been underpinned by three distinctive strengths: the spirit of entrepreneurship, a dedication to innovation and the careful nurturing of our strengths and values.

An emphasis on industrial research and new business alliances enabled us to expand our fertilizer operations following the First World War. In 1928-29, improved fertilizer technology was introduced at Hydro's first industrial sites in Telemark in Southern Norway. Advancements in electricity transmission technology paved the way for the construction of a new fertilizer plant at Herøya, close to Porsgrunn. This provided us with easier access to important raw materials and ideal harbor conditions.

In the three decades following the Second World War, Hydro rebuilt itself into an industrial conglomerate, expanding into a number of new businesses in Norway. In 1951, we began producing magnesium metal and polyvinyl chloride at Porsgrunn. We constructed the Røldal-Suldal hydroelectric power plant to provide energy for our operations at Karmøy, and opened an aluminium reduction and semi-fabricating plant there in 1967.

An era of diversification

In order to secure stable access to raw materials and energy for our fertilizer operations, we investigated opportunities to participate in oil and gas production in the middle of the 1960s. After several years, Hydro and its partners discovered oil and gas in the Ekofisk and Frigg fields on the Norwegian Continental Shelf. Our experience in the chemical process industry and abundant natural gas liquids resources provided the foundation for investments in the petrochemicals industry in Norway. In 1978, we commenced production of ethylene and vinyl chloride monomer.

During this time, we also pioneered new labor relations practices aimed at democratizing the workplace and increasing the cooperation between management and employees, leading to a spirit of collaboration which continues to define the company today.

Decades of global expansion

Hydro expanded globally in the 1980s. We developed our fertilizer operations into one of the leading suppliers in Europe. We also entered a new era as an oil company, becoming operator of the Oseberg offshore oil field. Research continued to drive our development as we introduced new technologies for deep-water oil and gas production and horizontal drilling. In 1986-87, we acquired the Norwegian state-owned aluminium company, Årdal og Sunndal Verk, in

addition to several European aluminium extrusion plants from Alcan and Alcoa, establishing Hydro Aluminium as a major business within Hydro and an important player in the European aluminium industry.

Later, we developed our businesses further through substantial acquisitions, including the German aluminium company VAW in 2002. We also invested significant capital towards the expansion of existing alumina and aluminium production facilities, including our fully owned Sunndal primary metal plant in Norway, the part-owned Alouette smelter in Canada and three expansions of the Alunorte alumina refinery in Brazil. This was followed by the decision to participate in the construction of the Qatalum smelter in Qatar. In 2007, Hydro completed the first phase of the giant Ormen Lange gas field, considered one of the largest industrial projects ever undertaken in Norway. A significant portion of the expansion of these businesses was financed through the sale of non-core operations.

Restructuring and concentration

The first decade of the new millennium encompassed a major restructuring of our downstream aluminium operations, the closure of higher cost smelters, and ultimately, the transformation of Hydro into a focused aluminium company. In 2004, we demerged our fertilizer business through the creation of Yara, and we merged Hydro's petroleum activities with Statoil in 2007.

During this period, Hydro invested roughly NOK 18 billion in its aluminium and energy businesses in Norway, including NOK 11 billion in its Norwegian smelter system, NOK 2.2 billion upgrading and expanding its hydropower production operations and NOK 3 billion in research, development and production support relating to both its upstream and downstream aluminium operations. As a result, annual electrolysis production in Norway increased from 760,000 mt to about 900,000 mt, including the shutdown of roughly 250,000 mt of older, higher cost and higher emission capacity.

Transforming transactions

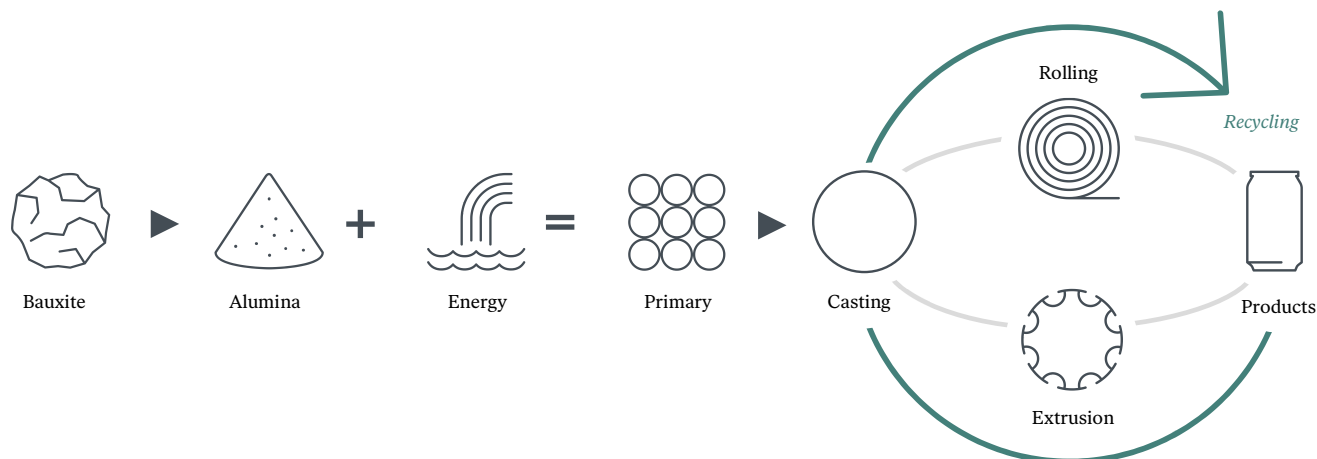
In 2011, Hydro transformed its business through the acquisition of the aluminium assets of Vale SA, securing its position in bauxite and alumina and lifting the company to the top tier in the aluminium industry. Combining Vale Aluminium with Hydro has resulted in a stronger company, fully integrated into bauxite and alumina.

In 2013, Hydro merged its aluminium extrusion, building systems and precision tubing businesses with Orkla ASA's fully owned extrusion company, Sapa, forming a 50/50 percent joint venture. In 2017, Hydro acquired Orkla's 50 percent interest in Sapa, securing full ownership of the global leader in extruded aluminium solutions. The new business area Extruded Solutions has significant operations in Europe, North America, South America and Asia.

For further information, see www.hydro.com/en/about-hydro/our-history

Business areas

Hydro's activities



Hydro is a fully integrated aluminium company with attractive equity positions in bauxite, alumina and power, the most important raw materials in the production of primary metal. We are one of the world's largest producers and suppliers of alumina and primary aluminium. Alumina production well in excess of our own requirements gives us a favorable market position. Substantial self-generated hydroelectric capacity in Norway a dedicated gas-fired plant in Qatalum, in addition to long term power contracts, provides secure access to energy.

Downstream, Hydro is an industry leader for a range of rolled and extruded aluminium products and solutions, in particular the building, packaging, lithographic, precision tubing and automotive sectors. Our ambition is to be recognized as the world's foremost aluminium solutions supplier, working in partnership with our customers and driving our business forward.

Hydro's business is divided into six business areas; Bauxite & Alumina, Primary Metal, Metal Markets, Rolled Products, Extruded Solutions and Energy. Bauxite & Alumina includes our bauxite mining activities comprised of the Paragominas mine and a 5 percent interest in Mineracao Rio de Norte (MRN)³, both located in Brazil, as well as our 92 percent interest in the Brazilian alumina refinery, Alunorte. These activities also include Hydro's longterm sourcing arrangements and alumina commercial operations.

Primary Metal consists of our primary aluminium production, remelting and casting activities at our wholly

owned smelters located in Norway, and Hydro's share of the primary production in partly-owned companies located in Slovakia, Qatar, Australia, Canada and Brazil.

Metal Markets includes all sales and distribution activities relating to products from our primary metal plants and operational responsibility for our stand-alone remelters. Metal Markets also includes metal sourcing and trading activities, which sources standard ingot for remelting in Hydro's remelters and primary casthouses from third parties and provides operational risk management through LME hedging activities.

Rolled Products consists of five European rolling mills including our 50 percent interest in the AluNorf rolling mill in Germany. Rolled Products also includes the Neuss primary aluminium smelter in Germany.

Extruded Solutions consists of our extrusion-based business, located mainly in Europe and the Americas, which is focused on delivering solutions to the building and construction, transportation, and engineered products industries. Extruded Solutions also includes our aluminium building systems and precision tubing activities.

Energy is responsible for managing Hydro's captive hydropower production, external power sourcing arrangements to the aluminium business and identifying and developing competitive energy solutions for Hydro worldwide.

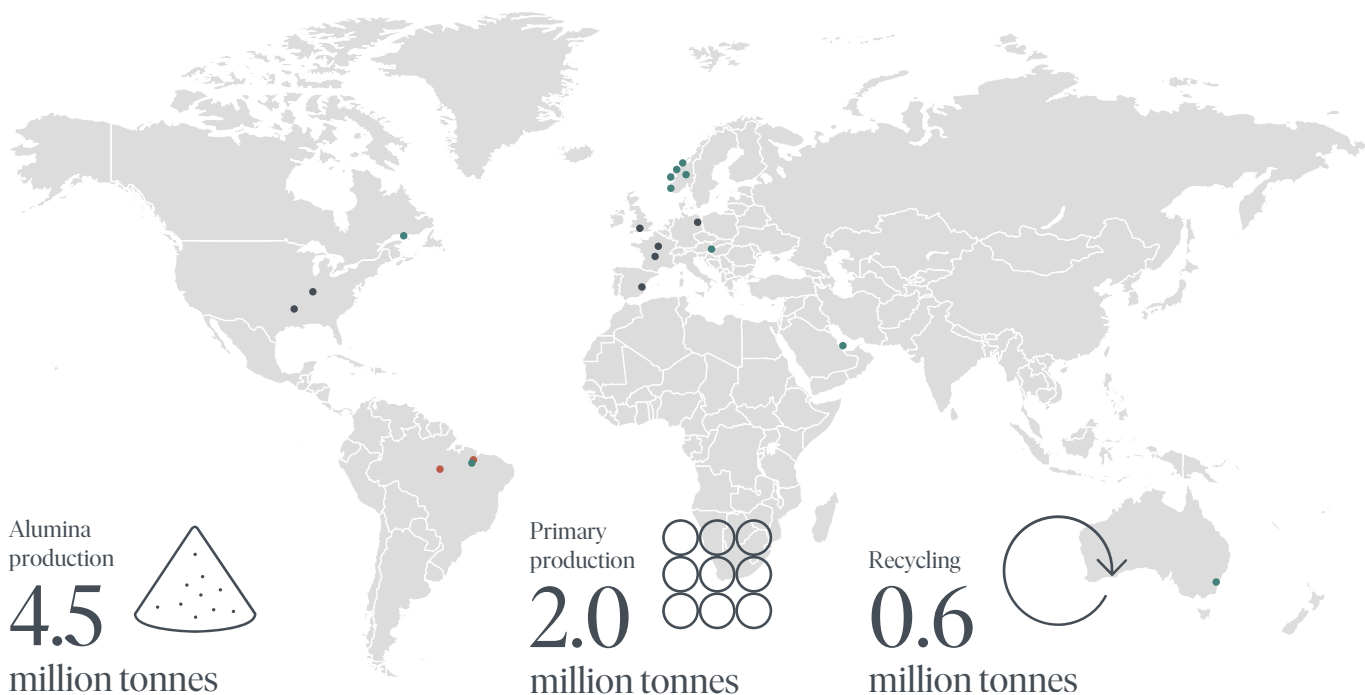
³ Earnings from our investment in MRN are included in "Financial income."

Business and operating information

The following section includes a description of the industry developments impacting our business and a description of operations for each of our business areas including key revenue and cost drivers.

Aluminium upstream production facilities

● Bauxite and Alumina ● Remelters ● Smelters



Bauxite & Alumina

Industry overview

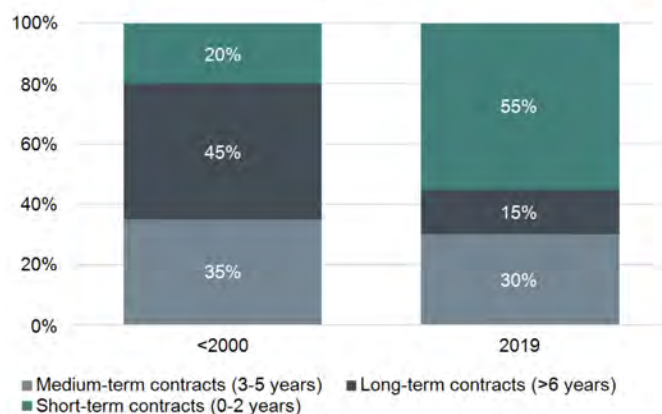
Bauxite rock is composed mainly of aluminium hydroxide-bearing ore minerals, with accompanying minerals commonly containing iron oxides and hydroxides, and silica as clay and/or quartz. The three main ore minerals are gibbsite, boehmite and diasporite. Their relative abundance in a particular bauxite source will determine alumina processing characteristics, and consequently impact the design, capital and operating costs of a related alumina refinery. In general, gibbsitic bauxite is preferred, as it can be digested at lower temperatures and pressure than boehmitic or diasporic bauxites. Most bauxites occur within a lateritic crust formed by intense tropical weathering, as near-surface blanket deposits. Bauxite is typically extracted from open-cut mines, and either processed at nearby refineries or transported to distant refineries, which can add substantial logistical costs to the production of alumina. About 80 percent of alumina refining outside of China is based on integrated bauxite mines. In China, approximately 65 percent of alumina refining is based on integrated sources.

Australia, China, Guinea and Brazil accounted for over 80 percent of global bauxite production of 330 million mt in 2019. The five largest mines outside China represented

around 46 percent of the Western world’s bauxite production of 254 million mt.

Alumina is a significant cost element in the production of aluminium. The alumina market is competitive, but relatively few players hold a long position. China is the largest producing country, representing approximately 56 and 54 percent of the global demand and capacity, respectively.

Alumina contract durations



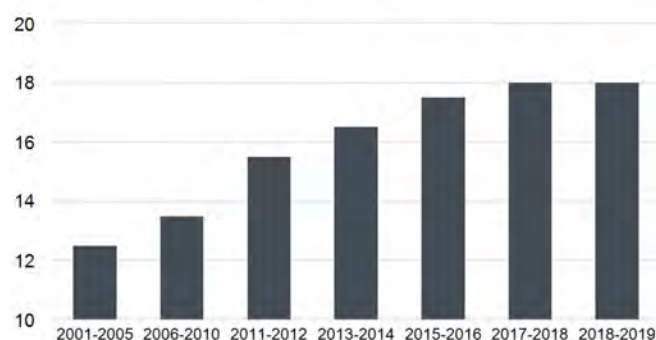
Source: Hydro estimates

Alumina pricing

Pricing in the alumina industry has been moving away from fixed percentages of the aluminium price to index pricing. Three commodity price reporting agencies (Platts, Fastmarkets MB and CRU) publish alumina price indices. These reflect the fundamental supply and demand balance of the alumina market. Index pricing continues to gain support in the industry and represents the main reference for contracts of various durations. Average annual contract prices have risen from around 12 percent of LME aluminium reference prices in 1990 to about 18 percent in 2019.

Alumina price

Percent of LME per mt alumina for medium term contracts



Operations

Bauxite from Paragominas is mined in open pits and sorted and crushed into sizes suitable for transportation as slurry through a pipeline approximately 240 kilometers to Alunorte for refining into alumina. Bauxite from MRN is transported by vessel. Alumina processing begins by removing the water from the bauxite slurry, then mixing the bauxite with caustic soda at high temperatures and pressure. The resulting mixture is pumped into a digester, where a chemical reaction dissolves the alumina. This process produces a sodium aluminate solution, which is transferred into tanks to separate impurities through settling and filtration. The cooled sodium aluminate solution is then pumped into precipitators to grow alumina crystals, which are transferred to thickening tanks and further to fluid bed calciners to remove water, producing pure alumina.

Cost and revenue drivers

The main cost drivers for bauxite are labor, maintenance/consumables, electricity and fuel for mining equipment. These account for around 75 percent of the cash cost of mining activities. Labor, the largest cost factor, accounting for about 30 percent, is influenced by Brazilian wage levels and productivity developments. Maintenance/consumables are influenced by inflation and operational efficiency.

The main cost drivers for alumina refining are bauxite, energy and caustic soda. These represent around 85 percent of cash costs. Energy costs are a mix of fuel, coal and electricity and represent around 30 percent of the total costs. Caustic soda represents around 15 percent of cash costs. Bauxite purchases from Paragominas, and those made under offtake agreements from MRN, are based on prices partly linked to LME prices and alumina market prices.

Commercial operations

When operating at full production capacity, Hydro has a long position in bauxite of 3-4 million mt and in alumina of approximately 2-3 million mt. Because of the Alunorte curtailment in 2018-19, Hydro had to source significant additional volumes of alumina externally. We price bauxite on its own fundamentals to reflect high-quality Brazilian bauxite. As mentioned above, in addition to Paragominas and our equity interests in the MRN bauxite mine, we have volume offtake agreements for Vale's 40 percent interest in MRN, which amounted to 5.2 million mt in 2019. The excess bauxite not consumed by Alunorte is sold to third parties.

In addition to Alunorte, we procure alumina from a number of external sources. Hydro's contract with Rio Tinto Alcan (RTA) represents the main external source, and covers the supply of 900,000 mt of alumina annually until 2030. We also buy and sell alumina to optimize our physical alumina portfolio on a short and medium-term basis.

See section later in this report Financial review, Bauxite & Alumina for external volumes of bauxite and alumina purchased and volumes of alumina sold.

Technology and innovation

Hydro's Bauxite & Alumina business area is continuously investing in a portfolio of innovative technology developments and R&D projects and initiatives, with the aim of improving our competitive position in the industry.

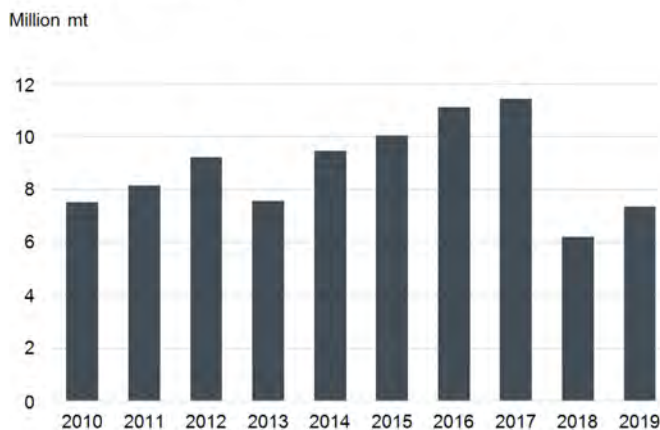
We use enhanced dry-stacking disposal technology, which includes an improved residue filtration step and a mechanical compaction. Alunorte is now using press filtration technology before transporting the residue to the disposal area. This press filter technology produces a filtered cake with lower moisture content, which allows for the cake's further mechanical compaction and storage on steeper slopes, thus reducing disposal area requirements and its environmental footprint.



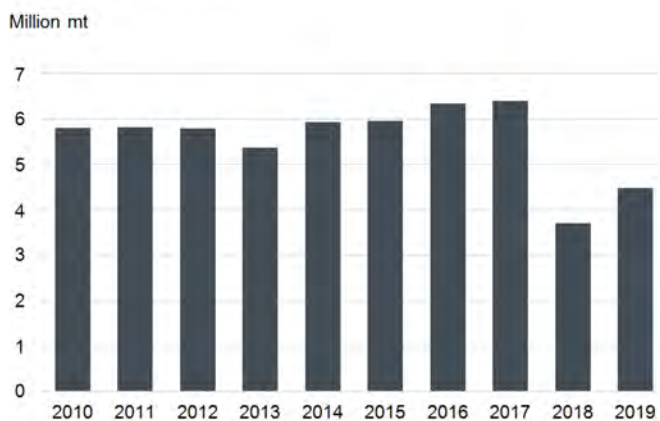
The economic utilization of Alunorte's bauxite residue is an important R&D program, in partnership with the national Brazilian entity SENAI (National Service of Industrial Apprenticeship) mineral research area. Hydro also works with the International Aluminium Institute's Bauxite & Alumina committee to monitor industry developments that could be applicable to Alunorte. Alunorte is committed to developing a product based on bauxite residue within the next three years.

Two other R&D programs are directed at minimizing the economic impact of the relatively high kaolinite content of Amazonian bauxite, which requires a high consumption of caustic soda at Alunorte. These programs are designed to improve the solid-to-solid separation processes at the Paragominas beneficiation plant and to modify the bauxite digestion process at Alunorte. The expected result will be a significant reduction in Alunorte's future operating cost, and an increase in the amount of Hydro's economically viable bauxite resources. Hydro is developing these programs together with external organizations.

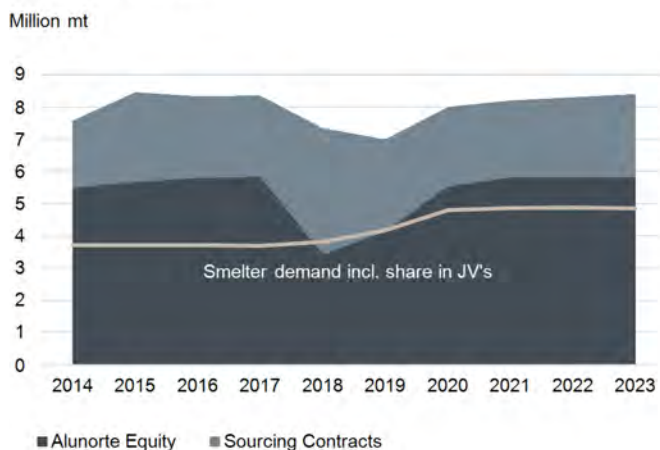
Bauxite Production



Alumina Production



Alumina Position



Environment

The main environmental issues in Bauxite & Alumina are related to water management and effluents, deforestation, waste disposal, air emissions and greenhouse gases.

The disposal of bauxite residue at Alunorte is challenging due to large volumes and the alkaline nature of the liquid component of the residue. The residue is washed with water to lower the alkalinity and to recover caustic soda for reuse. For more information, please see Technology and Innovation.



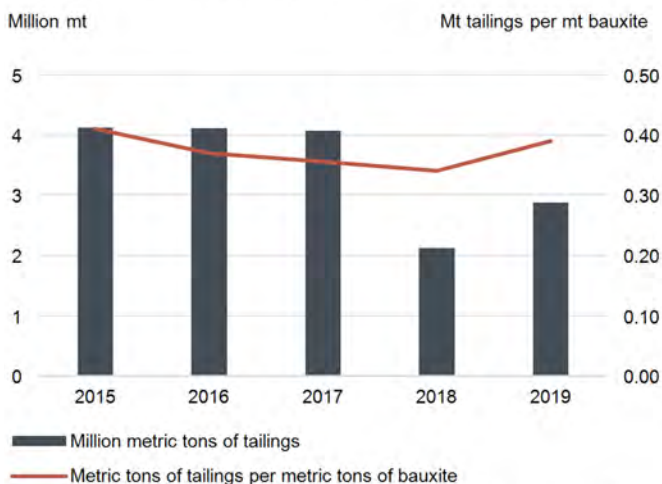
Air emissions from Hydro's Alunorte refinery relate mainly to steam generation, which relies on coal and heavy fuel oil. During normal operations, the plant emits about 4 million mt of CO2 equivalents per year.

Hydro's bauxite mining at Paragominas involves removing vegetation and a layer of topsoil and overburden to extract bauxite deposits from 8-to-12 meters underground. As a result, mining operations disturb relatively large areas. Hydro's mine is in an area that is normally recognized as the deforestation belt around the central Amazon region. In the municipality of Paragominas, there has been a reduction in forest area of more than 30 percent over a period of almost 20 years. Much of this occurred before the establishment of the Paragominas mine, and the area had been exposed to selective logging and clear cutting before commencement of operations in 2007. Reforestation and wildlife management at Paragominas are core elements of our sustainability strategy.

Although originally set for 2017, the 1:1 land rehabilitation target continues to apply, as it provides a solid driver for rehabilitation. It has, however, become a rolling target, aiming for a 1:1 rehabilitation of areas available for rehabilitation over two hydrological seasons after release. This revised definition takes into account the nature of the mining and rehabilitation cycles, and the time lag necessary to ensure quality rehabilitation to restore biodiversity. It also takes into account that land periodically needs to be set aside for temporary infrastructure to safely operate the mine. The 2020 target of closing the historical rehabilitation gap inherited from the former operator was achieved in 2018.

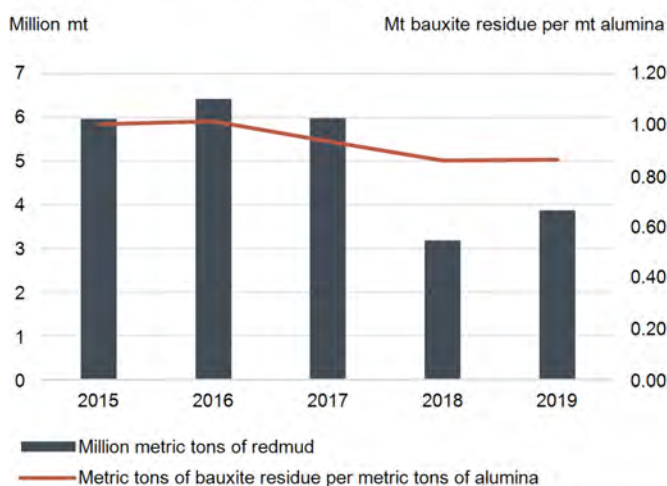
To increase our knowledge and to secure a science-based approach, the Biodiversity Research Consortium Brazil-Norway (BRC) was established in 2013. Please see Resource management under Viability Performance in this report for more information.

Tailings from bauxite production



Tailings production decreased significantly in 2018 due to the Paragominas curtailment. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Bauxite residue from alumina production



Bauxite residue production decreased significantly in 2018 due to the Alunorte embargo. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Solid waste production includes significant amounts of residues from the bauxite beneficiation process (bauxite tailings) and from alumina refining (bauxite residue, also known as red mud). Tailings are stored in dams where the particles settle, and the water drained. Separated water is clarified and reused in the process. Dams are systematically inspected by Brazil’s national mining agency, and IBAMA, Hydro and third parties, including the Norwegian Geotechnical Institute (NGI). The terms of commitment include new programs, such as the speed-up of Alunorte’s solid waste deposit rehabilitation project and new risk assessment studies and action plans.

The new tailings system in Paragominas was completed in 2017. The new tailings dams are situated on a plateau where mining has been finalized. The old tailings system is located in a shallow valley. The closure plan for the tailing dams was last reviewed in 2015, and Hydro expects to start the

rehabilitation process after the tailings dams have settled. This takes a minimum of five years.

Land use and rehabilitation - Paragominas



People

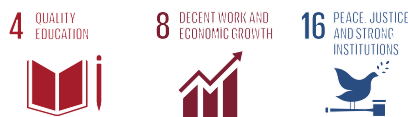
Bauxite & Alumina had around 3,500 employees in its consolidated activities at the end of 2019. We consider a safe working environment to be a fundamental right of all employees. We believe that this, together with an engaged workforce, improves efficiency and results in lower operating costs. Employee development is also an important factor. Our internal performance and development process and employee engagement index are important tools to engage our people and enhance organizational performance and development. See the Viability performance section later in this report for more information.

Our Bauxite & Alumina Business System (BABS) has been used as the basis for implementing a standardized production system in our operations. The system is based on Primary Metal’s Aluminium Metal Business System (AMBS) and promotes employee empowerment and development, and facilitates the sharing of best practices throughout the organization.

Diversity in all its forms is appreciated and valued throughout our organization. We regularly assess the status of our diversity efforts and target areas for improvement to reach our 2020 diversity targets. Much progress has been made in areas related to competence and cultural background. We strive to improve our representation of females at all levels in the organization through our recruiting strategies and efforts to create a workplace with opportunities that appeal to both genders.

Society

Bauxite & Alumina’s operations are located in the state of Pará, in northern Brazil, one of the least developed regions in the country. As one of the largest industrial companies in the state, Hydro is striving to make a positive difference by strengthening our business partners and the local communities where we operate. Read more about Hydro’s social sustainability strategy in the section Viability Performance, later in this report.



We are working to make our social projects more robust and effective, from short-term actions to long-term sustainable initiatives. A multitude of social programs are ongoing or under planning for Barcarena, Paragominas and the areas along the bauxite pipeline from Paragominas to Alunorte. In addition, representatives from the communities are welcome to visit the plants and to better understand the environmental and social processes.

The Barcarena region, where the Alunorte alumina refinery and Hydro's Albras smelter is located, ranks low on the Human Development Index (measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and with a decent standard of living), and has one of the highest levels of violence in the world. There is a lack of access to basic services, with the share of people with access to sanitation at less than 30 percent.

To support broad collaboration for social change in Barcarena, Alunorte has therefore committed BRL 100 million in local community investments through the new Sustainable Barcarena Initiative, which will be supporting local communities over the next 10 years. The initiative will establish an independent organization, bringing together local communities, and will provide a public platform for data monitoring and evaluation, and develop social and environmental projects. This initiative is closely linked to our social sustainability strategy, launched in 2017, and our emphasis on strengthening and enabling local stakeholders to drive change and development.

We have developed a more consistent and coherent strategy for community engagement, based on continuous and enhanced dialogue. A new volunteering program for employees has increased internal engagement and addressed community needs.

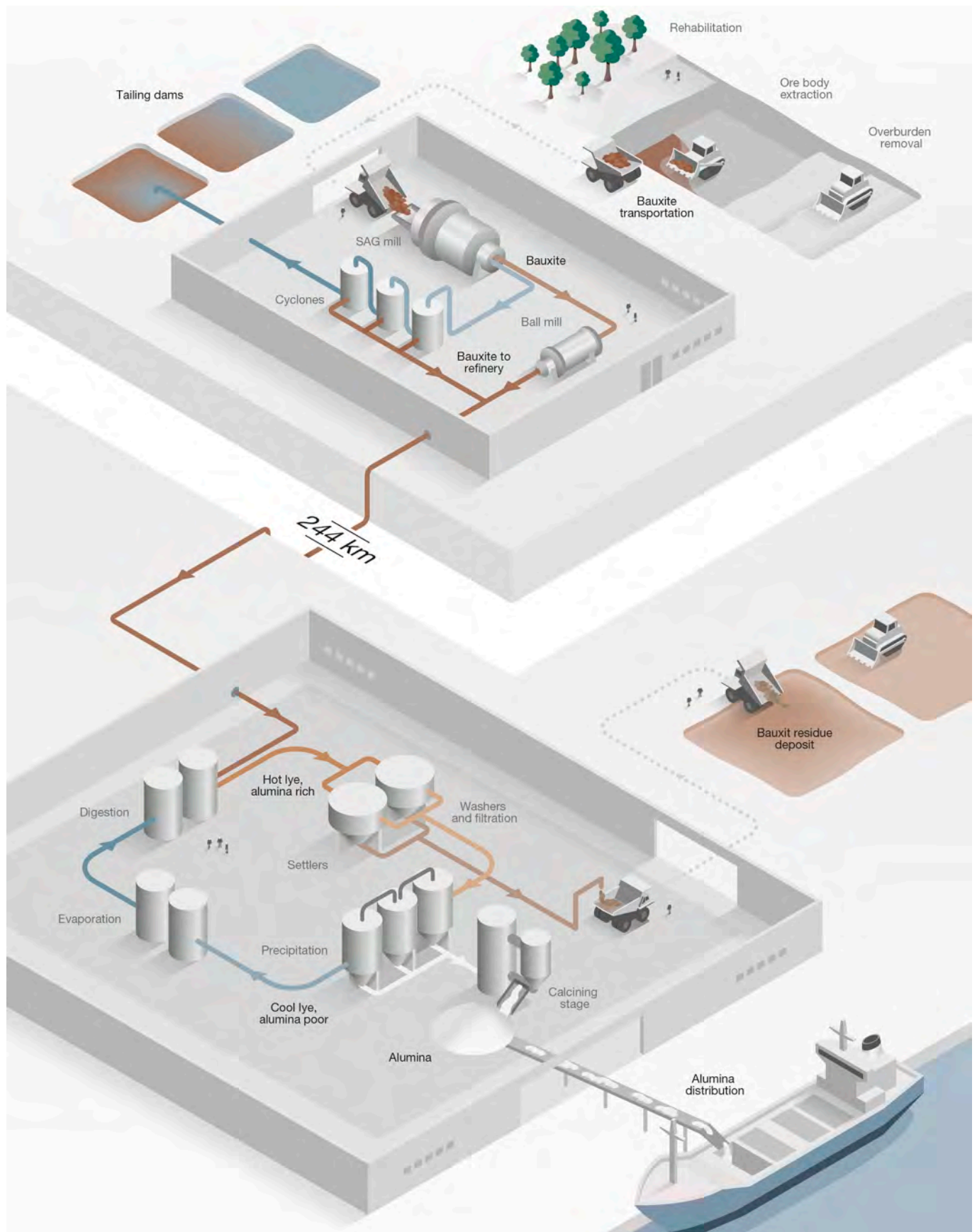
The bauxite pipeline crosses areas inhabited by traditional Quilombola groups in the Jambuacu Territory in Brazil. Hydro has an ongoing dialogue process with representatives of the group and is investing additional resources to improve its interaction with the group, including facilitation around conflict resolution. Still, there are potential conflicts related to certain Quilombola groups.

Hydro's commitment to safe and environmentally sound operations is universal and absolute. Following the rainfall and subsequent flooding of Barcarena in February 2018, Alunorte collaborated with local institutions to provide an emergency response to the neighboring communities of Burajuba, Bom Futuro and Vila Nova in Barcarena. About 2,000 families in these communities close to Alunorte have received medical assistance and clean water provided via third parties or directly from Hydro.

The current grievance mechanism for Hydro's activities in Brazil was introduced in 2014. We are optimizing the mechanism to use it more actively in stakeholder engagement.

Within Bauxite & Alumina's supply chain, the most important risks include human rights, corruption, fraud and inappropriate working conditions. Our sustainability metric is comprised of several elements, including promoting local content, mitigating social risk in the supply chain and screening all suppliers as part of a qualification process.

Bauxite extraction and alumina refining in Hydro



Primary Metal

Industry overview

The basic raw material for aluminium is bauxite, which is refined into alumina. Aluminium smelting is a capital-intensive, technology-driven industry. Energy represents approximately 50 percent of the costs. As the world's largest consumer and producer of aluminium, China has a significant impact on market fundamentals. Global primary production amounted to roughly 64 million mt in 2019. In 2019, China accounted for 56 percent of worldwide primary aluminium consumption and 56 percent of corresponding production. India and the Middle East are also growing in importance in the production of aluminium.

High-quality aluminium products are also derived from the remelting and recycling of aluminium scrap. Aluminium scrap is generated both in the production (pre-consumer) and in the use (post-consumer) of aluminium products. Around 70-75 percent of all aluminium produced since the Hall-Heroult process was invented in 1886 is still in use⁴. Aluminium is used in a variety of applications in many industries. The major consumer segments are transportation, building and construction, packaging and foil and electrical applications. The major consuming areas are China, North America, Western Europe, Japan and the rest of Asia.

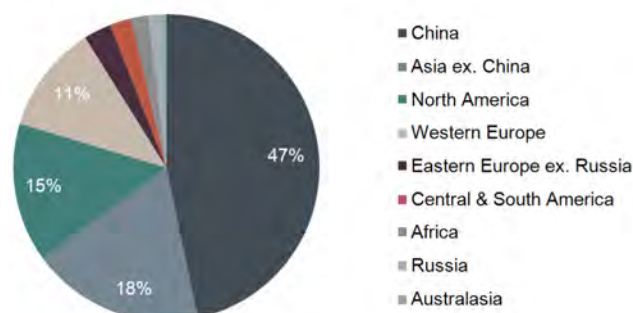
Demand for aluminium products in mature markets like North America and Europe is normally in line with economic developments, although with greater volatility. However, substitution for steel and other metals by aluminium, in particular for automotive applications, contributes to higher growth levels and is a key driver underlying increasing demand in aluminium markets. In recent years, global demand has exceeded the growth in GDP, but demand dropped in 2019 due to the general downturn in global manufacturing from trade tensions and increasing macroeconomic uncertainty.

Structural developments

The 10 largest aluminium companies in the world represent close to 50 percent of global aluminium production, and the 10 largest Chinese aluminium companies accounted for around more than one-third of the world's primary production in 2019. Chinese producers focus primarily on supplying the Chinese markets. Private companies such as Hongqiao group, Xinfu and East Hope have grown significantly in the last several years. In recent years, state-owned companies in China such as Chalco have also increased in size, due to restructuring efforts and through incentives for the Chinese state-owned companies. Outside China, the strongest production growth has been among companies active in India, in particular Vedanta, and to a lesser degree in the Middle East.

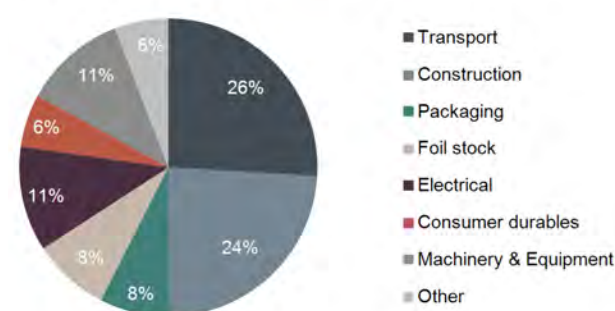
Global aluminium consumption by region 2019

Total market 89.8 million mt



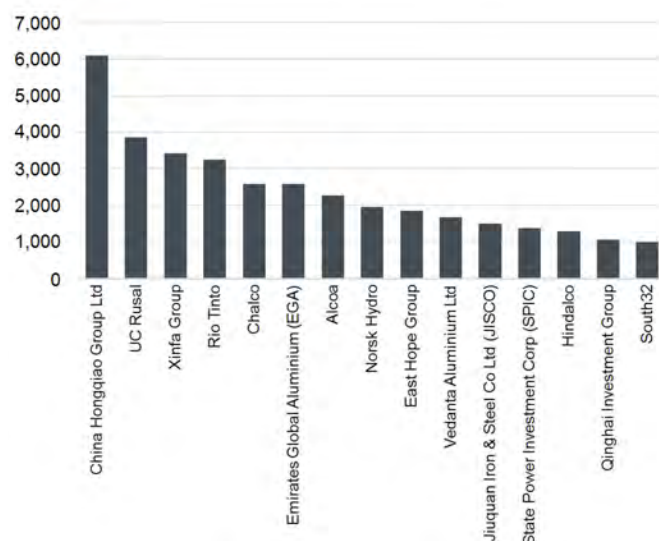
Global aluminium consumption* by end use 2019

Total market 89.8 million mt



Top world primary aluminium producers in 2019

Million mt



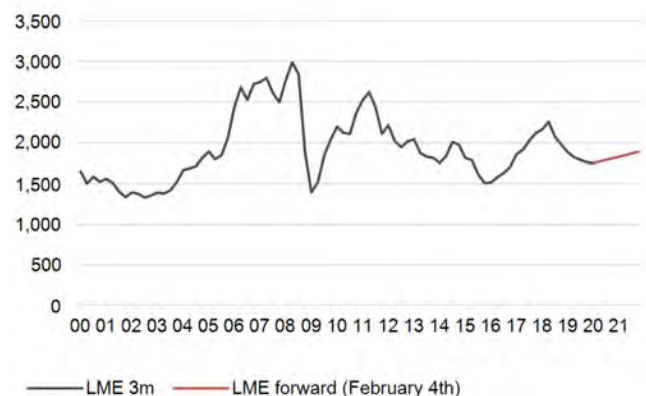
⁴ The actual share depends on lifetime assumption for aluminium products in different applications and in different regions of the world.

Aluminium price

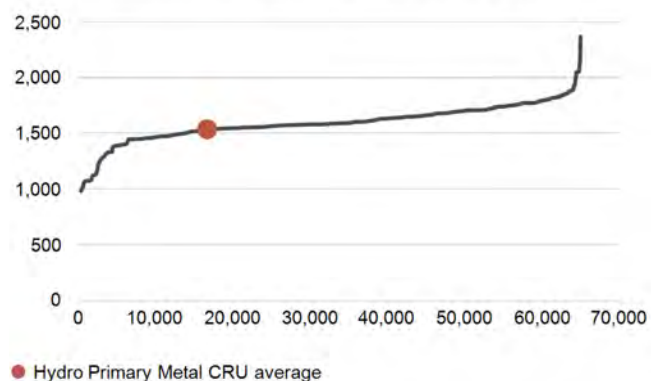
Primary aluminium is traded on several metal exchanges, but primarily the London Metal Exchange (LME). The Shanghai Futures Exchange (SHFE) has grown in importance for international trade of standard ingots produced in China. LME aluminium prices are heavily influenced by macroeconomic and market developments.

Aluminum price

USD per mt



CRU global business operating cost curve by smelter



Source: Republished under license from CRUInternational Ltd

Premiums outside China affect the incentive for Chinese exports, and China's exports of semi-fabricated products have increased in recent years. Arbitrage opportunities are expected to continue to occur in the future and will influence the size of exports of semis from China, and consequently also metal prices going forward. There has been an increase in trade and anti-dumping cases following increases in Chinese exports of semi-fabricated products. Significant uncertainty remains with regard to the implementation of further trade restrictions in 2020.

China is still working actively to develop new domestic applications for aluminium, to make use of its properties and to reduce overcapacity, such as applications within transport/railways.

Operations

Hydro's primary aluminium plants have reduction facilities with potlines and casthouses, where liquid and remelted aluminium is cast to form value-added products such as

extrusion ingot, primary foundry alloys, sheet ingot and wire rod, in addition to standard ingot.

Cost and revenue drivers

The main cost drivers for the production of primary aluminium include alumina, power and carbon, which together comprised about 75-80 percent of the cash costs of electrolysis metal in 2019. Approximately two metric tonnes of alumina are required to produce one mt of aluminium, representing 35-40 percent of the cash cost of primary aluminium. Energy represents on average 20-25 percent and carbon anodes consumed in the smelting process account for 15-20 percent of cash costs.

Realized aluminium prices are the most important revenue driver. As part of our operational hedging procedure, prices are fixed, on average, one month prior to production. As a result, and due to the hedging of product inventories, Hydro's realized aluminium prices lag LME spot prices by 1-2 months.

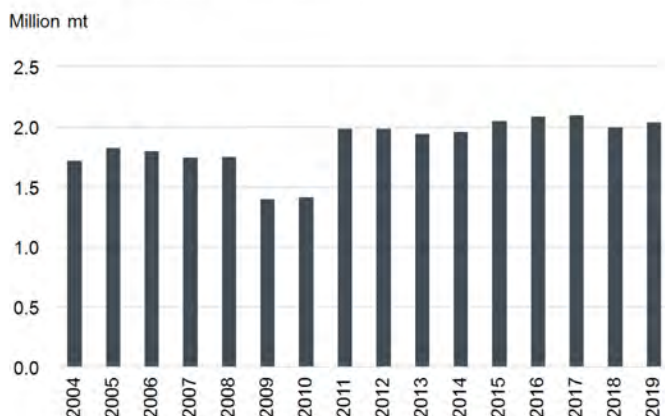
Competitive strengths

- Worldwide production network of cost-efficient primary aluminium facilities, including the Norwegian plant in Sunndal, which is the largest and most modern primary metal plant in Europe, and Qatalum, our 50 percent-owned world-class smelter in Qatar, which has a competitive position in the first quartile of the industry's cost curve
- Competitive position on the industry cash-cost curve
- Culture of continuous improvement and solid track record of continually upgrading efficiency of smelter portfolio
- Most primary aluminium output is sold in the form of value-added casthouse products
- Captive alumina position with more than 100 percent coverage, dependent upon full capacity at the Alunorte alumina refinery
- Robust power position, largely based on hydropower. Substantial coverage of current production until 2030 and beyond
- Technological leadership and world-class smelter technology

Aluminium smelter system

Hydro is one of the world's largest producers of primary aluminium, with installed capacity in 11 wholly or partly owned plants. In 2019, we produced around 2 million mt of primary aluminium, which is around 250 kmt below full capacity, affected by the partial curtailments at the Husnes plant in Norway and the Albras plant in Brazil. An investment decision to upgrade and restart the curtailed capacity at Husnes was made in 2017, and first metal is expected in the first half of 2020. From April 2018 and until October 2019, around 50 percent of the Albras plant's yearly production was curtailed due to the Alunorte situation. On December 18, 2019, a decision was made to curtail a maximum of 20 percent of the primary aluminium capacity of Slovalco, in Slovakia. The curtailment is in response to the weakening market environment, combined with Slovalco's relatively high cost position and uncertainty relating to the renewal of its power contract expiring at the end of 2021.

Primary aluminium production



Internal supply contracts between our hydropower production operations and our aluminium metal business covered about half of the energy consumption of our wholly owned Norwegian smelters in 2019. The remainder was mainly covered by an external supply contract with Statkraft, a Norwegian electricity company. The contract will expire in 2020.

To replace the Statkraft contract, Hydro has entered into various new supply contracts, adding up to a total annual supply of 8.4 TWh for the period 2021-2030, of 5.6 TWh for the period 2021-2035, and of 5.1 TWh for the period 2036-2039. This secures a significant part of the power consumption, in addition to our own hydropower production, that is required by our Norwegian smelters for these periods. The new contracts comprise a mixture of hydropower and wind power.

Electricity for Qatalum is provided by an integrated natural gas-fired plant supplied with gas by Hydro's joint venture partner, Qatar Petroleum. The rest of the global joint ventures are covered under medium to long-term contracts, expiring between end-2021 and end-2030.

Technology and innovation

Technology development and innovation are important pillars for Primary Metal to develop future benchmark technology platforms for aluminium production and to lift performance in its existing metal plants.



The Karmøy technology pilot is operating at full capacity, producing the world's most climate-friendly and energy-efficient primary aluminium. Furthermore, the Karmøy technology pilot is verifying a broad range of technical innovations that is providing spin-off effects for Hydro's other primary metal plants, helping to lift profitability and drive sustainability for Hydro's production of primary aluminium.

Environment

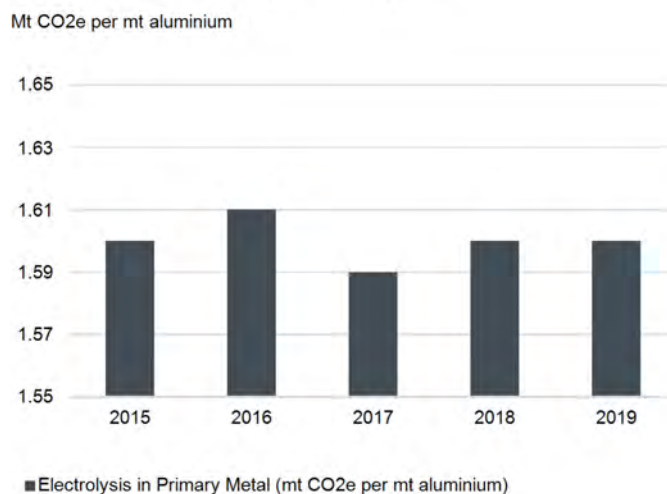
Aluminium smelting is an energy-intensive process. However, approximately 70 percent of the electricity used in Hydro's aluminium plants is provided by renewables. A substantial portion of the remainder (around 20 percent) is provided by natural gas. On a global basis, hydroelectric power accounts for about 36 percent of the electricity used for aluminium production, with natural gas accounting for 8 percent. The Intergovernmental Panel on Climate Change (IPCC) recognizes natural gas as an important transition fuel that can help reduce global temperature increases.



Primary Metal is Hydro's largest consumer of energy and has the largest combined direct and indirect greenhouse gas emissions. The main source of direct CO₂ emissions from Hydro's smelters is the consumption of carbon anodes.

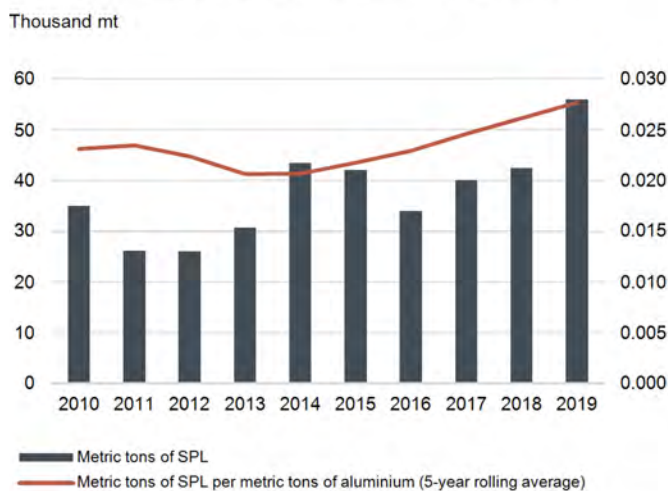
See the Viability Performance section later in this report for more information regarding our climate strategy and how aluminium products can contribute to reduced energy consumption and greenhouse gas emissions.

GHG emission intensity - electrolysis



Greenhouse gas (GHG) emissions from the electrolysis process from Hydro's smelters, excluding Neuss in Germany. Albras is excluded from the 2019 average due to extraordinary emissions during start-up of curtailed capacity. The emission intensity at Albras was 1.89 in 2019.

Spent potlining (SPL) from aluminium production



The volumes of spent potlining (SPL) varies with the relining of smelter cells which is normally done every 4-7 years for established smelters. Furthermore, opening new production lines and closing down production lines will give fluctuations in the aluminium production, and - due to the cyclical nature of SPL - a 4.7 years time lag in the SPL volumes. Hence SPL is normalized with aluminium production with a 5-year rolling average as the best estimate of a trend line.

The production of primary aluminium generates secondary raw materials, by-products and waste. Hydro is continuously working to increase sustainability through reducing material loss and increasing internal reuse and recycling. By cooperating with research and industry partners, Hydro is maintaining and developing sustainable material handling throughout the value chain. Hydro's excess materials have proven valuable for industrial partners manufacturing cement, mineral wool, metals and construction materials.

The Norwegian Environmental Agency has in recent years renewed the environmental permits for Hydro's aluminium plants in Karmøy, Høyanger, Sunndal and Husnes.

People

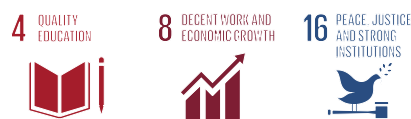
We have a responsibility to provide a safe work environment and believe that this also promotes efficiency and lower operating costs. We drive safety improvements by systematically reducing risks, training personnel and regularly following up by line management and safety delegates. All injuries and high-risk incidents are investigated to find root causes and to share lessons learned between plants. Through deployment of our Work Environment Risk

Assessment (WERA) process, we have reduced employee exposure to hazards within our operations by 5-10 percent annually in the last 10 years. This includes the reduction of exposure to noise, dust, heat, fumes, chemicals and vibration. With hearing impairment on the rise, we have focused on reducing noise. Primary Metal has a certified environmental management system (ISO 14001) to ensure compliance with environmental permits. We investigate environmental incidents and emissions above limits, to avoid reoccurrence.

Diversity in the organization is important to us, in particular related to age and gender. We have run a comprehensive diversity awareness training program at the management level at all plants, and we will introduce this program at more levels in each unit. In 2019, about 40 percent of our technology graduates (MSc) were women. We also emphasize the need to recruit more female operators and promote the workplace as fit for both genders, motivating young women to seek vocational training in the process industry.

Society

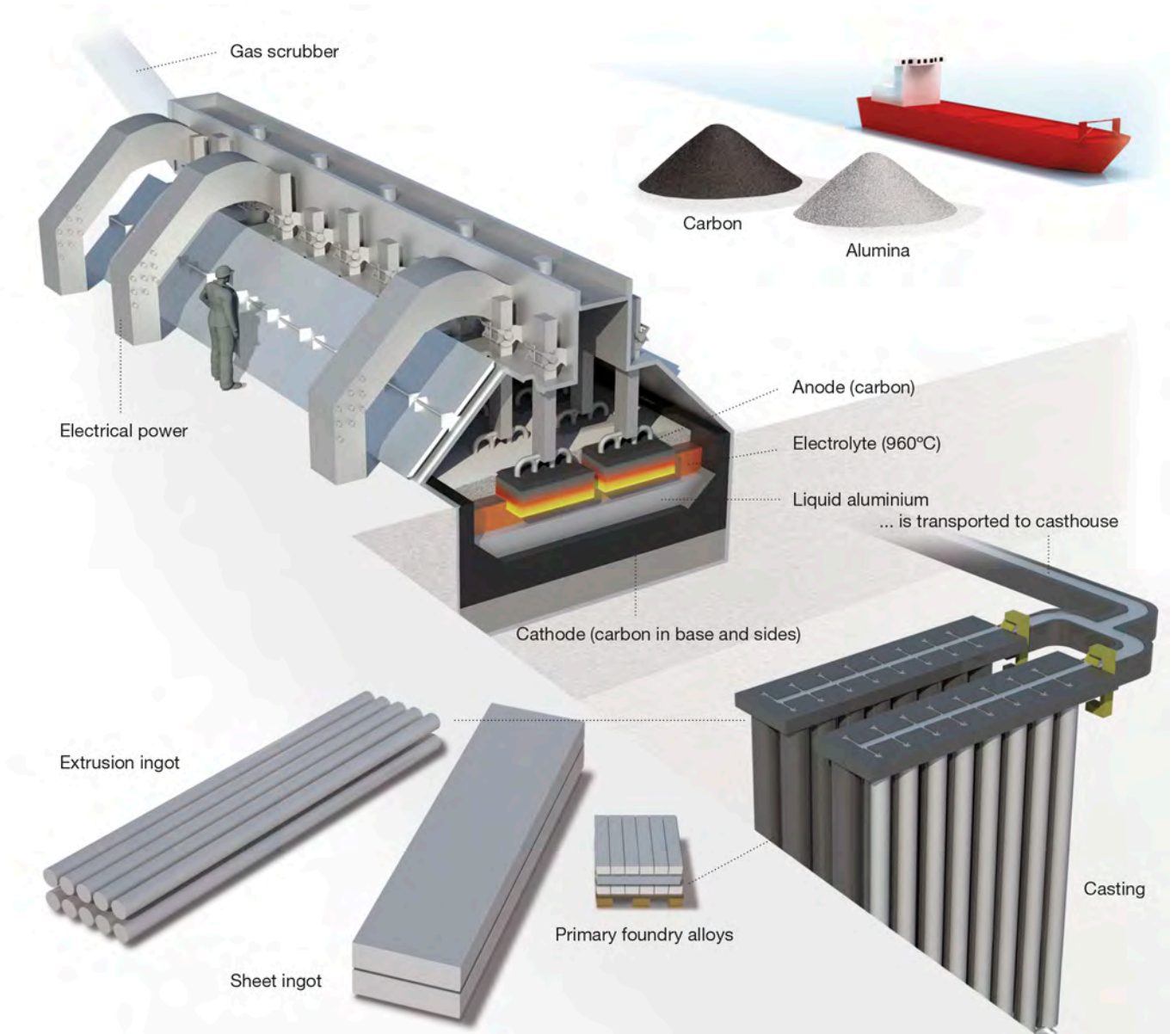
Hydro is one of the most important business enterprises in several of the communities where our aluminium plants are located. A good dialogue with local residents is considered essential for the mutual benefit of our business and the societies in which we operate. For information about what we do to improve social conditions in Barcarena, the location of Hydro's Albras smelter and Alunorte alumina refinery, please see the business description of Bauxite & Alumina.



In Qatar, the large majority of Qatalum's employees are migrant workers. We strive to secure good working conditions for people employed directly and to follow up the conditions for contractor employees.

Hydro's supplier requirements regarding corporate responsibility form an integral part of our procurement process. Several of the suppliers for our metal production operations are based in developing countries dealing with certain environmental and social issues. We have risk-based mechanisms in place to assess compliance with local regulations and our own requirements, including on-site audits and follow-up actions.

Aluminium smelting process



Primary aluminium is produced in reduction plants where pure aluminium is formed from alumina by an electrolytic process. This process is carried out in electrolytic cells, in which the carbon cathode placed in the bottom of the cells forms the negative electrode. Anodes, which are made of carbon, are consumed during the electrolytic process when the anode reacts with the oxygen in the alumina to form CO₂. The process requires electric energy, about 14 kWh per kilo aluminium produced in modern production lines.

Plant	Country	Employees (per Dec.31)	Electrolysis capacity (000 mt) ¹⁾²⁾	Casthouse capacity (000 mt)	Main products	Key characteristics ³⁾
Karmøy	Norway	517	271	370	extrusion ingot, wire rod	<ul style="list-style-type: none"> Two prebake lines R&D center and rolling mill Technology Pilot fully ramped-up in 2018
Årdal	Norway	538	201	232	sheet ingot, foundry alloys ⁴⁾	<ul style="list-style-type: none"> Two prebake lines Technology and competence center Substantial anode production
Sunddal	Norway	681	421	525	extrusion ingot, foundry alloys	<ul style="list-style-type: none"> Two prebake lines R&D center metallurgy and casting Largest and most modern plant in Western Europe
Høyanger	Norway	161	66	120	sheet ingot	<ul style="list-style-type: none"> One prebake line
Husnes	Norway	322	193 ⁵⁾	200	extrusion ingot	<ul style="list-style-type: none"> 100% Hydro owned from Nov 2014 Decision to start-up idle electrolysis capacity (95 kmt)
Slovalco (55.3%)	Slovakia	489 (100% basis)	175 ⁷⁾ (100% basis)	200 (100% basis)	extrusion ingot, foundry alloys	<ul style="list-style-type: none"> Joint venture with Penta (Slovakia) Long-term power contract expiring end of 2021 One prebake line
Tomago (12.4%)	Australia	974 (100% basis)	74	75	standard ingot, extrusion ingot	<ul style="list-style-type: none"> Joint venture with RTA and GAF Long term power contract expiring in 2028 Largest producer in Australia Three prebake lines
Qatalum (50%)	Qatar	1092 (100% basis)	318	335	extrusion ingot, foundry alloys	<ul style="list-style-type: none"> Joint venture with Qatar Petroleum 40 year gas supply contract expiring in 2049 Among the world's lowest cost smelters Two prebake lines
Alouette (20 %)	Canada	841 (100% basis)	122	150	standard ingot	<ul style="list-style-type: none"> Joint venture with RTA, AMAG and IQ/Marubeni Long term power contract expiring end of 2030 Is a first quartile smelter on the global cost curve Largest producer in North America Two prebake lines
Albras (50 %)	Brazil	1163 (100% basis)	460 ⁶⁾ (100% basis)	460 (100% basis)	standard ingot	<ul style="list-style-type: none"> Joint venture with NAAC Long term power contract expiring end of 2024 Largest producer in South America 4 prebake lines

1) Production and casthouse capacity for part-owned companies represents our proportional share. Slovalco and Albras are fully consolidated in terms of volumes and financial results. Karmøy includes the new Pilot reduction line.

2) In addition to the production capacity indicated in the table above, Rolled Products' Neuss smelter located in Germany has an annual electrolysis capacity of 235,000 mt.

3) See also discussion regarding power supply for our wholly owned Norwegian smelters and additional information relating to power supply for certain other plants.

4) Curtailment of one foundry alloy line from the middle of 2012.

5) Actual production impacted by curtailment of about 50 percent of capacity in the first quarter of 2009. Restart decision made in 2017, full production expected in 2020.

6) Actual production impacted by curtailment of about 50 percent of capacity from April 2018 to October 2019.

7) Actual production impacted by curtailment of about 18 percent of capacity from January 2020.

Metal Markets

Operations

Metal Markets is responsible for all sales, marketing and distribution activities relating to products from our primary metal plants and our stand-alone recycling plants (recyclers). We operate seven recyclers, which recycle post-consumer scrap into new products. We also market metal products from our part-owned smelters and third parties, and engage in other sourcing and trading activities, including hedging activities on behalf of other business areas in Hydro.

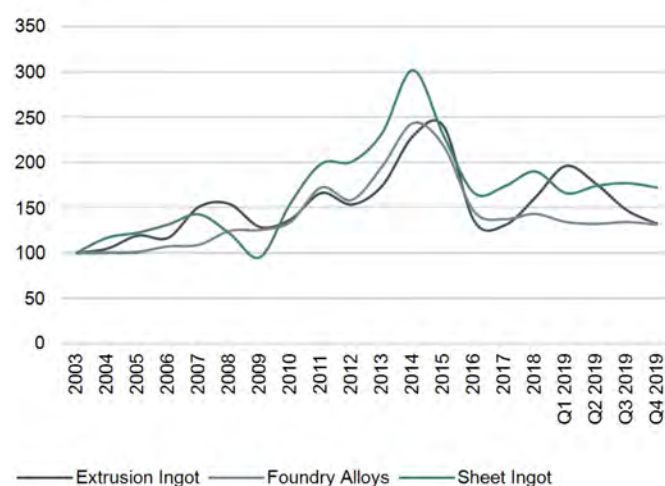
Cost and revenue drivers

Our results are predominantly affected by the operating results of our recyclers, margins on sales of third-party products and results from ingot and LME trading activities.

Revenues for our recyclers are influenced by volumes and product premiums over LME. Costs are driven by the cost of scrap and standard ingot premiums over LME, freight costs to customers and operational costs, including energy consumption and prices.

European premium development*

Indexed, 2003 = 100



Source: Hydro.

*Premiums above LME for key product categories in Europe excluding wire rod and Neuss production

Our results can be heavily influenced by currency effects⁵ and ingot inventory valuation effects.¹

Competitive strengths

- Leading worldwide supplier of extrusion ingot, sheet ingot, foundry alloys and wire rod
- High share of value-added products
- Scrap conversion services converting customer scrap back into extrusion ingot

⁵ Currency effects are comprised of the effects of changes in currency rates on sales and purchase contracts denominated in foreign currencies (mainly U.S. dollars and Euro for our Norwegian operations) and the effects of changes in currency rates on the fair market valuation of dollar denominated derivative contracts (including LME futures) and inventories, mainly translated to Norwegian kroner. These amounts can be very substantial. Hydro manages its

- Extensive multi-sourcing system, including broad network of primary casthouses, recyclers and partly owned primary sources
- Strong recycling capabilities, including world-leading scrap sorting technology
- Setting a new standard for low-carbon footprint products with the greener brands CIRCAL and REDUXA
- Flexible sourcing system enabling significant, rapid and cost-effective volume adjustments
- Strong market position in Europe, the U.S. and Asia, including Qatalum volumes
- Commercial expertise and strong risk management competence enabling us to secure manufacturing margins
- Leading R&D competence in value-added casthouse products, developing new products, improving our own production processes and supporting our customers in their improvement work

Recycling

Primary Metal's Recycling business unit has been mandated by the Corporate Management Board to act as the Center of Excellence (CoE) for aluminium recycling across all the business areas in Hydro. Hydro's ambition is to significantly grow post-consumer scrap recycling while improving its carbon footprint. The CoE will develop an organization that will support all units in reaching their recycling growth ambitions.

We have a network of seven recyclers that convert scrap metal and standard ingot into extrusion ingot. We have five plants in Europe and two in the U.S. These plants have total annual capacity of around 0.6 million mt. About two-thirds of this capacity is located in Europe. Our recyclers in Europe are in Luxembourg, the United Kingdom, Germany, Spain and France. In addition, we operate the scrap shredding and sorting plant in Dormagen, Germany, with scrap capacity of 36,000 mt. We purchase process scrap and post-consumer scrap from third parties for recycling back into extrusion ingot. Standard ingot and alloying metal are added to meet customer specifications. These are procured globally.

Sourcing and trading

To optimize our global standard ingot portfolio, we source standard ingot from third parties for recycling in Hydro's recyclers and primary casthouses, as Hydro's production of standard ingot partly goes to other regions to optimize logistics. We also enter third-party contracts to optimize our total portfolio position and to reduce logistics costs. In addition, we sell standard ingot to external customers.

Our main risk management objectives are to achieve an average LME aluminium price on primary metal production, matching the average customer pricing pattern, and to secure margins in our mid-stream and downstream businesses. Our sourcing and trading operation acts as an internal broker for all LME-hedging transactions by our business areas in order to consolidate Hydro's exposure and reduce transaction costs.⁶

external currency exposure on a consolidated basis in order to take advantage of offsetting positions.

⁶ These hedging activities, which are designed to mitigate cash exposures, can generate significant accounting effects, partly due to asymmetrical accounting treatment.

Markets, products and customers

Most of our aluminium is sold in the form of value-added casthouse products such as extrusion ingot, sheet ingot, foundry alloys and wire rod. Our product with the highest volume is extrusion ingot, which is sold to extruders producing aluminium profiles. The most important end-use segments include the building and construction industry, transport and general engineering. Our key market region for extrusion ingot is Europe. However, the Asian and U.S. markets are also important for our metal-selling units in Qatalum and Tomago. Other important markets for Qatalum include Turkey, the Middle East, Australia and New Zealand.

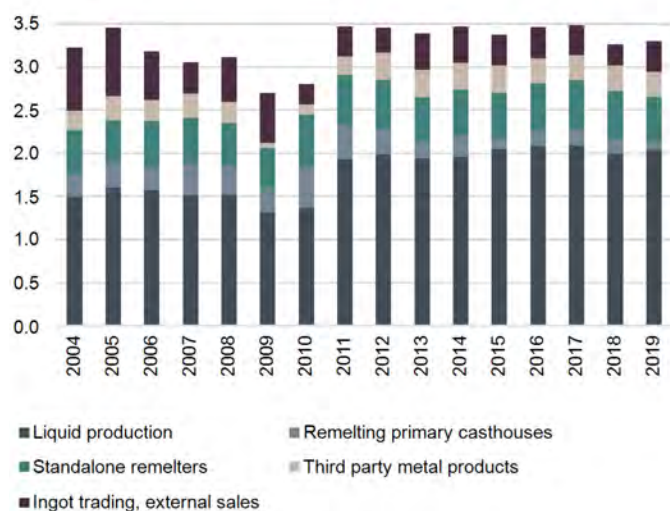
Foundry alloys are sold to foundries producing cast parts primarily for the automotive industry. Asia is a significant market for this product, in addition to Europe, which is our largest market. Sheet ingot is sold to European rolling mills, with packaging and transportation as the most important end-use segments. Wire rod is sold to wire and cable mills in Europe for power transmission and other electrical applications.

In addition to marketing products from our fully owned plants, we have commercial agreements to market products from part-owned aluminium plants, including full marketing responsibility for all of the casthouse production at the plants in Qatar and Slovakia.

Our regional market teams are key to our customer approach, delivering commercial, technical, logistical and scrap conversion services. Optimized solutions, such as our customer service programs and online customer portal, add further value and help build and reinforce customer relationships.

Sales of casthouse value added products and ingot trading

Million mt



Technology and innovation

Innovation and development are carried out in close collaboration between our customers, production units and R&D. We emphasize three main areas: the quality of our products, the efficiency of our production system and the development of new alloys. Our casthouse production

process is based on our advanced proprietary casting technology, developed by the fully owned equipment producer Hycast and our R&D organization.



Quality improvements are closely linked to our customer technical service, which addresses customer needs while improving our own casthouse process. We develop new alloys with distinct properties to support the development of new or enhanced applications within industries such as automotive, building and construction, and electronics. This work begins with developing an understanding of metallurgical processes that forms the basis for sample compositions and production methodologies carried out in laboratory or test production facilities. Full-scale testing is often completed with customers and/or end-users.

Recycling post-consumer scrap is an important way we reduce costs, increase capacity utilization and reduce the carbon footprint of our products. Our casting and alloy expertise enables us to produce products that can be recycled and used as raw materials for high quality semi-finished products. Developing products that optimize the use of recycled material is another focus area.

Hydro produces two certified sustainable products for the low-carbon, circular economy:

- REDUXA is produced by renewables-based aluminium plants, and has a guaranteed maximum carbon footprint of 4 kg CO₂/kg aluminium. This includes emissions from the bauxite/alumina and energy sources as well as the smelter emissions (Scope 1, 2 and 3)
- CIRCAL is produced at remelters, and has a guaranteed minimum post-consumer scrap content of 75 percent

Hydro will continue to further increase capacity in this segment.

Environment

Aluminium can be continuously recycled without degradation in quality and requires only 5 percent of the energy necessary for primary aluminium production. Depending on cost and quality differences between standard ingot and aluminium scrap, recycling can be commercially attractive and provides significant environmental benefits. These include conserving energy and other natural resources, reducing greenhouse gas emissions, reducing land encroachment related to bauxite mining and alumina refining, and reducing landfill. However, most of the aluminium produced today is used in long-life products. Most of the raw material for our recycling comes from process scrap from our own production and from our customers.



Rolled Products

Industry overview

The aluminium rolled products industry is characterized by economies of scale, with significant capital investments required to achieve and maintain technological capabilities and to meet customer qualification standards.

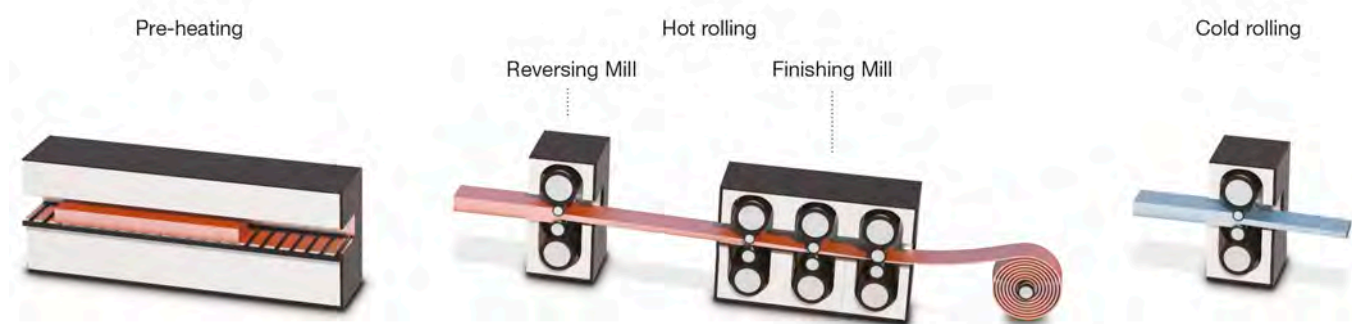
The worldwide consumption of rolled products amounted to approximately 28 million mt in 2019. Foil, beverage cans and transport were the largest segments. Europe and North America each account for around 20 percent of world consumption while China, the largest single market, represents around 35 percent. The five largest producers in Western Europe supply about 70 percent of the European market.

In 2019, the industry was characterized by continued market uncertainty due to trade tensions between the U.S. and China and weaker demand across most end-use segments, especially in transport.

The export of semi-fabricated and fabricated aluminium products from China to the rest of the world has steadily increased over the last several years, driven by production overcapacity as well as by export tax rebates on some semi-fabricated products. Several countries have initiated, or are considering, anti-dumping measures on Chinese imports. The U.S. imposed an import duty of 10 percent on aluminium, and several countervailing and anti-dumping duties on the import of Chinese foil and strip products. This has redirected some Chinese export volumes to other regions, including Europe.

See the Risk review section for the discussion on our exposure to competition from China.

The rolling process



The slabs are preheated before entering the hot reversing mill. The sheets are then rolled to the intermediate thickness in the finishing mill and cold rolled to the final product thickness.

Operations

The rolling process begins with “hot rolling,” where we heat sheet ingots of up to 600 millimeter (mm) to about 500 degrees Celsius, then gradually roll these into thicknesses of 3-13 mm for further processing. Depending on the final product, these sheet ingots are produced with various alloy compositions. An alternative process – continuous casting – converts molten metal directly into coiled strip, typically 4-8 mm thick. Once cool, the thinner metal is further processed in cold rolling mills, producing various types of products for all markets supplied.

Cost and revenue drivers

Rolled products is a margin-driven business. It is based on a conversion price where the LME and metal premium cost element is passed on to the customer. Contracts are generally medium-term. The cost structure includes a high proportion of fixed costs, so results are volume-sensitive.

Competitive strengths

- Positions in high-end products, including automotive, foil, beverage can and lithographic sheet

- Global reach with more than 20 percent export share for high-end markets, serving key customers in the Americas, Africa and the Middle East
- Leading R&D facility dedicated to Hydro Rolled Products
- The world's largest rolling mill Alunorf (50 percent), and Grevenbroich, the world's largest multi-product finishing mill
- Alunorf, Grevenbroich, the Neuss aluminium plant and R&D Bonn are located in close proximity to each other in Germany, generating significant logistical advantages

Rolling mills

We generate approximately 80 percent of our total sales in Europe. More than half of our production is produced in the Grevenbroich/Alunorf rolling system in Germany, one of the most modern and efficient rolling operations in the world. Grevenbroich is the center of our packaging, lithographic and automotive sheet operations. Our production network mainly comprises so-called “wall-to-wall” processing, including an integrated casthouse combined with both hot and cold rolling mills.

In 2019, around 30 percent of the metal used was sourced internally, based on arm's-length conditions related to LME and applicable premium prices. External supplies of liquid metal, sheet ingots, standard ingots as well as post-consumer and pre-consumer scrap from our customers accounted for around 70 percent of our total requirements last year.

Neuss aluminium plant

Neuss is the largest aluminium plant in Germany, with primary metal capacity of 235,000 mt per year, including one curtailed potline. The Neuss plant also has recycling capacity of 90,000 mt, including a recycling line for used beverage cans (UBC). The plant supplies the nearby Alunorf rolling mill with primary and recycling-based sheet ingots for processing and subsequent fabrication of rolled products in Grevenbroich.

The Neuss plant is an important part of our integrated system and provides significant operating synergies.

Markets, products and customers

Our ambition is to leverage our position as a preferred supplier by focusing on quality, product development, and innovative and sustainable solutions, together with excellent customer service and cost efficiency. To ensure a strong market orientation, our sales function is organized centrally along business lines. This is supported by sales offices in Europe, Brazil, the U.S. and Singapore, where we optimize market contact and sales potential.

Rolled Products has five business units, each serving the market segments in which we operate. They are:

Lithography

Hydro is a supplier of lithographic sheet for printing plates, a market characterized by stringent requirements for surface quality, metal characteristics and mechanical properties. We differentiate our products through innovation, consistent high quality, supply chain solutions and extensive service to customers. Key customers in this segment include Agfa and Kodak. Our lithographic production is concentrated at the Grevenbroich plant.

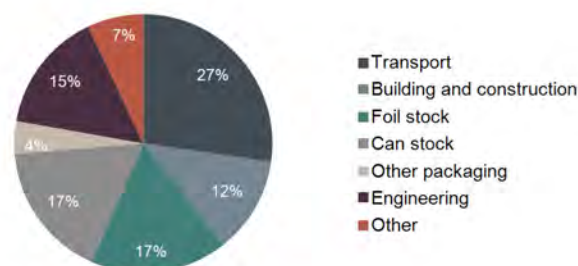
Automotive

We are a major supplier of aluminium sheet and coil to the European automotive market for interior and exterior vehicle body parts, chassis and component applications as well as e-mobility applications. Key customers include Audi, BMW, Daimler, Jaguar Land Rover, PSA and Renault. Production is concentrated within our Grevenbroich and Hamburg plants. Our new production line in Grevenbroich (Automotive Line 3) has increased our car body capacity.

We also produce a variety of mainly clad strip and sheet used in the manufacture of heat exchangers for passenger and commercial vehicles, as well as other product applications. We are among the top producers in Europe, working with Tier 1 automotive suppliers such as Denso, Linde, Mahle Behr and Modine to develop specially adapted alloys and optimized production techniques to fit their manufacturing processes.

Flat rolled products consumption Western Europe 2019

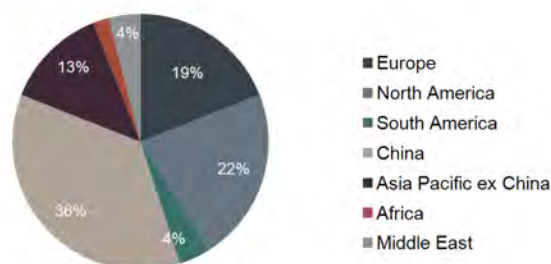
Total market 4.2 million mt



Source: CRU Quarterly November 2019

Flat rolled products consumption Global 2019

Total market 28.1 million mt



Source: CRU Quarterly November 2019

Foil

We serve customer needs in the rigid, semi-rigid and flexible packaging industry, offering plain foil and strip. We provide packaging solutions combining high-quality manufacturing with innovation, cost effectiveness and sound ecological characteristics. We also offer consulting and technical support. We are specialists in thin-gauge foil for flexible packaging, offering foil as thin as 5.0 µm for the packaging of food as well as for technical applications. Amcor Flexibles, Constantia Flexibles and Tetra Pak are key customers. Production of packaging is mainly concentrated in our Grevenbroich rolling mill.

Beverage can

Hydro is a worldwide supplier of body, end and tab stock in the form of rolled coil for the production of aluminium beverage cans. Our modern and efficient production facilities, technical know-how and experienced development support the delivery of high-quality materials to meet the specific requirements of can manufacturers. Our Grevenbroich plant is dedicated to the production of Hydro's quality proprietary can-end stock efficiEND®, which promotes productivity and cost-effective manufacturing to major beverage can manufacturers such as Ardagh, Ball and Crown.

General engineering

The business unit supplies products that are mainly used in the building and construction, transportation, industrial and electrical markets. Products include coil and sheet for

wholesalers and end-producers. We operate modern and efficient manufacturing processes, offering quality products and extensive technical support.

In addition, Hydro is one of the leading manufacturers of coated aluminium strip for building and construction applications. Based on decades of experience in the market, we offer customers a portfolio of cost-effective solutions from dedicated production lines in our Holmestrand rolling mill in Norway, including product applications for roofing and cladding, roller shutters, ceilings, composites and other specific applications.

Technology and innovation

Rolled Products differentiates its business through innovative products, processes and services that save resources, reduce emissions, increase performance – all which benefit customers. This increases our market share and margin contribution. We cooperate with customers to develop innovative solutions through R&D and our sophisticated technical customer service. Our in-house simulation team utilizes the latest computer-aided process design and alloy development tools.



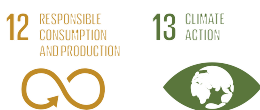
Supported by our advanced scrap processing and melting concepts, we intend to increase the volume of recycled material used in our production processes. We also focus on optimizing our alloys to make aluminium the material of choice in all our markets.

In many markets, automotive in particular, product design complexity and demands on new high-strength materials are increasing. We constantly develop our range of alloys to use the unique properties of aluminium in the best possible way. We also strive to develop new businesses, e.g. through concept studies. One example is the concept for a fully electric L7e micro-car class, which we developed together with Forschungsgesellschaft Kraftfahrwesen mbH in Aachen, Germany.

Our R&D center contributes to Hydro’s sustainability and profitability strategy by constantly working on product and process developments in all of Rolled Products’ businesses, such as the latest major process development for the recycling of scrap, laser-induced breakdown spectroscopy (LIBS).

Environment

Aluminium has numerous advantages in terms of energy savings and reduced greenhouse gas emissions in the use phase of the overall life cycle. Our technical customer service department works closely with customers to develop sustainable, innovative and cost-efficient solutions to take advantage of these qualities.



Light-weight aluminium products used in the transportation industry reduce fuel consumption and emissions. Our production of automotive body sheet is one example of how we contribute to reducing greenhouse gas emissions while continuing to grow our business.

Another example is the superior food preservation properties of aluminium packaging. Food packaging utilizing aluminium requires less energy to cool and also reduces food waste.

As remelting only requires 5 percent of the energy used for the production of primary aluminum, we aim at significantly increasing the volume of recycled material in our products through our advanced scrap processing and melting production processes. We also focus on optimizing our alloys to make aluminium the material of choice in all our markets.

Compared to Hydro's upstream operations, Rolled Products' environmental footprint is relatively small and mainly within the vicinity of our production sites. The main environmental impacts include greenhouse gas emissions, noise, odor and traffic volume. We follow European policies such as the Water Framework Directive. Our sites conduct self-assessment exercises designed to identify and lower the risks associated with water usage and consumption.

People



Our internal performance and feedback process is an important tool to engage our people and enhance the performance and development of our organization. It is implemented in all Rolled Products units with a participation rate of close to 100 percent. Our employees have provided qualitative feedback showing that this is helpful for their personal development.

We recognize diversity as a key value and performance driver. This is reflected in our internal improvement activities and in our employer branding. The business area’s management team has three nationalities and a female share of 27 percent.

Society

As a significant employer in the areas where we have production sites, Rolled Products and our employees play an active role in the development of the surrounding communities by supporting local programs aimed at education and community involvement.



Corporate social responsibility (CSR) also forms an integral part of our procurement process. All of our suppliers are required to undergo a comprehensive selection process, including risk assessments and on-site audits, to ensure continued compliance with local regulations and Hydro’s own internal requirements.

Plant	Country	Capacity (000 mt)	Main products	Other characteristics
Grevenbroich	Germany	570	Packaging, lithographic sheet, automotive	<ul style="list-style-type: none"> · The world's largest multi-product finishing mill · Supplied by nearby AluNorf rolling mill
Alunorf 50%	Germany	800	Packaging, automotive, general engineering	<ul style="list-style-type: none"> · The world's largest rolling mill · 50/50 joint venture with Novelis · Partly supplied with sheet ingot from nearby Neuss smelter · Integrated casthouse, based on remelting and recycling
Hamburg	Germany	165	General engineering, automotive, heat exchanger	<ul style="list-style-type: none"> · Integrated casthouse and recycling
Karmøy	Norway	90	General engineering	<ul style="list-style-type: none"> · Continuous casting
Holmestrand	Norway	90	Building, general engineering	<ul style="list-style-type: none"> · Integrated casthouse, recycling center
Neuss	Germany	235 primary 40 (UBC)	Liquid metal and sheet ingots	<ul style="list-style-type: none"> · Integrated casthouse and recycling · One potline curtailed · UBC recycling center
Dormagen	Germany	45	Automotive	<ul style="list-style-type: none"> · Slitting

Business unit	Shipments in %	Key characteristics
Automotive	15	Serving OEMs and their suppliers with strip and sheet for automotive body, component and chassis applications
Beverage can	24	Beverage Can with leading position in global can market
Foil	10	Foil with leading position in the high value-added liquid packaging market
Lithographic	15	Largest producer in the lithographic sheet market
General engineering	36	High-end General Engineering products mainly used in industrial applications; Coated building products

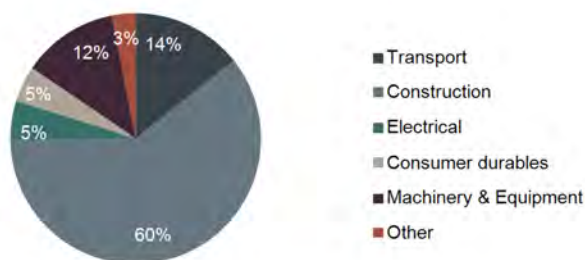
Extruded Solutions

Industry overview

The global extrusion industry is characterized by fragmentation, with numerous local suppliers that are well established in their respective markets. Extruded Solutions is the global market leader and largest player in the industry.

Extrusion aluminium consumption* by end use 2019

Total market 29.4 million mt

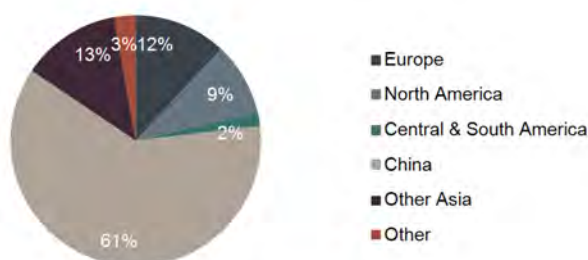


*Consist of semi fabricated products (included recycled aluminium)

Source CRU 2019 /Hydro

Extrusion aluminium consumption* by region 2019

Total market 29.4 million mt



*Consist of semi fabricated products (included recycled aluminium)

Source CRU 2019 /Hydro

North America

In North America, although a large part of the business is local, the structure of certain markets, such as transportation, automotive, is more often national or even global. Beyond Extruded Solutions and its larger competitors, the majority of extrusion operations in North America are local, independently owned companies.

The building & construction market, driven by both residential and commercial applications, remains the largest consumer of aluminum extrusions in North America. The automotive industry, however, has experienced the highest growth over the past several years. The increase in automotive demand is mostly due to continued material substitution with the light weighting of vehicles and the rapid growth of the electric vehicle market.

Europe

Proximity is usually important to European customers. However, some extruders that previously served local markets, have expanded their footprint into other countries. There are more than 250 extruders with more than 730 presses in Europe. Despite the overcapacity in Europe, we are seeing new extruders entering selected markets.

The building and construction industry is the largest consumer of aluminium extrusions in Europe, and the market remains fragmented. The market for building systems is largely local or regional and is experiencing consolidation. With the harmonization of building regulations across the EU, vendors are creating systems that are not limited by national borders and are coordinating development, production, purchasing, logistics and marketing. Our Building Systems business unit is taking the same approach.

Asia

After two decades of strong investment-driven GDP growth, the Chinese economy is entering an era of slower consumption-driven growth. The large government stimulus packages put in place after 2008 helped stimulate demand and led to a significant capacity increase in the extrusion industry. With somewhat lower growth rates, especially in the building and construction segment, more extruders are expected to move to the higher-end industrial and automotive segments.

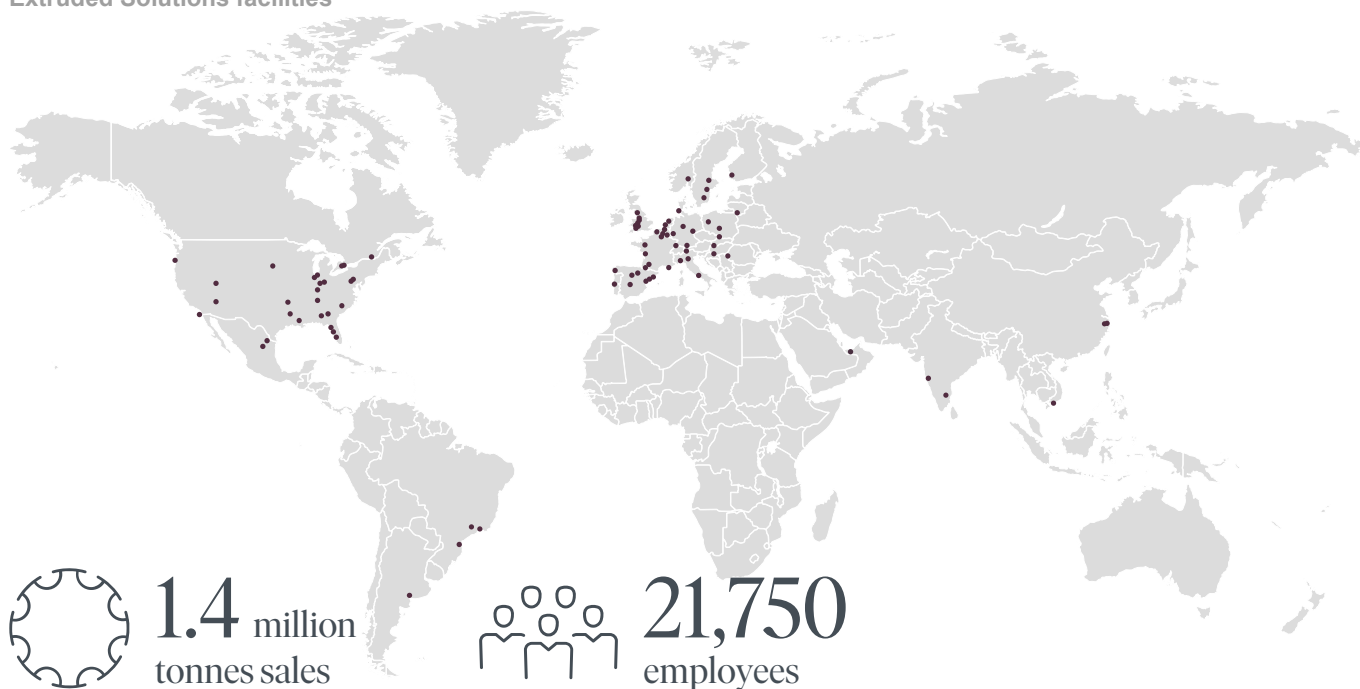
Within the automotive sector, despite the recent slowdown, the Greater China market continues its growth and maturity within lightweight vehicle production. In addition, the Chinese government is heavily facilitating and promoting new energy vehicle (NEV) infrastructure and technology, creating opportunities for new applications in the aluminium tubing business.

Precision Tubing

Precision Tubing is a global industry that is represented in several regions. Consumption of extruded aluminium round tubes, multiport extrusions and welded aluminium tubes is driven by thermal management applications in the automotive market. With electric mobility gradually becoming the go-to technology, additional applications in battery cooling have emerged as potential tubing segments. Another industry that is recognizing the benefits of aluminium is Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R). In light of stricter legislation and tougher standards for energy efficiency and especially refrigerants, coupled with relatively high copper prices, aluminium represents a viable alternative solution.

Aluminium consumption in the automotive industry is expected to grow, driven largely by the increase in worldwide production of light vehicles, electric and hybrid cars, and higher penetration of air conditioning in emerging markets. In parallel, the HVAC&R market still represents considerable potential in substituting copper with aluminium at current production volumes. Our Precision Tubing business unit is the clear market leader in providing aluminium solutions for heat transfer applications.

Extruded Solutions facilities



Operations

Extruded Solutions is the leading global supplier of extrusion-based aluminium solutions with a market share of 18 percent in Europe and 22 percent in North America. The business area also has a solid foothold in emerging markets with extrusion capacity in South America and Asia. Extruded Solutions has four business units: Extrusion Europe, Extrusion North America, Precision Tubing and Building Systems. The business units are responsible for their respective value chains, from casthouses, aluminium extrusion and value-adding operations to commercial activities such as product development and sales.

Extruded Solutions has an extensive network of production plants that ensures global reach combined with local presence.

Cost and revenue drivers

Extruded Solutions is a margin business and the LME aluminium cost element is passed on to the customer. Contracts are typically short to medium-term. Extruded Solutions will continue to shift its portfolio toward higher-margin products.

Competitive strengths

- Extruded Solutions provides some of the most sustainable aluminium products and solutions in the market through the CIRCAL and REDUXA portfolio
- Strong technology competence with dedicated R&D centers and more than 1,000 engineers close to customers
- Global reach and local presence, increasing flexibility and reliability for customers
- Speed in delivery and proximity to customers
- Value chain breadth and depth, from extrusion to surface finishing and fabrication, welding and assembly

- Strong and agile product development capabilities
- Technical leadership in precision tubing and extrusion

Technology and innovation

Extruded Solutions' innovation model promotes fast decision paths from idea to product. The business area has four R&D centers, located in Finspång (Sweden), Troy (USA), Karmøy (Norway) and Toulouse (France). These are complemented by application centers covering nearly 40 locations across the four business units, and by corrosion labs in China, the U.S. and Norway.

9 INDUSTRY INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



All efforts are shared across business units to achieve optimal knowledge transfer and to enable faster, better impact in other markets when similar opportunities arise.

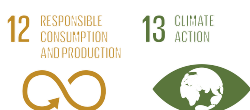
To deliver better products to the customers faster, and to address specific challenges, Extruded Solutions collaborates with leading universities such as the Norwegian University of Science & Technology, Michigan Technological University, Massachusetts Institute of Technology and the University of Oxford, as well as with specialized companies.

Building Systems has opened physical showrooms in selected cities in Europe to promote new product developments. Product innovation is vital to success in that market, mainly in Europe, where end-users are becoming advanced.

In Precision Tubing, the innovation is focused on developing new aluminium applications for the automotive industry, such as fuel and brake lines. Aluminium substitutes copper and steel, resulting in comparable performance, but lighter products. R&D in Precision Tubing is also focused on developing new alloys to achieve higher corrosion resistance in heat exchange applications.

Environment

Environmental considerations are embedded in Extruded Solutions' business planning and decision-making. Designing for recycling and optimizing the products for longer life are important parts of our environmental efforts.



Extruded Solutions has signed an agreement with Primary Metal to source and use CIRCAL in its aluminium building systems. CIRCAL has Hydro's lowest environmental footprint with minimum 75 percent post-consumer recycled aluminium – metal that has been used in other products. This brings the CO₂ footprint to a low level, below alternative materials. Extruded Solutions is also sourcing REDUXA from Primary Metal. REDUXA has a maximum carbon footprint of 4.0 kg CO₂ per kg aluminium produced. Our customers are looking for more sustainable materials for their products, and CIRCAL and REDUXA are certified products that help them meet their own climate strategies.

Thirty-one of Hydro's extrusion and fabrication facilities have achieved certification according to the Aluminium Stewardship Initiative's (ASI) Performance Standard. ASI is a global, multi-stakeholder, non-profit standards setting and certification organization. The ASI works toward responsible production, sourcing and stewardship of aluminium following an entire value chain approach.

By the end of 2019, about 99 percent of all Extruded Solutions sites had fulfilled the target of being certified under ISO 14001.

All our sites are required to set targets for:

- Reducing CO₂ and greenhouse gas emissions
- Avoiding emission of pollutants to ambient air to the extent possible. The emitted amount of pollutants must not exceed limits specified in permits or in regulatory requirements
- Minimizing fresh water usage and waste water discharges, ensuring that discharged water quality is in line with local regulations and does not exceed the established limits
- Eliminating or minimizing waste and prioritizing waste recycling. At locations where recycling opportunities exist, the target is to completely eliminate waste to landfill
- Conducting and documenting an energy-planning process, leading to activities that continually improve energy performance
- Preventing leaks, spills and releases from tanks and chemical storage areas to protect surface and ground waters

Extruded Solutions had no major environmental incidents in 2019, but had an increase in noise complaints. This is a key focus area for 2020. For more information, see note E2 to the Viability performance statements.

People

Extruded Solutions employs approximately 21,750 people in more than 40 countries. The business area strives for a safe work environment and believes that excellence in Health, Safety and Environment (HSE) will be achieved through consistent implementation of the management system, and through committed and visible leadership and full engagement of all employees in HSE activities.

Extruded Solutions aims to attract talented people by offering an encouraging and stimulating environment, interesting career opportunities and good working conditions. We have several ongoing global people processes designed toward reaching these ambitions.

Society

As a global extrusion company, with presence in both industrial and emerging regions, Extruded Solutions has a strong commitment to address social challenges in the local communities where its plants are located.

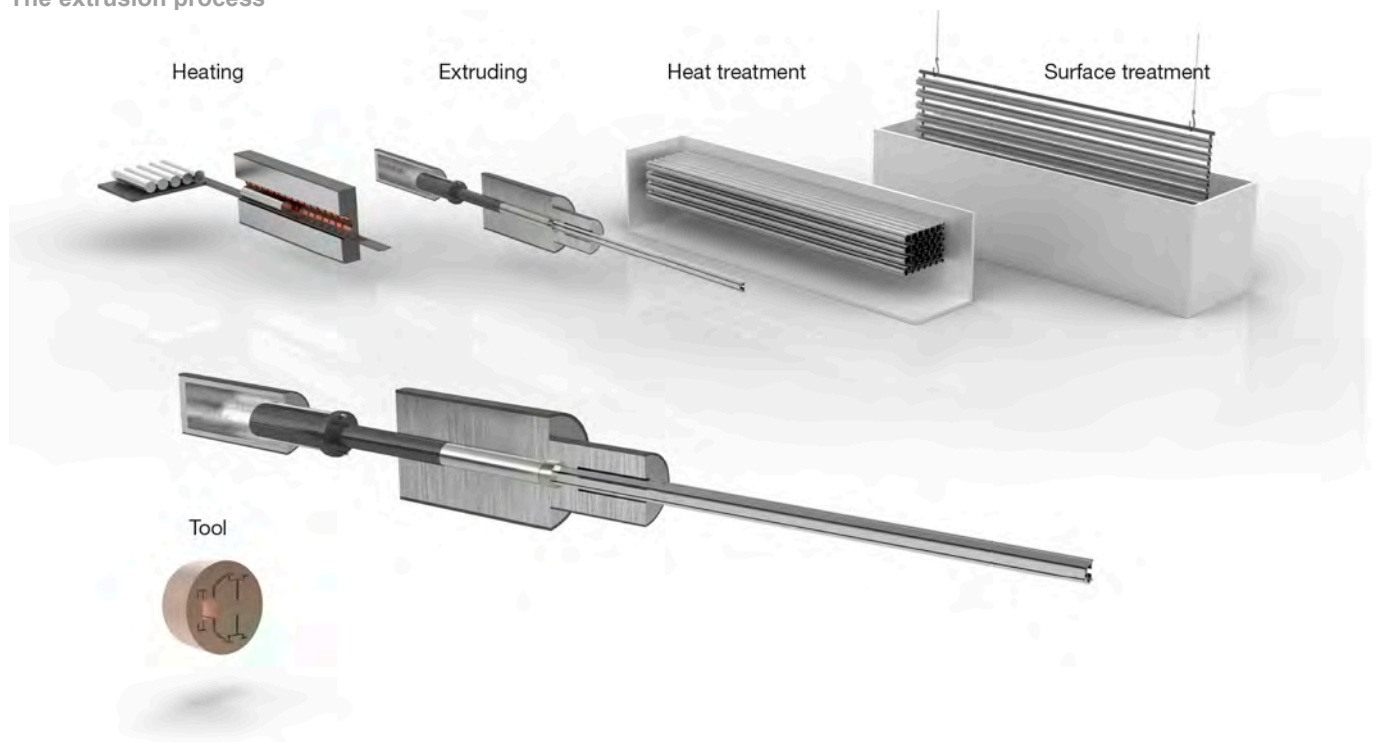
In Tønder, Denmark, we are working closely with integration and settlement coordinators from the local municipality. This cooperation creates opportunities for work and housing for newcomers and refugees in Tønder. The refugees work at the plant, which gives them an opportunity to develop a network and learn the culture and language. In addition, these new employees bring essential competence, different backgrounds and perspectives, which is important for the company culture.

In Kuppam, India, Hydro is financing two learning labs, which give children at schools in the village access to enhanced learning opportunities. These innovative learning labs combine digital learning platforms and hands-on games, which let the children learn at their own pace and level. This initiative has enabled the children to improve in several areas, the most important one being their English skills. Higher standard schools require proficient levels of English, and gaining admission to such schools can have positive life-changing effects for some of these young students.



Social responsibility is an important foundation for procurement and sourcing in Extruded Solutions. Hydro has worked to promote transparency and sustainability in the supply chain by implementing its supplier declaration and conducting on-site audits of suppliers. Hydro has focused on the largest suppliers in high-risk regions. About 60 percent of total spending is directed toward a relatively small share of our 30,000 suppliers.

The extrusion process



The ingots are preheated, extruded through a die and hardened before surface treatment.

Energy

Industry overview

Electricity generation in the Nordic market is mainly based on hydropower (54 percent) and nuclear power (22 percent). In Norway, power generation is almost entirely based on hydropower. Total annual Nordic consumption is approximately 400 TWh.

The Nordic region has had a common electricity market since the late 1990s. Since 2010, the physical power exchange, Nord Pool, has operated a common Nordic-Baltic electricity market. The Nordic system price is calculated in the day-ahead auction in the spot market at Nord Pool. The system price is normally the main reference price for financial contracts traded bilaterally and with the financial power exchange Nasdaq. Area prices are calculated for physical delivery to constrain flows when available transmission capacity would otherwise be exceeded. There are five price areas in Norway, four in Sweden and two in Denmark. Finland, Estonia, Lithuania and Latvia constitute one bidding area each.

Prices are influenced by fuel costs (including emission allowance costs), meteorological parameters (precipitation, temperature and wind) and exchange transmission possibilities with adjoining markets, as well as by fluctuations in demand. An increase in intermittent generation from solar and wind power capacity has had a significant effect on price volatility in Europe's continental markets and influenced price developments in the Nordic market.

The implementation of EU energy and climate regulations has and will continue to have a significant influence on energy prices and energy and climate policy in all EU/EEA countries. Emissions trading has increased electricity prices by up to 50 percent in periods with high emission-allowance costs in Europe, including the Nordic market, where electricity is predominantly generated by non-emitting sources. There is, however, an ongoing EU legislative process aimed at reducing emissions and thereby increasing future allowance prices. To prevent carbon leakage, the EU established guidelines in 2012 allowing national governments to support industries exposed to global competition. Actual compensation schemes, which are dependent on national implementation, have been established in Norway, Germany and Slovakia, with conditions corresponding closely to the EU guidelines. Please see section Regulation and taxation - Aluminium regulation - climate gases later in this report for more information on the matter.

A common electricity certificate market for Norway and Sweden was established in 2012 with the objective to support the development of new renewable generation capacity. The certificate system is designed to support an increase in annual renewable generation in the Norwegian/Swedish market of 28.4 TWh by 2021. The Swedish government has decided to prolong the scheme with a new national target between 2020 and 2030.

Operations

Hydro is a global energy player, purchasing and consuming substantial quantities of electricity for its primary aluminium plants, rolling mills and alumina refinery operations. For that

reason, about one-third of Energy's employees are engaged in activities on behalf of Hydro's other business areas, to secure competitive energy sourcing.

The rest of our organization is mainly engaged in our hydroelectric and wind power production, and connected market activities. In Norway, we are the largest private-owned power producer with operating and ownership interests in 26 hydroelectric power plants. Installed capacity was approximately 2,000 MW in total at the end of 2019, representing normal annual production of 10 TWh.¹ We also operate the Tonstad Windfarm (208 MW), from which we purchase all volumes as produced, balancing and optimizing production against our own hydropower production. In addition, we purchase above 9 TWh of renewable power annually in the Nordic Market under long-term contracts.

Cost and revenue drivers

Production volumes and market prices are strongly influenced by hydrological conditions. Seasonal factors affect both supply and demand. Our cost base is relatively stable, although volatile spot volumes and prices may cause significant variations in quarterly revenues. We optimize our total power portfolio in the market and in cooperation with our aluminium plants.

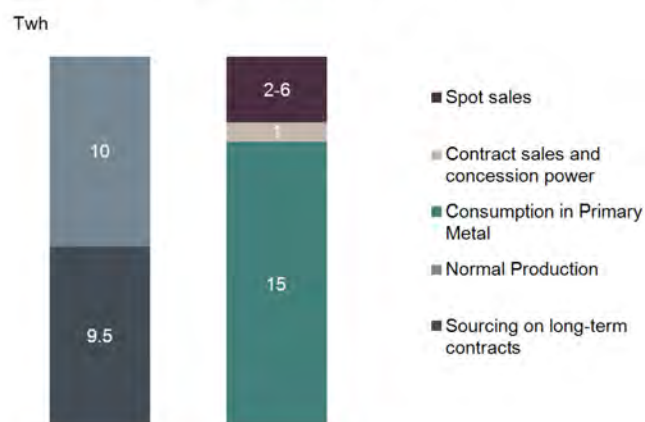
Competitive strengths

- Power coverage until 2030
- Substantial captive power through equity hydropower in Norway
- High share of renewable energy
- Low operating costs
- Operational and commercial competence
- Stable earnings and cash generation

Norwegian power assets

Our power plants are located in three main areas – Telemark, Sogn and Rørdal-Suldal – and managed from a common operations center at Rjukan in Telemark. We also own the Vigeland power plant in Vennesla, and a 33 percent interest in Skafså Kraftverk ANS in Telemark.

Generation and power sourcing Norway



Approximately two-thirds of our normal annual power production in Norway is subject to reversion to the Norwegian state with Rørdal-Suldal (RSK) being the first significant production facility subject to reversion. See the

sections Strategy and targets, and Energy - regulation and taxation, for further information on this matter.

Market operations

We optimize power production on a daily basis, according to the market outlook, weather forecasts and the hydrological situation within Hydro's water reservoirs. By utilizing the flexibility of the hydropower plant systems and the volatility in the spot market price, we aim to realize a premium above the average spot price. Our total Norwegian power portfolio, including our own production, is balanced in the market on the Nord Pool Spot power exchange. Spot market prices vary significantly between dry and wet years, with an average of 3.0 TWh.

Environment

Hydroelectric power is a renewable energy source. However, there are several potential environmental impacts associated with Hydro's operations, including changes in aquatic and terrestrial habitats along the waterways and impact on recreation and tourism. All of our reservoirs are located within or near national parks and other protected areas in mountainous regions in southern Norway, including Hardangervidda and Jotunheimen.



We limit vehicle traffic related to operations and maintenance of reservoirs that are within protected areas, and snowplowing to protect reindeer habitat. We monitor the impact of our operations on aquatic life in rivers

connected to catchment areas. In order to mitigate the effects of water regulation on fish populations, we launch around 86,000 fish spawn each year in almost 40 lakes and rivers as part of concession requirements. Rehabilitation projects are also carried out to improve fish habitats and aesthetic qualities. Stone refuse tips from tunnel construction are registered and rehabilitation is performed or planned, except for those that are protected as cultural heritage.

People

Energy had around 200 employees, including apprentices, in its consolidated activities at the end of 2019. We emphasize a safe work environment and believe that we can promote this while also delivering efficiency and low operating costs. We monitor and drive safety improvements through systematic, preventive activities focused on controlling risks and by promoting health, safety and environment, which is central to our culture.

Society

Energy's assets are all located in Norway, and our hydropower operations have limited impact on the communities in which we operate. For safety purposes, Hydro restricts public access to certain areas due to varying water levels.



Our supplier requirements regarding corporate responsibility form an integral part of our procurement process, including selecting contractors for project execution.

(Ownership percent)	Rated capacity (MW) (100%)	Normal annual production (TWh) (Hydro share)	Key characteristics / concession period
Sogn (100 %)			
Tyin	374		<ul style="list-style-type: none"> · Total catchment area 803 km² · Concession expiration Tyin 2051 and Fortun 2057
Mannsberg	3		
Holsbru	48		
Skagen	252		
Fivlemyr	2		
Herva	35		
Total Sogn		3.2	
Røldal-Suldal Kraft (95.2%)			
Middyr	2		<ul style="list-style-type: none"> · Total catchment area 793 km² · Concession expiration 2022
Midtlæger	3		
Svandalsflona	20		
Novle	48		
Røldal	172		
Suldal I	169		
Suldal II	155		
Vasstøl	5		
Kvannal	45		
Total Røldal-Suldal Kraft		3.0	
Telemark (100%)¹⁾			
Frøystul	45		<ul style="list-style-type: none"> · Total catchment area 4 094 km² · No reversion except for Frøystul 50% 2044, Moflåt and Mæl 2049
Vemork	204		
Såheim	188		
Moflåt	32		
Mæl	38		
Svelgfoss	96		
Total Telemark		3.5	
Skafså (33%)			
Åmdal	21		<ul style="list-style-type: none"> · No reversion
Osen	15		
Skree	7		
Gausbu	7		
Total Skafså		0.1	
Vigeland (100%)			
Vigelandsfoss	26	0.2	<ul style="list-style-type: none"> · Exempted from reversion
Total		10.0	

1) All plants in Telemark are wholly owned except for Svelgfoss, in which Hydro owns 70.22 percent.

Regulation and taxation

Hydro is subject to a broad range of laws and regulations in the jurisdictions in which we operate. These laws and regulations impose stringent standards and requirements and potential liabilities regarding accidents and injuries, the construction and operation of our plants and facilities, air and water pollutant emissions, the storage, treatment and discharge of waste waters, the use and handling of hazardous or toxic materials, waste disposal practices, and the remediation of environmental contamination, among other things. We believe we are in material compliance with currently applicable laws and regulations.

Aluminium - regulation

Environment

Hydro's aluminium operations are subject to a broad range of environmental laws and regulations in each of the jurisdictions in which they operate. These laws and regulations impose increasingly stringent environmental protection standards regarding, among other things, air emissions, the storage, treatment and discharge of waste water, the use and handling of hazardous or toxic materials, waste disposal practices, and the remediation of environmental contamination. The costs of complying with these laws and regulations could be significant.

Primary aluminium production is an energy-intensive process that has the potential to produce significant environmental emissions, especially air emissions. Carbon dioxide and perfluorocarbons (PFCs), all greenhouse gases, are emitted during primary aluminium production.

In the European Union and other jurisdictions where Hydro operates, various protocols address transboundary pollution controls, including the reduction in emissions from industrial sources of various toxic substances such as polyaromatic hydrocarbons, and the control of pollutants that lead to acidification.

The European Union has adopted legislation to address discharges of dangerous substances to water: The Water Framework Directive (2000/60/EC), as well as specific legislation on bathing waters, drinking water, nitrates in ground and surface waters, and urban wastewater treatment. The European Union has also adopted Directive 2008/105/EC on environmental quality standards in the field of water policy, which sets specific emission limit values for pollutants identified as priority substances and priority hazardous substances (PHS). Among the substances found on the PHS list are polycyclic aromatic hydrocarbons, which are sometimes emitted by the aluminium industry. Any emissions, discharges and losses of such substances (i.e. PHS) must cease in the EU by 2025. Both the Water Framework Directive and the Directive on environmental quality standards were revised in 2013 (Directive 2013/39/EU), notably to expand the list of priority substances and to revise the emission limit values for the period after 2015. Hydro has addressed all the relevant requirements of the Water Framework Directive in cooperation with external consultants and the Norwegian Environment Agency. During 2015, the Norwegian

plants implemented new water monitoring programs after review and approval of the Norwegian Environment Agency. This will form basis for future longer term water monitoring.

Hydro has facilities that have been operated for several years or have been acquired after operation by other entities. Subsurface contamination of soil and groundwater has been identified at many such sites and may require remediation under the laws of the various jurisdictions in which the plants are located. Hydro has made provisions in its accounts for expected remediation costs relating to sites where contamination has been identified that, based on presently known facts, it believes will be sufficient to cover the cost of remediation under existing laws. Because of uncertainties inherent in making such estimates or potential changes to existing legislation, it is possible that such estimates may prove to be insufficient and will need to be revised and increased in the future. Also, contamination may be determined to exist at additional sites that could require future expenditures. Therefore, actual costs could be greater than the amounts reserved.

Integrated pollution prevention and control

Under the EU Directive on Integrated Pollution Prevention and Control 1996/61/EC (the "IPPC Directive"), industrial installations require national operating permits based on best available techniques (BAT) for pollution prevention and control. The European Commission issued a guidance document relevant for the aluminium industry: BAT Reference Document (BREF) for the Non-Ferrous Metals Industries (2001). Norwegian authorities established stricter emission limits for the aluminium industry in Norway applying from January 1, 2007, in line with the IPPC Directive. The IPPC Directive was amended by Directive 2010/75/EU on Industrial Emissions (IED), and the new requirements have been applicable since 2013. The related BREF document has also been updated and new BAT conclusions were adopted in 2016 (Decision (EU) 2016/1032).

European chemical legislation - REACH and CLP

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) is an EU regulation, adopted to improve the protection of human health and the environment and applies to all chemical substances. REACH places the burden of proof on companies, which must identify and manage the risks linked to the substances produced or imported into EU.

Hydro has different roles under REACH as producer, importer and downstream user and follow the requirements including the requirement to register substances produced and/or imported in volumes above 1 ton/year.

The CLP (classification, labeling and packaging) directive is based on the United Nations' Globally Harmonized System (GHS) and its purpose is to ensure a high level of protection of health and environment. CLP is legally binding and requires manufacturers, importers or downstream users of substances to classify, label and package hazardous chemicals appropriately. Hydro is mainly a downstream user of chemicals and follows the requirements including checking the SDS (safety data sheets) to ensure compliance with exposure scenario and safe use.

Greenhouse gas emissions

The aluminium industry was included in the EU CO₂-emissions trading system (ETS) in 2013. The system is regulated by the ETS Directive. The aluminium industry is affected by the scheme directly and also indirectly by the pass-through of CO₂ allowance costs by power producers into the power prices ("indirect effects").

Aluminium production is qualified as an industrial sector exposed to a significant risk of "carbon leakage" (i.e. risk of European operations losing market share to less carbon-efficient installations outside the EU). Aluminium producers therefore receive a higher percentage of free emission allowances compared to sectors not exposed to carbon leakage. The free allocation of emission allowances is agreed until 2020. Hydro is currently close to the benchmark values set for our operations, thus the financial impact of these regulations has been minor. However, the present price increase of EU allowances increases the financial effect. Due to increased production volumes and an annual reduction of free allowances, the need to procure allowances is likely to increase up to 2020. For 2019 and 2020 Hydro's annual EU ETS compliance cost has increased and is expected to increase due to reduced free allocation and higher CO₂ prices.

Rolling operations are also covered by the rules and are allocated allowances free of charge based on an energy efficiency benchmark. Hydro is close to, or within, the benchmark values for its remelting activities.

Our primary aluminium production is presently most exposed to indirect EU ETS costs. To mitigate risk of carbon leakage due to indirect CO₂-costs, EU allows for national compensation of these costs.

Up to 2020 and except for Sør-Norge Aluminum AS (Husnes), Hydro's fully owned Norwegian smelters do not qualify for indirect carbon cost compensation, as, according to the Norwegian regulations, Hydro's power sourcing (self-generated power and old sourcing contracts entered into prior to implementation of the ETS scheme) does not expose those smelters to increased electricity price due to the introduction of ETS.

The EU is in a process of finalizing the EU ETS for the 2021-2030 period, with the trilogue agreement reached between the Parliament, EU Member States and the EU Commission on November 9 2017. The agreement gives additional safeguards to European industry with extra protection against the risk of carbon leakage, likely granting 100 percent free allowances up to sector's benchmark level for our direct emissions. Further, the Agreement allows Member States to grant partial compensation in accordance with State Aid rules after 2020. The Commission has started the process of updating the State Aid Guidelines for the period 2021-2030.

The Paris Agreement reached in December 2015, committed all the 197 signatory nations to keep the increase in the global average temperature "well below 2°C", pursuing 1.5°C, by each signatory nation committing to do their best effort to reduce emissions. Further the Agreement requires a peak in greenhouse gas emissions as soon as possible and "Climate neutrality" by 2050-2100. Such efforts could expose Hydro to additional costs in the various countries it operates.

Trade and Tariffs

Trade policy has a growing impact on Hydro's business both within the political and strategic agenda (regional and bilateral Free Trade Agreements, WTO framework, EU trade policy, US unilateral trade actions etc.) as well as more local factors like tariffs, anti-dumping and other trade measures. An escalation of trade measures between large economies might impact overall GDP.

EU duty rates on imports are 4 percent on the import of alumina, 3 percent on primary unalloyed aluminium, 6 percent on alloyed aluminium, (except import duty for alloyed rolling slabs and alloyed extrusion billets which are 4 percent), and 7.5 percent on the import of the majority of semi-fabricated products. Aluminium metal produced in the EEA (Norway and Iceland) is exempted from any such duty in the EU. There are also import duties on primary and semi-finished products in other material markets for Hydro.

The EU are negotiating bilateral free trade agreements with various third countries of interest to Hydro, which might, in time, lead to the elimination of aluminium tariffs with these countries. In the EU negotiation-pipeline there are finalized agreements with Vietnam and Mercosur countries (including Brazil) which are up for ratification, and ongoing negotiations with Indonesia, Australia and New Zealand, among others.

The EU also has in place anti-dumping duties on some aluminium products like foil, wheels and radiators, mostly on import from China.

In June 2018, the US administration imposed a tariff of 10 percent on all aluminium imports except imports from Australia. In June 2019, Mexico and Canada were also granted exemptions. The long-term effects of US unilateral trade actions are uncertain and could have a negative impact on Hydro's business.

Energy – regulation and taxation

The Norwegian regulatory system for hydropower production

The ownership and utilization of Norwegian waterfalls for i.e. hydropower production, other than small-scale power production, requires a concession from the Ministry of Petroleum and Energy. According to legislation passed in 2008, new concessions may no longer be granted to private entities such as Hydro. Moreover, private entities may not acquire nor own more than one-third of the shares or interests in companies that own hydropower plants.

Our waterfall rights and hydropower plants in Norway were acquired and developed under previous legislation that allowed for private ownership. Approximately one-third of our normal annual production in Norway - about 3 TWh per year - was acquired before concession laws were enacted and does not contain any compulsory reversion to the Norwegian state. About two-thirds of our normal annual production, or 6 TWh per year, is subject to concessions granted at the time the waterfall rights were acquired. Such power plants operate under concession terms of Norwegian state reversion, with individual concessions expiring in two main parts around 2022 and 2050. Hydro's power plants at Røldal-Suldal, with a

normal annual production of 3.0 TWh, will be the first significant production facilities to revert to the Norwegian state towards the end of 2022. Reversion to the Norwegian state can be avoided if the power plants, or two-thirds or more of the shares of the entity that owns the power plants, are sold to a public entity prior to reversion.

Bauxite and Alumina

– regulation and taxation

Environmental Regulation

Our operations in Brazil are subject to strict environmental regulations and license requirements. Particular regulations apply to our operations in the Mineração Paragominas S.A. (Paragominas) mine, due to its location in the Amazônia region.

One such regulation, known as the “Environmental Legal Reserve” requires that 80 percent of a rural property with native forest in the Amazônia region must be preserved, which means that a mine in the region cannot be developed without a sustainable forest management plan in accordance with the regulation. However, in Paragominas the legislation has established 50 percent as minimum requirement for legal reserve. Administrative servitudes (mining servitudes) are not included in the calculation for the legal reserve.

The practical implication is that for each rural property where Paragominas has current or planned mining operations, the Environmental Legal Reserve must be complied with and approved by the Para state environmental agency SEMAS.

Under Brazilian environmental legislation, any activity that has the potential to pollute the environment must obtain an environmental license before the activity can start. Such licenses are generally granted by SEMAS unless the activity is subject to the Federal environmental agency (IBAMA). It is common that licenses granted are subject to a number of conditions to ensure regulatory compliance or to mitigate effects of the operations on the environment or local communities.

Each of our Brazilian operations currently hold several environmental licenses, including environmental installation licenses for respective construction and expansion phases, and environmental operational licenses for their ongoing operations.

Greenhouse gas emissions

In 2009, Brazil addressed its national policy on climate change through a federal law which set out ambitious voluntary targets for reducing greenhouse gas (GHG) emissions until 2020 – most of which has already been achieved. In the end of 2015 Brazil has submitted even more ambitious targets (37 percent cut in GHG by 2025 and 43 percent until 2030 compared to 2005 levels) during the United Nation Climate Change Conference in Paris. Since 2010 authorities have been developing sectoral plans to cut emissions and discussions continue regarding a sectoral plan for the aluminum industry, which currently follows a general plan developed in a cooperation agreement between the Ministry of Environment, the Ministry of Development, Industry and Foreign Trade and the National Confederation

of Industry signed in 2012. The current plan has an ambition of reducing greenhouse gas emissions by 5 percent by 2020 compared to a “business as usual” scenario of projected emissions.

In November 2019, the Brazilian government established a National Commission to coordinate, monitor and review emission reductions through mitigating deforestation and forest degradation (National REDD+).

Mining regulation

Exploration of minerals requires an exploration license from the federal mining agency. The license grants an exclusive right to explore an area, subject to several requirements including compensation to the land owner and payment of an annual exploration fee to the ANM. Currently, the annual exploration fee is BRL 3.42 per hectare for the initial term of the license, and BRL 5.13 per hectare for any renewal periods.

If the exploration identifies viable resources, a mining concession is granted by the Ministry of Mining and Energy. The concession includes an obligation to pay royalties to the government and landowners. For bauxite mining, sales royalties are calculated based on gross revenue derived from sales of minerals after certain tax deductions. Consumption royalties are calculated based on the market price or the reference price defined by the federal mining agency. Government royalties on bauxite amount to 3 percent and are allocated between local (currently 60 to 75 percent), state (currently 15 to 30 percent) and federal governments (currently 10 percent).

In December 2018, amendments to the Brazilian Mining Code came into force. The new framework aims at fostering competition in the mining industry and introduces internationally established concepts such as mineral resources and reserves. The rules are further targeted at avoiding the indefinite validity of exploration licenses, e.g. in case of lack of activity from the mining right holder, and improving regulation on current industry issues, such as (re)use of tailings and industrial waste.

The mining sector is overseen by the National Mining Agency (ANM) which is responsible for implementing guidelines, directives and policies for the legal mining framework.

Recent major incidents in Brazil (e.g. Samarco and Vale) have increased public awareness and pressure towards authorities and politicians to impose further and stricter regulations and monitoring of the mining industry. In 2018/19 new and stricter requirements were implemented in particular addressing construction, safety and monitoring of mining tailing dams.

Taxation in Brazil

In Brazil, the tax system is complex and volatile, with a broad range of direct and indirect taxes levied at the federal, state and municipal levels. Over the past several years, state finances in Brazil have deteriorated, which could lead to mounting pressure to increase tax revenues. Brazilian tax authorities generally take an aggressive approach in tax audits, giving rise to a large number of tax disputes, which tend to take a very long time until finally resolved. The general income tax rate in Brazil is up to 34 percent of net income.

Federal value added tax (PIS/COFINS) is charged on sales at a rate of 9.25 percent. Buyers are entitled to PIS/COFINS tax credits of 9.25 percent on purchases of relevant input factors (except for import of goods, which is 11.75 percent), which may be used to offset PIS/COFINS or federal income tax liabilities. Exports are exempt from PIS/COFINS. Because most of Hydro's production in Brazil is exported, we accumulate tax credits. Obtaining cash refunds of tax credits is complex and can take substantial time.

ICMS is a value added tax charged by Brazilian states on circulation of goods, energy and services. ICMS tax rates vary from 7 to 25 percent and the tax base is the gross value of the transaction, including ICMS. Brazil has a general ICMS exemption on exports. Hydro's main operations in Brazil are located in the state of Pará, which has historically granted a deferral of the collection point for ICMS on certain goods and services. In 2015, the state of Pará granted a renewal of the ICMS deferral regime for Hydro Paragominas, Hydro Alunorte and Albras for a 15-year period. With this regulation, the companies are not entitled to book ICMS credits and the deferred ICMS tax is not due on the exports of goods. This regime is subject to several conditions which Hydro must comply with on an ongoing basis concerning verticalization of the aluminium value chain in Pará, contribution to development in the region and enabling sustainable growth in Pará. The ICMS deferral is subject to approval by Brazil's National Council of Finance Policy (CONFAZ). In 2018 Public Auditing Prosecutors for the State of Para (MP-C/PA) initiated a general process before the State Accounting Court to better understand approvals, compliance and transparency of tax incentives established by the State of Para. A discontinuation of the ICMS deferral would materially adversely affect Hydro's operating results from its Brazilian operations.

Taxation

Global Tax Policy

A publicly available (www.hydro.com) Global Tax Policy elaborates on global framework for management and governance of taxes in the Hydro Group. In brief, management of taxes shall be performed in line with local laws and regulations, OECD transfer pricing guidelines as well as corporate governance such as Code of Conduct and The Hydro Way. Hydro is also committed to an open and transparent relationship with the Tax Authorities as well as to operate under a principle of openness when dealing with other interested parties outside Hydro and society at large.

Taxation of hydropower production in Norway

Profits from Hydro's hydropower production in Norway are subject to ordinary income tax at 22 percent for the income year 2019. Revenue for ordinary income tax purposes is based on realized prices. Dams, tunnels and power stations are, for tax purposes, depreciated on a linear basis over 67 years, and machinery and generators over 40 years. However, such fixed assets are depreciated over the concession period if that is shorter. Transmission and other electrical equipment are depreciated at a 5 percent declining balance.

A natural resource tax of NOK 13 per MWh is currently levied on water-generated electricity. The tax is fully deductible from the ordinary income tax.

In addition, a special resource rent tax, at 37 percent for the income year 2019, is imposed on hydropower production in Norway. Unlike the ordinary income tax, financial costs are not deductible against the basis for the resource rent tax. Uplift is a special deduction in the net income, computed as a percentage of the average tax basis of fixed assets (including intangible assets and goodwill) for the income year. The percentage, which is determined annually by the Ministry of Finance, essentially provides for a certain return on fixed assets above which income becomes subject to the resource rent tax. The percentage used to calculate the uplift for 2019 was 1.2 percent.

Revenue for resource rent tax is, with certain exceptions, calculated based on the plant's hourly production, multiplied by the area spot price in the corresponding hour. However, revenues from sales under certain long-term contracts are valued at contract price. Revenues from power supplied to Hydro's own industrial production facilities is based on the average contract price in long-term power supply contracts delivered to Hydro.

Taxation in Brazil

In Brazil, the tax system is complex and volatile, with a broad range of direct and indirect taxes levied at the federal, state and municipal levels. Over the past several years, state finances in Brazil have deteriorated, which could lead to mounting pressure to increase tax revenues. Brazilian tax authorities generally take an aggressive approach in tax audits, giving rise to a large number of tax disputes, which tend to take a very long time until finally resolved. The general income tax rate in Brazil is up to 34 percent of net income.

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approval by Brazil's National Council of Finance Policy (CONFAZ).

Other information

As a public limited company organized under Norwegian law, Hydro is subject to the provisions of the Norwegian Public Limited Companies Act. Our principal executive offices are located at Drammensveien 260, Vækerø, N-0240 Oslo, Norway; telephone number: +47 2253 8100. Hydro's internet site is www.hydro.com



Performance and targets

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- 75 Driving sustainability
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Quick overview

In 2019, Hydro launched a new strategic agenda aimed at lifting profitability and driving sustainability in order to increase and drive long-term value for our stakeholders and contribute to a viable society.

Hydro's financial priorities are to create long-term shareholder value by delivering on the capital return target of 10 percent over-the-cycle supported with clear priorities for capital allocation, while at the same time maintaining a strong balance sheet and ensuring a robust shareholder payout. In the shorter-term, Hydro aims to lift cash flows towards 2023 by supporting earnings with the improvement ambition of NOK 7.3 billion, releasing cash with capex and net operating capital optimization, and addressing Rolled Products underperformance with strategic review and restructuring.

Our future profitability depends on our ability to operate sustainably. We have quantified a set of ambitions towards 2030 to improve our performance on climate, environment and social responsibility. By reducing risk, emphasizing safety in our operations, improving relations with stakeholders and neighbours, increasing resource efficiency, reducing our own emissions and developing new markets, Hydro's business will be more robust. Complying with laws, regulations, Hydro's steering documents and respecting human rights, is fundamental to Hydro's way of working and are considered key elements to the company's license to operate.

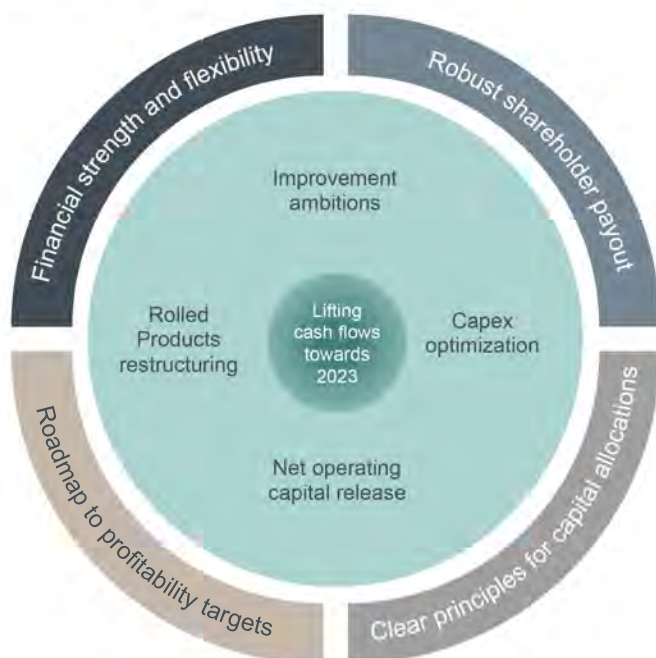
Lifting profitability, driving sustainability

In 2019 Hydro launched a new strategic agenda aiming to lift cash flows and returns with extensive improvement and restructuring efforts across its business areas, while highlighting sustainability as a basis for the company's positioning. To ensure long-term value creation, Hydro has defined four key financial priorities to drive capital and shareholder returns, and at the same time identified four short-term financial targets aiming to lift cash flows towards 2023.

Supported by an increasing interest from the regulators, customers and financial markets, Hydro firmly believes that leading in sustainability is a strong foundation for long-term license to operate and a key driver for long-term profitability. By emphasizing climate, environment and social responsibility, as well as by developing greener product offerings, Hydro will reduce risks and create new profitable opportunities for the future.

The new agenda "Lifting profitability, driving sustainability" has replaced Hydro's previous strategic targets reported under the Better-Bigger-Greener umbrella. A summary status of the Better-Bigger-Greener program is included at the end of this chapter.

Financial priorities and targets



Lifting profitability

Financial priorities

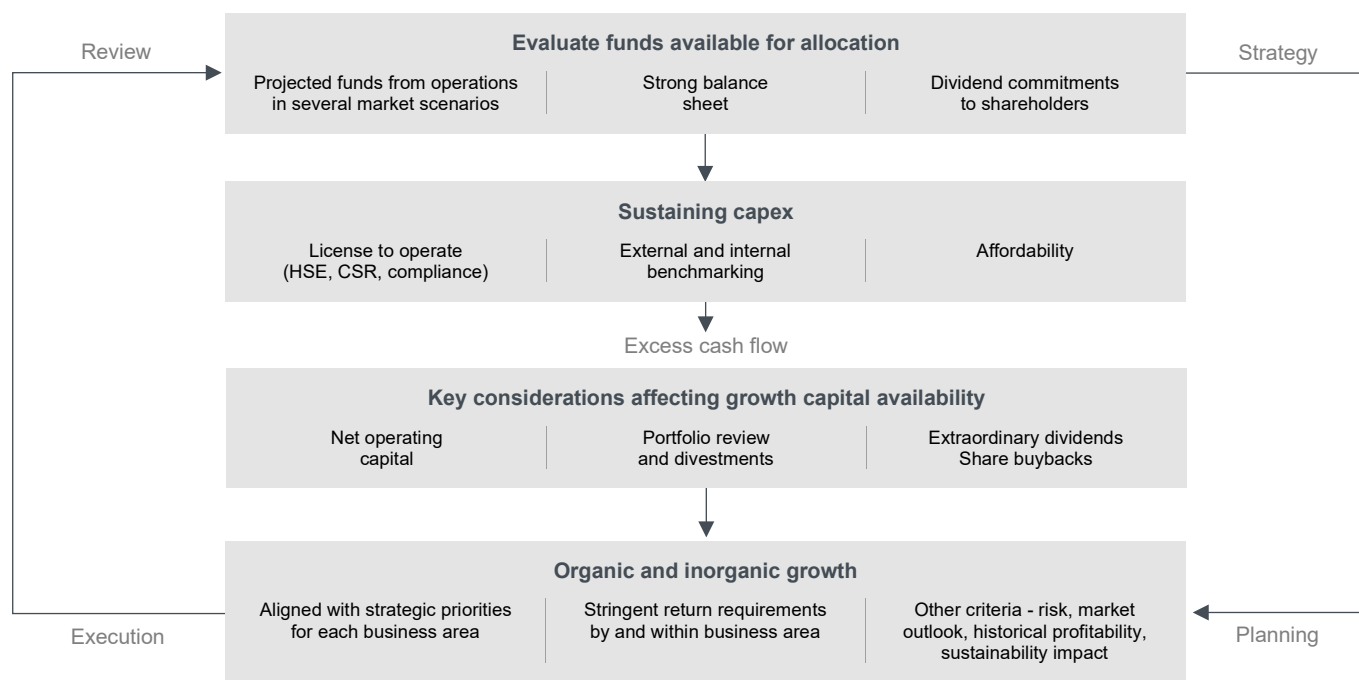
The first of the four financial priorities is to maintain a robust balance sheet, strong liquidity and to maintain an investment grade credit rating. Hydro considers this crucial in order to navigate industry cycles and to be able to invest also during cyclical downturns. Hydro's management follows two key financial ratios as indicators of the balance sheet strength: funds from operations to adjusted net cash (debt), with a target to stay above 40 percent over the cycle, and adjusted net cash (debt) to equity, with a target to stay below 55 percent over the cycle.

Second, Hydro aims to offer a predictable dividend and a satisfactory yield for shareholders. The ambition is to pay out 40 percent of reported net income to majority shareholders over the cycle, with a dividend floor of NOK 1.25 per share. Hydro may evaluate share buybacks and additional dividends with due consideration given to the alternative investment opportunities, financial situation and earnings outlook.

Third, Hydro has established clear priorities and guidelines for capital allocation. This is critical in order to deliver on the company's strategic direction and may be an important differentiator for the long-term financial performance. The strategy is to allocate more growth and return-seeking capital to the areas with increased value generation potential going forward, both from a profitability and sustainability perspective. Historic returns on investments, earnings volatility, differentiation potential, and improved sustainability position will play a key role in the allocation process. All the business areas have been grouped into different strategic modes. The focus in Bauxite & Alumina and Primary Metal is to sustain and improve the current asset base, with the possible exception of growth initiatives within recycling. Extruded Solutions and Energy are in selective growth mode, while the focus in Rolled Products is on the strategic review and restructuring. The principles for capital allocation are described in the figure below.

Finally, Hydro has launched a target to achieve an underlying return on average capital employed of 10 percent over the cycle compared to the group long-term nominal cost of capital of 9 percent. Both the cost of capital and the corresponding return requirements are differentiated for each business area with the ambition to achieve an underlying return on average capital employed above the respective cost of capital. Nominal long-term cost of capital for business areas reflects the risk and volatility of earnings and cash flows. For more cyclical upstream divisions – Bauxite & Alumina and Primary Metal – it is set to 10-11 percent, for the downstream divisions with more stable earnings profiles – Extruded Solutions, Rolled Products and Metal Markets – it is 7-8 percent, while in Energy it is 6-7 percent reflecting a relatively low risk and low earnings volatility.

Clear principles for capital allocation



Financial targets

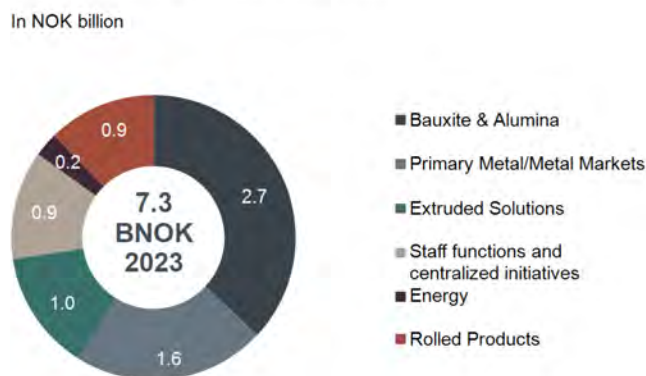
To address the recent performance challenges as well as the weakening market outlook, Hydro has identified four areas to support cash flow generation potential. Within the 2023 horizon, Hydro has launched a new and ambitious improvement program, has initiated a strategic review and restructuring of the Rolled Products business, as well as strengthened focus on optimizing the capex profile and releasing net operating capital.

Improvement ambition

The business areas have defined improvement ambitions for the years 2019-2023.⁷ The consolidated accumulated improvement target for 2023 amounts to NOK 7.3 billion, reflecting the sum of potentials in the business areas in addition to the improvement initiatives within staff and support functions (Fit4Future) and procurement projects. Out of this total, NOK 2.7 billion is related to reversal of curtailment effects in Brazil, of which NOK 2.0 billion in Bauxite & Alumina and the remainder in Primary Metal. Around 80 percent of total improvements or NOK 5.8 billion are expected to be delivered in 2019-2021.

The Bauxite & Alumina improvement program mainly focuses on ramping-up production at Alunorte and Paragominas. The target is to produce at an average capacity utilization of 90-95 percent at Alunorte in 2020, reaching full capacity utilization of 6.3 million tons during 2020. Other elements include optimization of the energy mix as well as fixed costs reduction.

Improvements by business area



Primary Metal target improvements across many categories, including creep (increased production volume) through debottlenecking, spin-offs from the Karmøy Technology Pilot, digitalization of processes through soft sensor technology, advanced analytics, automation and other fixed cost reductions. The restart of Husnes line B is also included in the program, with first metal expected in the first half of 2020.

Improvements in Rolled Products are to be achieved by lifting organizational and operational efficiency as well as shifting the product portfolio towards growth markets like automotive and beverage can. Initiatives include closure of

⁷ The programs use 2018 as the baseline year for, e.g., operational parameters and production. As market conditions and prices in 2018 were heavily

influenced by the Alunorte situation, LME, PAX, raw materials and exchange rates have been based on a 3-year average (2016 – 1H-2018).

two foil lines in Grevenbroich, Germany and demanning of 735 full time equivalents (FTEs).

Extruded Solutions' EBIT improvement target reflects initiatives related to operational improvements and fixed costs optimization, portfolio review and restructuring, commercial optimization, and a continuation of the value-over-volume strategy.

Improvements in Energy include growth in wind power in the Nordics and storage investments, such as batteries, as well as continued emphasis on operational and commercial optimization.

The NOK 0.5 billion Fit4Future program aims at increased efficiency within staff and support functions across Hydro, of which Global Business Services (GBS), and in particular information systems, are to deliver most of the gains. Manning reductions represent around one third of the total cost savings. In addition, Hydro is targeting procurement savings of NOK 0.4 billion related to several initiatives within supplier management, demand and specification management and process management.

Rolled Products strategic review and restructuring

Hydro has initiated a strategic review and restructuring of the business area to mitigate the declining profitability and the inability of the business area to meet capital return targets in recent years. The ongoing strategic review aims to evaluate the optimal ownership set-up for Rolled Products.

Optimizing capital allocation

Ensuring disciplined capital allocation is key to deliver on return requirements, with growth projects to be aligned with strategic priorities, and sustaining capex to be maintained at competitive and affordable levels. Sustaining capex for 2019 and 2020 combined is estimated at around NOK 12.5-13.5 billion, representing around NOK 1 billion reduction compared to the previous guidance for the same period. The reduction represents short-term optimization, while further measures to ensure long-term competitive sustaining capex are under review. Total capex for 2019 and 2020 is estimated at around NOK 19 -19.5 billion. For the longer-term period of 2021-2023 current investment plans add up to an average of 9.5-10 BNOK per year, of which NOK 7.0 billion in sustaining capex⁸. Furthermore, potential projects will be continuously reviewed based on the updated capital allocation framework and aligned with Hydro's strategic priorities. The main projects requiring sustaining capex in the period 2019-2023 include investments in Alunorte robustness, opening of a new mining area in Paragominas, pipeline replacement in Bauxite & Alumina, and smelter relining and asset integrity in Primary Metal. The main growth and return-seeking projects in the same period include Husnes restart and upgrade, selected customer-driven growth in Extruded Solutions, wind and battery storage investments in Energy, the fuel switch project in Bauxite & Alumina, as well as automation, process control and efficiency initiatives in Primary Metal.

Capex 2019-2023



Net operating capital release

Reflecting the increased focus on cash generation, optimizing net operating capital is a top priority. In 2018 Hydro built up more than NOK 5 billion in net operating capital leading to an increase in the number of NOC days from 53 at the end of 2017 to 64 at the end of 2018. The main reason for the build-up was related to higher raw material inventories in several business areas as a result of the highly uncertain geopolitical and market environmental, including free trade concerns as well as Rusal sanctions, in addition to the Alunorte situation, and a number of other operational issues. Higher prices reflected in the inventories also contributed negatively. As most of the reasons behind the inventory build have now been resolved, Hydro has targeted to release around NOK 4 billion in tied up capital by the end of 2020, which corresponds to a reduction of 12 NOC days, based on 2017 revenues. The main initiatives to reach the target include high focus on inventory reduction in all business areas, optimizing material flow from raw materials to finished goods, establishing benchmarking tools and regular follow-up procedures, and tight collaboration between sales and metal purchasing.

Financial performance review

Status on financial priorities

Hydro maintains its focus on *financial strength and flexibility* with the goal to remain investment grade credit rated. Currently, Hydro has a BBB rating (stable outlook) with S&P Global and a Baa2 rating (negative outlook) with Moody's. Moody's changed the outlook from stable to negative in March 2019, mainly due to the uncertainty related to the Alunorte situation, weak market conditions and weaker cash generation compared to previous years. Both key financial ratios used as indicators of the balance sheet strength have deteriorated in 2019 mainly reflecting weak earnings. Funds from operations to net adjusted debt were 27 percent, below the over-the-cycle target of above 40 percent. Adjusted net debt to equity ended up at 37 percent, well within the targeted level of less than 55 percent. For further details, see

⁸ Growth and return-seeking capex guidance only includes capex necessary for delivering on targeted improvement ambitions

Note 7.1 Capital management to the consolidated financial statements.

In order to ensure strong liquidity, Hydro has replaced the NOK 1.7 billion undrawn revolving credit facility that expired in 2019 with a new NOK 1.6 billion facility expiring in 2025. The margin on the new facility is linked to Hydro's CO₂ emission reduction target, thereby linking financing costs to the progress on Hydro's main climate target and highlighting the important connection between sustainability and profitability.

Reflecting Hydro's *strong shareholder focus* and in line with the shareholder policy, Hydro's Board of Directors proposed an annual dividend of 1.25 NOK per share for 2019⁹. This represents an average five-year payout ratio of 68 percent compared to the policy of 40 percent over the cycle, and a dividend yield of 3.8 percent at the end of 2019.

Underlying return on average capital employed was 1.3 percent in 2019, significantly below the ambition to deliver 10 percent over the cycle, as a result of the Alunorte situation and the cyber attack, challenging markets, as well as several operational issues. Over the last five years, underlying return on average capital employed averaged 6 percent with high volatility in the returns reflecting that 60 percent of capital is allocated into cyclical upstream businesses. For more information on the returns on average capital employed, see the Alternative performance measures (APMs) section in the Appendices to the Board of Directors' report.

Return on average Capital Employed (RoACE)

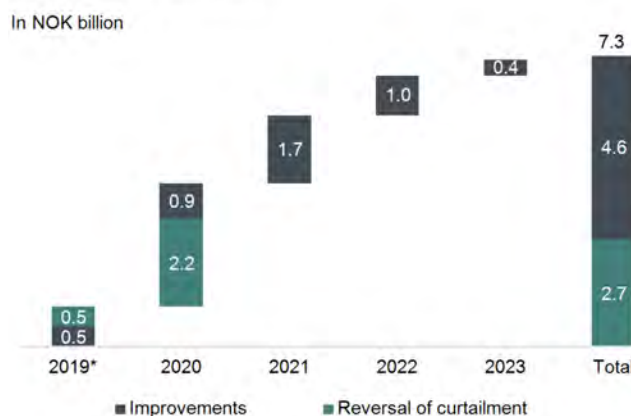
	Reported		Underlying	
	2019	2018	2019	2018
Hydro	(0.9) %	6.0 %	1.3 %	6.6 %
Business areas ¹⁾				
Bauxite & Alumina	1.9 %	4.6 %	2.5 %	6.0 %
Primary Metal	(3.9) %	5.6 %	(2.6) %	4.7 %
Metal Markets	20.7 %	25.1 %	27.3 %	19.4 %
Rolled Products	(5.0) %	1.9 %	2.4 %	2.3 %
Extruded Solutions	3.8 %	5.3 %	5.7 %	7.2 %
Energy	14.7 %	19.4 %	12.9 %	18.8 %

1) RoaCE at business area level is calculated using 25% tax rate. For Energy, 80% tax rate is used in 2019, 70% in 2018. 2018 RoaCE has been restated due to the change in definition.

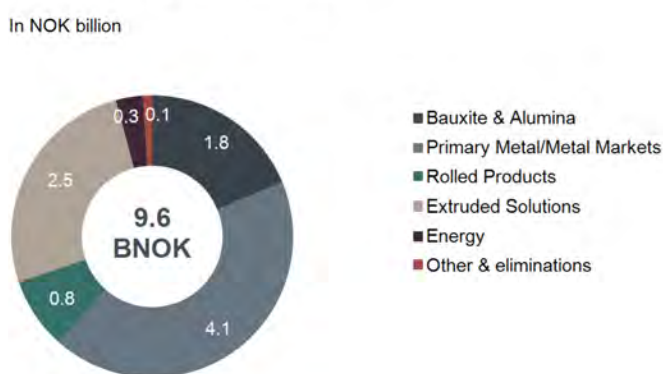
Status on financial targets

In 2019 Hydro realized 1.0 BNOK in *improvement efforts*, well above the target of NOK 0.5 billion for the year, primarily due to faster than expected ramp-up at Alunorte, reaching 90 percent capacity utilization already in Q4 2019. On the contrary, despite significant restructuring efforts and cost reduction initiatives across the operations, Extruded Solutions delivered below their targeted level for the year, due to a weaker market demand, affecting their Net EBIT improvement program. Extruded Solutions still expect to deliver their NOK 1 billion improvement ambition by end 2023. Primary Metal, Rolled Products, Energy as well as staff and services and procurement initiatives realized limited improvements in 2019, in line with the targets.

Improvement program



Total capex by business area



Total *capex* in 2019 ended up at NOK 9.6 billion, NOK 0.9 billion below the guided level of NOK 10.5 billion, with sustaining capex at NOK 6.2 billion compared to the targeted level of NOK 6.5-7 billion. The reduction is mainly due to postponement of projects into 2020. In the meantime, the work is ongoing to identify further capex reduction potential in the coming years.

Every year capex includes regular maintenance activities needed to safeguard Hydro's production assets in every business area. Examples include smelter relining in Primary Metal and Rolled Products, power plant rehabilitation and upgrades in Energy, various upgrades of presses in Extruded Solutions and remelters in Metal Markets. In addition to those, Bauxite & Alumina accounted for a large share of sustaining investments in 2019. These were related to commissioning of the state-of-the-art press filter technology for processing of bauxite residue, the new solid residue deposit area DRS2 at Alunorte and the new dry residue deposit area at Paragominas. Alunorte also invested in the wastewater handling and treatment systems as well as strengthening of the infrastructure related to water management at the refinery. The main growth and return-seeking capex was related to the Husnes smelter upgrade and restart in Primary Metal, selective growth investments in Extruded Solutions, including acquisitions of strategic assets, and further growth investments in wind and storage

⁹ Pending approval from the AGM on May 11

solutions in Energy. Further, Hydro continued to strengthen its recycling position, and expanded production capacity of the CIRCAL greener product brand. Growth capex also included finalization of the growth projects, such as the Karmøy technology plant in Primary Metal, the recycling line for used beverage cans and the new automotive production line in Rolled Products.

Hydro released NOK 5.6 billion of *cash-effective net operating capital* in 2019, well above the target of NOK 4 billion. All the business areas reduced their NOC with the biggest contribution from raw material and metal inventory reductions in Primary Metal and Metal Markets (NOK 2.8 billion) and Extruded Solutions (NOK 2.1 billion). Bauxite & Alumina and Rolled Products freed up NOK 0.9 billion and NOK 0.6 billion respectively. At the end of 2019, NOC days reached 60 days, representing a reduction of 4 days compared to 64 NOC days at the end of 2018. Weakening market conditions during the second half of 2019 led to falling revenues with a corresponding impact on NOC days.

Financial targets for 2020

In line with the 2023 financial targets, 2020 ambitions have been set for the improvement program, capital expenditures and net operating capital:

- The improvement ambition for 2020 is NOK 3.1 billion, including NOK 2.2 billion in curtailment reversal within Bauxite & Alumina and Primary Metal in Brazil.
- Reflecting NOK 0.9 billion in capex carried over from 2019, the capex target for 2020 is NOK 9.5-10 billion, of which sustaining capex is NOK 6.5-7 billion.
- Following the cash-effective NOC release of NOK 5.6 billion in 2019, ahead of the NOK 4 billion target by the end of 2020, Hydro aims to continue optimizing NOC level both in absolute terms and in NOC days. The achievement may be affected by the market developments as well as changes in the portfolio mix.

Driving sustainability

2019 Status and targets



Sustainability is an integrated part of lifting Hydro’s long-term profitability and the basis for our future positioning. By reducing our footprint, improving relations with stakeholders and neighbors, managing impacts, increasing resource efficiency and developing new markets, Hydro will reduce risk and create new opportunities.

Developing a more holistic approach to sustainability we have quantified a set of ambitions towards 2030 to improve our performance on climate, environment and social responsibility. We have new ambitions to reduce our own environmental impacts and emissions in production, developing greener products helping our customers design more sustainable solutions and continue with our ambition to make a positive difference by strengthening local communities and our business partners. We have established a new Corporate Development function to strengthen Hydro’s ability to drive the profitability and sustainability agenda.

The overarching goal of our new climate strategy is to reduce the impact our operations have on the global climate. The climate strategy – “30 by 2030” – calls for a 30 percent reduction of own greenhouse gas emissions throughout the aluminium value chain by 2030. We will do this through greener sourcing and greener production, that will reduce the footprint of the products we deliver to our customers.

The new environment strategy for 2030 addresses the industry’s key environmental challenges. Our goal is to mitigate emissions to land, water and air, conserve biodiversity and reduce waste production. To achieve this, we monitor, identify and reduce environmental risk throughout the lifetime of our operational sites. The

emphasis is primarily on continued rehabilitation at our bauxite mine in Para, Brazil, reducing our tailings and bauxite residue footprints, recycling our spent pot lining and halving our non-greenhouse gas emissions (SO₂, NO_x and Particulate Matter) to air.

We recognize that we can only succeed if communities and partners around us succeed. With our social responsibility strategy we aim to make a positive difference by strengthening our business partners and the local communities where we operate. To deliver on this, we will target the fundamental drivers of long-term development and will contribute to education and capacity building for 500,000 people by end of 2030. Community dialogue and stakeholder engagement is the foundation of our work.

In Hydro, we see diversity as a source of competitive advantage, as it encourages innovation, learning and better customer understanding. Through diversity and inclusion, we want all employees to know they are valued for their differences and that they contribute to the success of our business strategy.

Hydro’s new certified low-carbon product brands CIRCAL and REDUXA were launched in 2019, setting a new standard for low-carbon and recycled aluminium, to commercialize the company’s sustainability position. The initial customer feedback and subsequent orders have underlined the potential for these types of products that represent exciting opportunities moving forward. A new recycling line at our Azuqueca plant in Spain will be commissioned and ramped up during 2020. This, in combination with an upgrade at Clearvaux and the remelter Deeside, UK, will add up to 30,000 metric tonnes of post-consumer scrap recycling

capacity, increasing our total capacity from 175,000 metric tonnes per year at the end of 2019.

Our ambition is to prevent all injuries and ill health to avoid human suffering and we will work continually to avoid damage to property and loss of production. We continue to see high-risk incidents with a potential for fatality or permanent injuries or ill health, but at a lower level than previous years. We consider this the main leading indicator for our safety performance. From 2020, our emphasis will be the closing rate of actions related to high-risk incidents in our operations in 30 days.

Complying with laws, regulations, and Hydro's steering documents, and respecting human rights, is fundamental to Hydro's way of working and are considered key elements to the company's license to operate.

For a description of Hydro's policies, commitments, goals and targets, responsibilities, resources, grievance mechanisms related to sustainability, see Viability Performance and Viability Performance Statements. Hydro reports according to GRI, and the reporting is based on a materiality analysis.

Status on Better Bigger Greener

Summary of the Better-Bigger-Greener program

The Better-Bigger-Greener program was launched in 2015, and included a number of strategic targets for the period 2016-2025. A number of these targets were negatively impacted by the Alunorte curtailment in 2018-2019, including the improvement programs. The table below summarizes the targets and status per end 2019. The Better-Bigger-Greener program has been replaced by the new agenda "Lifting profitability, driving sustainability".

	Ambitions	Target	Timeframe	2019 progress	Comment
Better	Improve safety performance, strive for injury free environment	TRI<2 ¹⁾	2020	3.0 ²⁾	Replaced with a new target
	Realize ongoing improvement efforts Better	BNOK 3.0	2019	BNOK 0,7 ³⁾	Replaced with a new target
	Secure new competitive sourcing contracts in Norway post 2020	4-6 TWh	2020	4.8 TWh, completed	Completed
	Lift bauxite production at Paragominas	11.0 mill mt/year	2018	7,4 mill mt/year ³⁾	Included in the new improvement program
	Lift alumina production at Alunorte	7.0 mill mt/year	2021	4,5 mill mt/year ³⁾	Postponed
	Shift alumina sales to PAX-based pricing	>85% PAX ⁴⁾	2020	76% PAX ⁶⁾	Continued, on track
	Extend technology lead with Karmøy technology pilot Extend technology lead with Karmøy technology pilot	Start production Full ramp-up	2H 2017 Q2 2018	29-Jan-18 27-Jun-18	Completed Completed
Bigger	Realize technology-driven smelter capacity creep	200,000 mt/yr	2025	35,000 mt/yr ^{3), 4)}	Continued, subject to positive business cases 5)
	Increase nominal automotive Body-in-White capacity	200,000 mt/year	2017	Ramping up, qualifications ongoing	Included in the new improvement program
	Complete ramp-up of UBC recycling line	>40,000 mt/year	2017	Run-rate of 40 kmt/yr achieved in 2H 2019	Included in the new improvement program
Greener	Become carbon-neutral from a life-cycle perspective	Zero	2020	On track	Continued, on track
	Increase recycling of post-consumer scrap	>250,000 mt/yr ⁷⁾	2020	175,000 mt/yr	Continued, subject to positive business cases
	Deliver on reforestation ambition	1:1	Continuous	On track ⁸⁾	Continued

1) TRI, total recordable injuries per million hours worked, includes own employees and contractors. On the Group level, TRI has been replaced with High risk incidents (HRI) and fatality targets. However, TRI continues to be closely monitored in every business area.

2) The safety development in 2019 includes one fatality in Qatalum JV

3) Target impacted by the Alunorte situation with 50% production embargo at Alunorte from March 2018 to May 2019 and the corresponding curtailments at Paragominas and Albras

4) Progress excluding Albras. 2019 creep offset by the negative effects from the power outage in Karmøy and inefficiencies caused by different alumina qualities due to increased external alumina sourcing on Alunorte curtailment.

5) Production creep achievements included in the new improvement program

6) Based on sourcing volume of ~ 2.8 million mt for 2019

7) While based on a commercial evaluation we see that the recycling target originally set for 250,000 mt/year of post-consumer scrap by 2020 will not be met, we continue to develop recycling capacity that can be used for post-consumer scrap as well as for process scrap.

8) 1:1 rehabilitation of areas available for rehabilitation within two hydrological seasons after release. Revised definition of target takes into account the nature of the mining cycle and the time lag necessary to ensure quality rehabilitation to restore biodiversity



DZ12W High speed

QRS

KUKA

2

2.2

1.2

+2

Viability performance

79	Viability – The Hydro Way
81	Energy and climate change
83	Environmental impact management
87	Integrity and compliance
91	Human rights and community impact
97	Organization and work environment
100	Innovation and design thinking

Quick overview

This chapter includes relevant information related to Hydro's approach to environmental and social performance as well as innovation and design thinking.

More quantitative information is included in the Viability performance statements later in this report. It consists of Hydro's environmental and social statements with notes.

We have an integrated approach to our reporting, and our Viability performance should be seen in context with the other parts of Hydro's Annual Report 2019.

Hydro reports in accordance with the GRI Standards' "Core" option. Please see our GRI index at www.hydro.com/gri

Viability - The Hydro Way

The Hydro Way is our approach to business. It's an approach that has lived within Hydro since 1905 and guided our development over the years. The Hydro Way originates from our company's identity – our unique set of characteristics – and constitutes a way of doing things that differentiates us from other companies. As part of the integration of Extruded Solutions following the acquisition of Sapa in 2017, The Hydro Way was updated in 2018 to better reflect the new identity of the company.

The Hydro Way explains how we run our business through:

- Our purpose
- Our values
- Our operating model

These principles help us set priorities and serve as a reference point when questions arise. Our purpose is supported by our values and defines how we conduct our business:

Hydro's purpose is to create a more viable society by developing natural resources into products and solutions in innovative and efficient ways.

In order to ensure a uniform high standard, Hydro's constituting documents and global directives lay down requirements for our operations, see page 123.

All elements of Hydro's viability performance are integrated in Hydro's overall group strategy. In addition, we have specific support strategies e.g. on climate change, environment and people - as described in this section.

Hydro has been listed on the Dow Jones Sustainability Indices (DJSI) each year since the index series started in 1999. We are also listed on the corresponding UK index FTSE4Good, and the UN Global Compact 100 stock index.

MEMBER OF
Dow Jones
Sustainability Indices
 In Collaboration with RobecoSAM



Our reporting approach

We have based our viability reporting on The Hydro Way since 2004. Together with risk analysis and an extensive stakeholder dialogue we have defined the main elements of our reporting:

- Energy and climate change
- Environmental impact management
- Ensuring a culture of compliance and integrity
- Human rights and community impact
- Organization and work environment
- Innovation and design thinking

We use the GRI Standard 101 (2016) in defining which lower-level topics and indicators that are material to report upon. The analysis is also based on our continuous stakeholder dialogue with key stakeholders and collected and evaluated by relevant specialists and leaders. The materiality analysis is updated annually, to reflect internal and external developments, and approved by Hydro's Corporate Management Board.

The most material aspects related to our viability performance are all included in the Board of Directors' report, which gives a high-level overview of Hydro's strategic direction, strengths and challenges. This information is further elaborated in other parts of this annual report and in the GRI index at www.hydro.com/gri

The information has been reviewed by Hydro's Corporate Management Board, which has also approved this annual report. The board of directors has approved the complete Board of Directors' report including the country-by-country report and the UK Modern Slavery Act transparency statement. Read more about our reporting principles and materiality process on page 221.

The Viability performance section should be read in context with the other parts of the annual report, in particular:

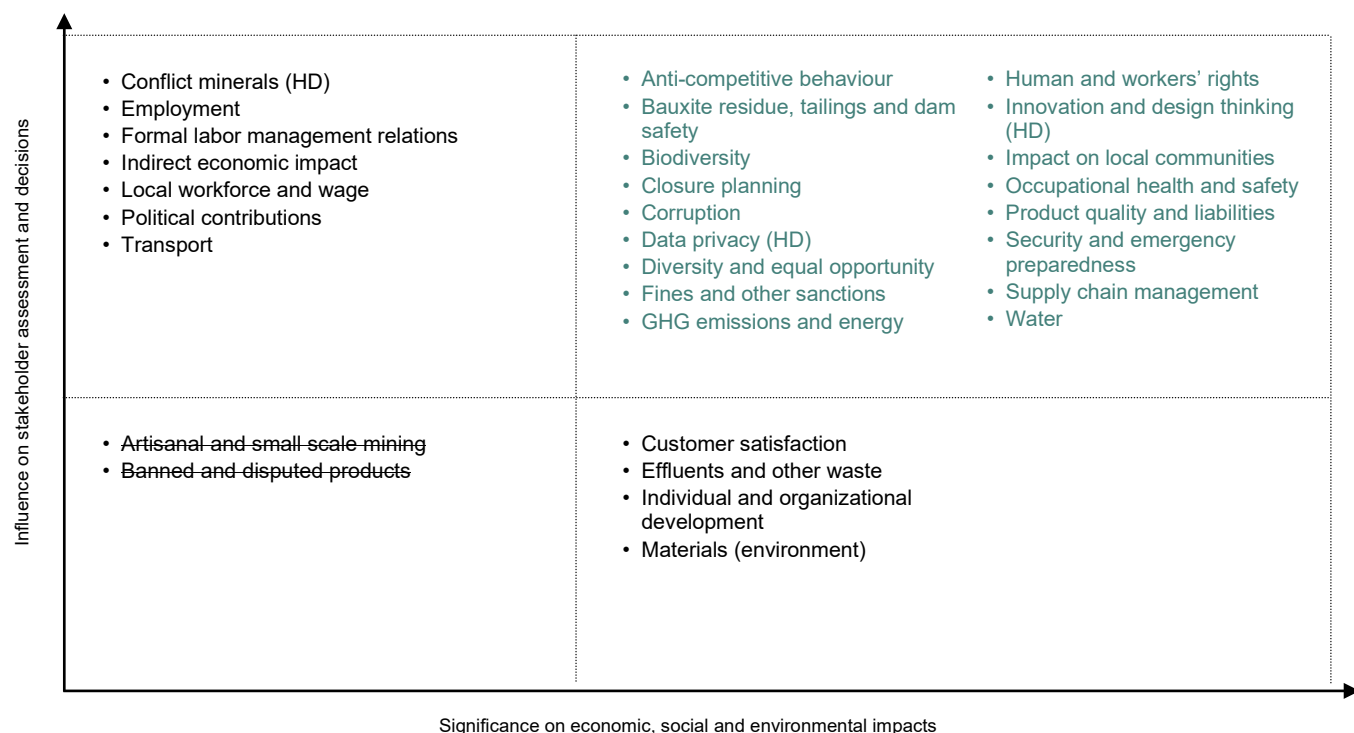
- Letter to shareholders on page 8
- Board of Directors' report on page 12
- Business description on page 35
- Performance and targets on page 69
- Risk review on page 105
- Corporate governance on page 122

In 2019, Hydro launched a new strategic agenda aiming to lift cash flows and returns with extensive improvement and restructuring efforts across its business areas, while highlighting sustainability as a basis for the company's positioning, see more on page 69. This has succeeded the Better, Bigger, Greener program launched in 2016, see page 102 for a status on the mid-term strategic goals linked to this program.

The underlying details in the reporting are based on different reporting frameworks that are important to us, including the UN Global Compact, the GRI Standards, the International Council on Mining and Metals' (ICMM) 10 principles and Position Statements and the Aluminium Stewardship Initiative's (ASI) 11 principles and underlying criteria. The GRI index at www.hydro.com/gri also shows Hydro's adherence to the UN Global Compact, ICMM and how we relate to ASI, UN Sustainable Development Goals and UN Guiding Principles on Business and Human Rights - and shows how the different frameworks connect with each other.

Hydro's materiality analysis 2019

Topics are prioritized in four quadrants, but not prioritized internally in each quadrant



The matrix is based on the GRI Standard 101 Foundation 2016 and has been approved by Hydro's Corporate Management Board. The green topics represent those that are most material to Hydro, while topics that are strikethrough, are considered not material. We have chosen to merge and rename certain aspects in the matrix to make the titles more relevant to Hydro and thus also more intuitive to our stakeholders. An overview of these changes can be found on www.hydro.com/gri

The main changes compared to 2018 are:

- The topic "Effluents and waste" has been renamed "Effluents and other waste" and classified as material topic
- "Tailings and dam safety" were added to most material topics, and merged with waste and renamed "Bauxite residue, tailings and dam safety"

Topics marked (HD) are defined by Hydro in addition to the GRI defined topics.

Energy and climate change

Alumina refining and electrolysis of primary aluminium are energy-intensive processes, and constitute the majority of Hydro's greenhouse gas (GHG) emissions. The energy source is a decisive factor on relative as well as total emissions. On the other hand, aluminium can save significant amounts of energy and GHG emissions in the use phase.



Climate change

Hydro launched a new climate strategy towards 2030 in 2019, as our carbon neutral strategy is coming to an end in 2020. Hydro's overarching ambition towards 2030 is to reduce the global climate impact of our value chain through greener sourcing, greener production and greener products. We aim to reduce our own emissions by 30 percent in 2030 and explore different paths towards further significant emissions reductions by 2050. Through greener sourcing and greener production, we also aim to help our customers in reducing their emissions through providing greener products.

Our new strategy puts more emphasis on reducing own emissions. Changes in our production portfolio might influence these targets, but our aim is still to reduce our specific emissions. We have set targets to reduce greenhouse gas emissions by 10 percent by 2025 and 30 percent by 2030, based on a 2018 baseline (2017 for Paragominas, Alunorte and Albras due to the production embargo at Alunorte and curtailment at Albras and Paragominas). The baseline emissions equal 13.3 million tonnes CO₂e and includes direct emissions and indirect emissions from electricity generation (scope 1 and scope 2 emissions).

The timing is dependent on implementation of specific projects and the reduction is thus not anticipated to be linear from year to year. In order to have a greener production, we are looking into projects for significant emissions reductions at Alunorte through a greener energy mix. We are also looking into improvement potentials throughout our organization.

The element greener sourcing in the new climate strategy, refers to Hydro's position as a purchaser of raw materials and energy. Hydro has the opportunity to source less carbon-intensive electricity and cold metal with a lower carbon footprint. We also have the opportunity to increase the use of post-consumer scrap in metal production.

Innovation and technology development are key enablers towards reducing CO₂ emissions. We have initiated a significant R&D program towards 2030 to look into different alternatives to achieve CO₂-free processes. We will explore different paths such as carbon capture and storage, biomass anodes and carbon-free processes. By 2030 we expect to have a clearer view on a path to further significant emission reductions by 2050.

In 2018, Hydro concluded a review of its climate-related risks, including physical, technological, commercial, legal and reputational risk. The review forms the basis for scenario analyses and the updated climate strategy.

Since 2013, Hydro's ambition has been to be carbon neutral in a life cycle perspective. Carbon neutrality can be defined in many ways, and we define it as a balance between the direct and indirect emissions from our own operations, and the savings of applying our metal in the use phase.

Hydro's climate strategy is an integral part of our overall business strategy, aiming at driving improvements and development within the company. Consequences to the climate strategy is also a criterion for all significant investment decisions. The strategy includes reducing the climate impact of our operations as well as taking advantage of business opportunities by enabling our customers to do the same.

The key focus areas of our carbon neutral 2020 strategy have been:

- Increased production of primary aluminium in Norway, based on hydropower
- Increased recycling
- Increased deliveries to the automotive sector

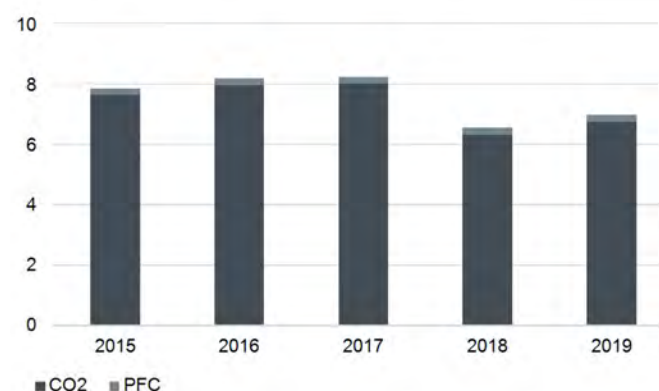
Hydro became carbon neutral in a life cycle perspective in 2019.

For more information about Hydro's climate model, see <https://www.hydro.com/globalassets/04-sustainability/hydroclimatemodel.pdf>

On December 12, 2019, Norsk Hydro ASA signed a USD 1,600 million revolving multi-currency credit facility with the margin linked to Hydro's greenhouse gas emission target. The margin under the facility will be adjusted based on Hydro's progress to meet its target to reduce greenhouse gas emissions by 10 percent by the end of 2025.

Direct greenhouse gas emissions from Hydro's consolidated activities

Million mt CO₂e



Emissions in 2018 decreased due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Hydro is a signatory to the Task Force on Climate-Related Financial Disclosures (TCFD). See page 262 for more information.

Using viable energy sources, reducing emissions and energy consumption

The overall carbon footprint of primary aluminium is highly dependent on the source of energy used to produce the metal. The energy source available is a determinant for localization of Hydro's investments and for the carbon footprint of the metal produced. More than 70 percent of the electricity used in Hydro's production of primary aluminium is based on renewable power.

In order to ensure continued supply of renewable power to Hydro's operations in Norway, Hydro has entered into several long-term power sourcing contracts over the recent years, replacing contracts expiring in 2020. The total contracted volumes (wind and hydropower) amount to approximately 8.5 TWh per year for the period 2021 to 2030, with a majority of contracts coming into effect from 2021. For more information please see Energy in the Business description section in this document.

The Qatalum aluminium plant in Qatar has natural gas as its energy source. The International Panel on Climate Change recognizes natural gas as an important transition fuel that can help reduce global temperature increases. Hydro owns 50 percent of Qatalum. Our share of Qatalum's production represents about 15 percent of our total primary metal production capacity.

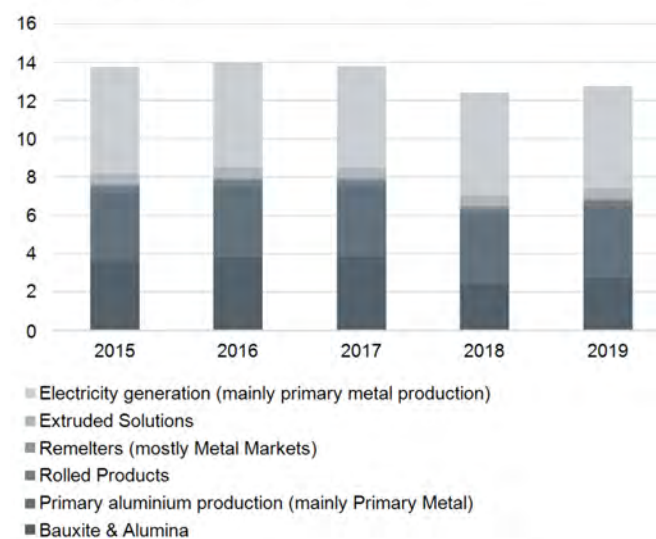
Energy efficiency is an important part of Hydro's ongoing efforts to reduce costs and air emissions. In addition to reducing our greenhouse gas emissions, we have launched a new target to reduce non-greenhouse gas emissions (NO_x, SO_x, and particulates) by 50 percent by 2030.

Our Alunorte alumina refinery in Brazil is among the most energy-efficient refineries in the world. Switching part of our fuel oil consumption at Alunorte to lower-emission and more cost-efficient natural gas is an important enabler to reach our emission reduction targets. Another enabler is an increase in renewable power in our energy mix.

Average electricity consumption at our consolidated smelters was 14.2 kWh per kilogram primary aluminium produced in 2019, impacted by the ramp-up at the aluminium smelter Albras. The global average is about 14 kWh. The Karmøy technology pilot in Norway is currently testing Hydro's next generation smelter technology with potential electricity reductions of 10-14 percent, see section Innovation and design thinking, page 100. The Karmøy technology pilot is testing this technology on an industrial scale.

Greenhouse gas emissions from Hydro's ownership equity

Million metric tons CO₂e



Emissions in 2018 decreased due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Reducing CO₂ emissions through the use of our products

Aluminium has significant carbon footprint benefits in its use phase, especially due to its lightweight properties. As Hydro has limited production of end-consumer goods, the calculation of use-phase benefits can only to some degree be based on product specific data. We therefore use acknowledged, independent LCA (Life Cycle Assessment) studies to calculate the use-phase benefits in combination with product shipment data. Use-phase benefits can best be documented in the automotive sector.

We work closely with customers to develop products that save energy and reduce emissions. Examples include lighter transportation, better packaging to reduce cooling needs and food spoilage, and aluminium façades that lead to lower operating costs and enable buildings to generate as much energy as they use during operation.

In 2019, we launched the two low carbon brands Hydro REDUXA and CIRCAL which comes with a guarantee of low carbon footprint and high recycled content of post-consumer scrap.

Increasing recycling of aluminium

The inherent properties of aluminium make recycling attractive. It can be recycled infinitely without degradation in quality, and recycling requires 95 percent less energy than primary aluminium production.

Hydro is a large remelter and recycler of aluminium. We remelt process scrap from our own production and from other companies, as well as post-consumer scrap from the market.

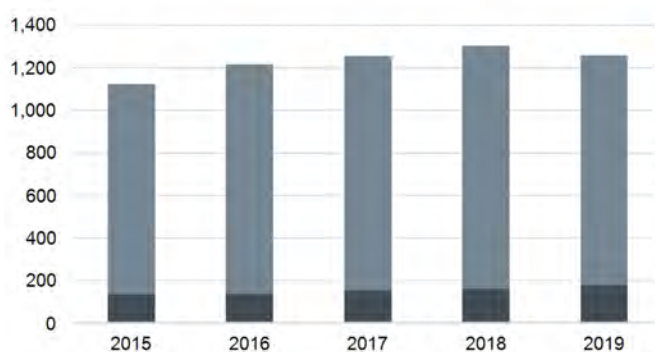
A new recycling line at our Azuqueca plant in Spain will be commissioned and ramped up during 2020. It will be modelled as a next generation of our recycling facility in Clearvaux, Luxembourg. This, in combination with an upgrade at Clearvaux and the remelter Deeside, UK, will add up to 30,000 tonnes of post-consumer scrap recycling capacity, increasing our total capacity from 175,000 tonnes per year at the end of 2019.

We have further improved processes to combine clean scrap with post-consumer scrap recycling. The technology is rolled out to Hydro's remelting and recycling plants. These investments will increase our post-consumer scrap capacity by up to 20 percent at each plant. Hydro's patented technology in scrap shredding and sorting is under further development, making it possible to produce high-quality extrusion and sheet ingot from post-consumer building and automotive scrap. Our Hydro CIRCAL product line offering aluminium with 75 percent post-consumer scrap and has among the lowest carbon footprint in the aluminium industry. For CIRCAL, the capacity utilization was full in 2019, and we expect this to continue in 2020.

To further develop the sorting process of aluminium scrap into alloys, we installed a pilot line in the R&D center in Bonn, Germany, in 2017. To develop a proven business case for further investments across Hydro's business areas, we will install an industrial pilot line at Hydro's scrap sorting facility St. Peter in Germany during first half of 2020.

Recycling

Thousand mt



■ Recycled post-consumer scrap ■ Recycled pre-consumer scrap

Environmental impact management

The goal of our new 2030 environmental strategy is to minimize our impact along the aluminum value chain by addressing the industry's key environmental challenges. We aim to do so by driving rehabilitation at our bauxite mine, developing and implementing sustainable management solutions for our tailings and bauxite residue streams while reducing our waste to landfill from our downstream operations and significantly reducing our non-GHG emissions to air.

Hydro's bauxite mining and alumina refining activities in Pará in Brazil, in the Amazon basin, include open pit mining and the handling of significant amounts of tailings and bauxite residue, the latter also known as red mud. Land and water body conservation and restoration is of particular importance for Hydro's bauxite and alumina operations in Pará state in Northern Brazil and for Hydro's hydropower operations in Norway, please see section Operations – Energy on page 60. Hydro has primary aluminium production in Australia, Brazil, Canada, Germany, Norway, Qatar and Slovakia.



In addition to the existing climate and recycling strategies, we prioritize the following areas:

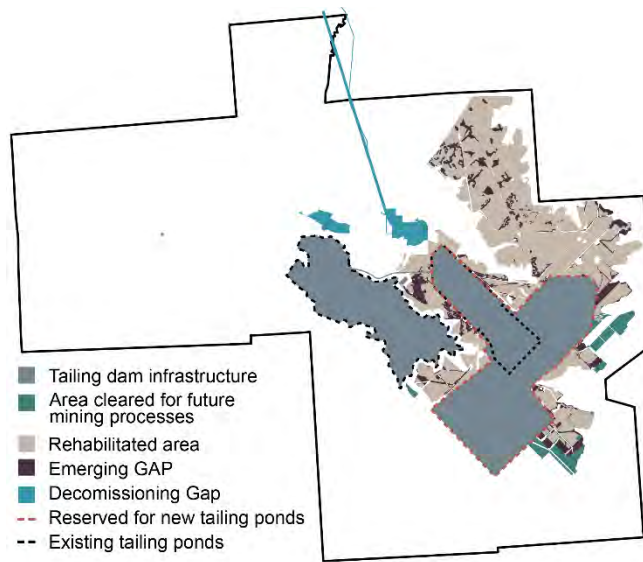
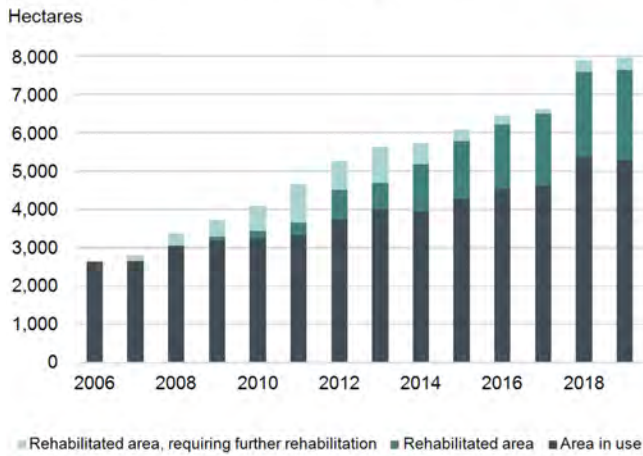
- Ecosystems and biodiversity
- Water stewardship
- Waste and efficient resource use
- Product stewardship

Ecosystems and biodiversity



Hydro's bauxite mine, Paragominas, is located in the state of Pará in Northern-Brazil, in the Amazon Basin. The rehabilitation target in our mining areas provides a driver for rehabilitation. It is a rolling target, aiming for a 1:1 rehabilitation of mined areas available for rehabilitation over two hydrological seasons after release. This definition takes into account the nature of the mining and rehabilitation cycles, and the time lag necessary to ensure quality rehabilitation to restore biodiversity. It also takes into account that land periodically needs to be set aside for temporary infrastructure, e.g. roads, in order to safely operate the mine.

Land use and rehabilitation - Paragominas



When tailings dams are closed, they need to settle for at least five years before they will be available for rehabilitation. We will then get a new rehabilitation gap. This will differ from the rehabilitation gap that Hydro adds to on a daily basis as a result of its mining (due to the specific nature of tailings) and will require a tailor-made rehabilitation strategy.

To increase our knowledge and secure a science-based approach to rehabilitation, the Biodiversity Research Consortium Brazil-Norway (BRC) was established in 2013. Learn more about our partnerships on page 90.

Hydro uses three different methods for rehabilitation in Paragominas, based on different needs:

- Traditional rehabilitation
- Natural vegetation
- Nucleation method

Hydro has used the nucleation method in Paragominas since 2013. Topsoil is unevenly distributed to simulate natural landscape and trap rainwater. Piles of cut wood are distributed, creating shelters for animals and improving growing conditions for some plant species. The ambition is to establish a forest system of the same structure that is

typical of the forest in the area and to secure as much biodiversity as possible. The method has been approved for testing in MRN and Paragominas by the relevant environmental authorities and is showing encouraging results.

All of our hydropower reservoirs are located within or in close proximity to national parks and other protected areas in mountainous regions in southern Norway, including Hardangervidda and Jotunheimen. We strive to minimize the potential environmental impacts associated with Hydro's operations including changes in aquatic and terrestrial habitats along the waterways and impact on recreation and tourism. See section Operations – Energy on page 60 for more information.

When developing new projects, we perform an environmental risk analysis as part of our impact assessment, following internationally recognized guidelines, see more on page 88.

Water

Our main interaction with water bodies comes as a result of discharges to the external environment, primarily in Brazil (to rivers) and Norway (to rivers, lakes and fjords). Where the authorities deem it appropriate, these discharges are regulated by relevant permits. Water withdrawal of groundwater from our own wells and through public water works may in addition have an effect on life below water.



Hydro use the WRI Aqueduct water tool to perform an annual review of water withdrawal from water-stressed areas. The mapping of Hydro's sites in 2019 showed that 2 percent of our overall fresh-water input came from water-stressed areas, with regard to annual renewable water supply (according to the definition used by WRI).

In 2017, Hydro developed a basic water risk analysis tool, covering water use and discharge, to be applied across key operations. Preliminary findings supported the results of the WRI Aqueduct tool - operating in water-stressed areas is not a material risk for Hydro's key operations. Instead, the more material risks are linked to the management of excess water and the quality of the external bodies into which Hydro discharges process water. As a first step towards implementing risk-based water management targets and increased local stakeholder engagement, Hydro is strengthening current water reporting and management practices. We aim to have implemented industry best practice water reporting by 2021.

Qatalum in Qatar relies on public water supply produced by desalination. Seawater is used for wet cooling towers at the power plant as well as for wet scrubbers at the potline fume treatment plants.

Our alumina refinery Alunorte in Brazil obtains an important part of its water supply through the bauxite slurry that is transported from Paragominas by pipeline. Paragominas' and Alunorte's water use is close to their current regulatory limits. To learn more, see note E2.3 to the environmental statements. Based on new hydrological studies of the Parariquara river, Paragominas' water extraction permits were revised in 2018. However, water collection can still be an issue if a new third-party user requests water extraction from the same watershed. If so, a new license will be needed for an additional extraction point.

The Norwegian Environment Agency has required Hydro to clean up historical contamination in the Gunnekleiv Fjord by 2022. The work is progressing according to the plan. We are exploring alternative methods in cooperation with the relevant authorities.

For more information about the impact of our water reservoirs related to hydropower production, please see section Operations – Energy on page 60.

Waste and efficient resource use



Our goal is to minimize the amount of waste produced, and then reuse or recycle it. When this is not possible, we shall deposit it in a secure way to minimize adverse effects to people and the environment.

Tailings and bauxite residue

Tailings from bauxite extraction consist of mineral rejects from the extraction process mixed with water and flocculants. The tailings at Paragominas are stored in dedicated tailings dams, where the particles settle. Run-off water is collected in a separate water pond and reused. The water pond prevents overflow to the river during heavy precipitation. The run-off water is monitored, and the water quality meets the requirements set by the authorities.

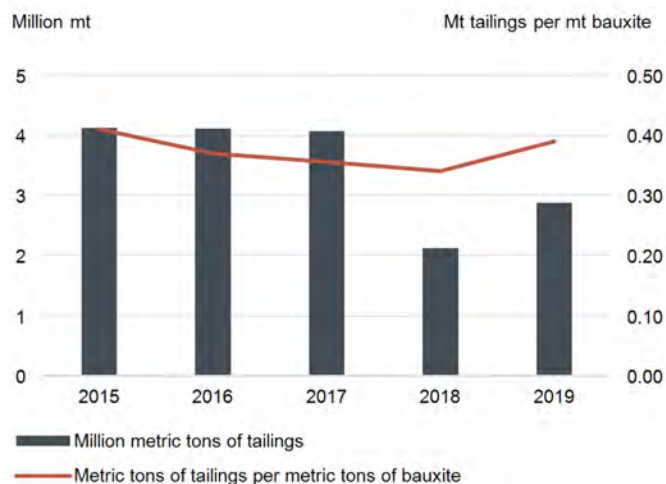
In Paragominas, a new tailings system was completed in 2017. The new tailings dam is situated on a plateau where mining has been finalized. The old tailings system is constructed in a shallow valley. When tailings dams are closed, they need to settle for at least five years before being available for rehabilitation.

Bauxite residue is a waste product of the alumina refining process. Its disposal is challenging due to large volumes and the alkaline nature of the liquid component of the residue. The residue is washed with water to lower the alkalinity and to recover caustic soda for reuse. Hydro uses an enhanced dry stacking technology for disposing of bauxite residue which allows for residue storage at steeper slopes, reducing the disposal area requirements. This reduces the relative environmental footprint. The new bauxite residue deposit area at Alunorte includes more advanced press filters. These are capable of reducing the residue moisture content to 22 percent, down from 36 percent achieved with the previous drum filter technology.

Alunorte will perform a socioeconomic study on possible impacts of the new bauxite residue storage area. If the study indicates a need for compensatory measures, such measures

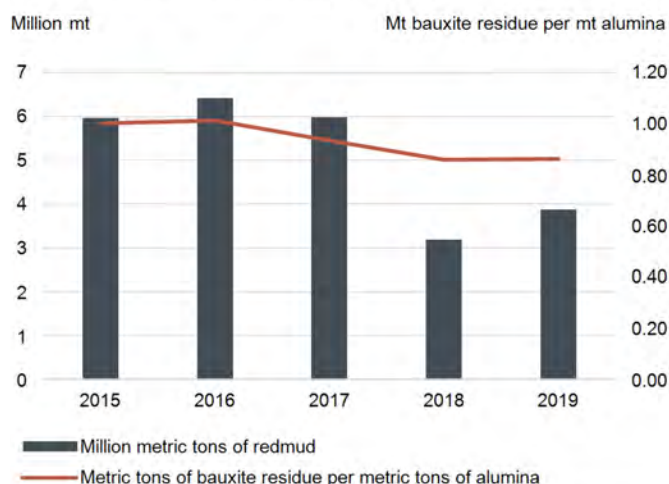
shall aim to contribute to sustainable and long-term improvements in potentially affected communities. Moreover, Alunorte is committed to involve Ministério Público Federal in the potential necessary updates of the environmental license

Tailings from bauxite production



Tailings production decreased significantly in 2018 due to the Paragominas curtailment. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

Bauxite residue from alumina production



Bauxite residue production decreased significantly in 2018 due to the Alunorte embargo. This is partly reversed in 2019 due to the lifting of the embargo and ramp-up of production.

The dams and deposits are regularly inspected by Hydro and the Brazilian authorities. They have also been reviewed against international standards by external international geomechanical consultants NGI and Geomecanica. The last site visit by NGI and Geomecanica took place in 2016. The resulting actions points were prioritized and are currently in the process of being closed. The majority have been closed successfully, with a smaller number still outstanding.

The tailings storage facilities at Paragominas are raised exclusively using the downstream elevation method, with the exception of one relatively short and low centerline raising at the very top of the dam. The downstream elevation method

provides the greatest level of structural integrity and safety. In addition, the tailings stored in our Tailings Storage Facilities are of a higher solids content (ca 55-60 percent solids content) than that generally found in the iron ore industry (e.g. Samarco and Brumadinho).

Safe operations in compliance with regulatory requirements are crucial for Hydro. The Paragominas dams are stable and regularly monitored and audited by external experts. The dams meet all parameters of current environmental and mining legislation.

Hydro is also a 5 percent shareholder in Mineração Rio do Norte (MRN)¹⁰, where the tailings disposal process is designed to allow tailings to achieve a final solids content similar to that of Paragominas. MRN is the operator of the mine and is responsible for the management of its tailings system. Hydro works with MRN and the other shareholders through the board of directors and relevant technical committees to require the safe operation of MRN's tailings ponds in accordance with applicable laws and standards.

Hydro's tailings storage facilities and bauxite residue storage areas are operated in line with all relevant regulations; however following the extreme rain event in February 2018, the free board levels at DRS1 were exceeded for a few days, leading to a production embargo at Alunorte. We also follow voluntary best practice and audits are conducted by international third parties. Following the Brumadinho tragedy in January 2019, Hydro reviewed its tailings storage facilities to ensure continued safe operations and management. Hydro continues to work on improving its tailings management practices and collaborate with relevant stakeholders. Hydro participated in the tailings storage facilities disclosure request initiated by investors and co-chaired by the Church of England pension board in the first half of 2019. Hydro is also participating in the drafting of a new International Standard for Tailings Storage Facilities through our membership in ICM, which is one of the three co-conveners of the International Standard alongside UN Environment Program (UNEP) and PRI, an investor initiative in partnership with UNEP Finance Initiative and UN Global Compact.

Hydro participates in international collaboration projects investigating possibilities to use bauxite residue as a resource. See the section Innovation and Design Thinking later in this report. Hydro has launched a new target to utilize 10 percent of bauxite residue generated from 2030. In addition, we are supporting a PhD candidate in advanced closure management of bauxite residue deposits.

Other waste and emissions

Hydro launched an ambition in 2012 to reduce landfilling of total waste – excluding tailings and bauxite residue – by 60 percent within 2020 from a 2010 baseline. This target has not been reached, primarily due to the too broad scope. Going forward we will have a more targeted approach and aim to recycle 65 percent of our spent pot lining (SPL) by 2030, and find more sustainable solutions for our waste streams, identifying where they can be utilized as a resource.

SPL, or cathode waste, is generated from the electrolysis cells used in primary aluminium production. The production of SPL varies with the relining of electrolysis cells, which is normally done every 4-7 years for established aluminium plants. New plants will get relining peaks at the same interval after start-up. For information about SPL production, see note E5.2 to the environmental statements.

Since 2012, some of the anode waste has been used by Norcem cement plant in Brevik, Norway (part of Heidelberg Cement). The carbon material from Hydro is being used as an alternative fuel in the production process, where high temperature incineration ensures safe treatment of any hazardous components.

Hydro has an agreement with a refractory supplier to recycle part of the bricks coming from relining the anode baking furnace.

Qatalum delivers all first-cut SPL, which is the most energy-rich and contaminated part of the SPL, to its neighbor Qatar Steel, which uses it in its production. In addition, Qatalum has developed in cooperation with local cement plants a solution for co-processing of second-cut SPL.

Albras has a significant stock of SPL. This is being reduced according to the annual plan and target, and being delivered to the cement industry in Brazil.

These agreements are examples of efficient resource use that is sound for the environment by substituting fuel or raw materials while reducing landfill and saving landfill costs.

Proper handling of SPL and other waste is a part of the planned rehabilitation work at Hydro's former aluminium plant in Kurri Kurri, Australia, where production ended in 2012. Hydro has agreed to sell the site of its closed Kurri Kurri smelter in Australia to a joint venture of local property and residential land developers Stevens Group and McCloy Group.

Dross is a mixture of metallic aluminium, alloy components and metal oxides that is formed on the surface of liquid aluminium. Hydro's casthouses have treatment facilities to recover as much aluminium as possible from hot dross. The residual dross can then be sent to certified third parties to recover aluminium and reduce the total dross sent to landfill.

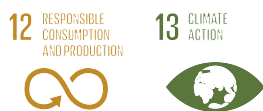
Several projects are in development that will further reduce waste-to-landfill in the medium to long term.

Following a mass balance of mercury at Alunorte in Brazil, which was concluded in 2017, Hydro decided to install four mercury condensers on the digester lines. The first condenser was installed in 2018, as a pilot, and its technical performance is being monitored prior to the installation of the remaining units. The initial timeline was to install the remaining units in 2020, but this has been rescheduled to allow for further performance optimization of the technology.

¹⁰ Hydro has a 5 percent ownership interest and off-take agreements with Vale for a further 40 percent of the volume produced by MRN.

Product stewardship

Hydro engages in dialogue with customers and other stakeholders regarding the environmental impact of our processes and products. We perform life-cycle assessments (LCAs) for all major product groups to identify improvement potentials. We also assess other aspects such as energy and material consumption, toxicity and recyclability.



Over the past two decades, Hydro and other aluminium companies have developed a pan-European network of national initiatives to promote and recycle aluminium packaging. Many of these national activities are emphasizing education and have developed projects with primary and secondary schools and universities to stimulate the next generation to make their contribution to a better environment.

Hydro is an active member of the Aluminium Stewardship Initiative. As of publication of this report, 40 production sites have been certified, covering Hydro's value chain from bauxite to finished products, see page 260.

Ensuring a culture of compliance and integrity

Hydro's board-sanctioned Code of Conduct creates the foundation that supports our efforts to do the right things and to always act with integrity throughout our global organization wherever we operate and conduct business on behalf of Hydro. It requires adherence to laws and regulations as well as internal constituting documents and global directives and is systematically implemented and followed up through our compliance system.

Our compliance system is based on a clear governance structure defining roles and responsibilities with regard to compliance and all compliance-related activities undertaken throughout the company.

The management of compliance risks, including risks related to corruption and human rights violations, are integrated in our business planning, enterprise risk management and follow-up process, including relevant risk-mitigating actions and key performance indicators. The progress of actions as well as any non-compliance matters are addressed in the quarterly performance review meetings that each business area has with the CEO, and an annual compliance report is submitted to the board of directors. The head of group compliance reports to the board of directors through the board audit committee at her own discretion. She meets with the board of directors periodically and participates in all board audit committee meetings.

Combating corruption and respecting human rights are integral to our supplier requirements, see page 93. Procedures are in place relating to assessing the integrity risk of business partners and detecting fraud. Regular transaction-based screening of customers and suppliers is also carried out, see note S10.5 to the social statements. In 2020, Hydro continues to evaluate its integrity risk management approach to ensure adequate management of relevant risks.

An integrity index has been introduced in Hydro's employee engagement survey, and will be part of the survey taking place in 2020. The index will benchmark the employee perception of our integrity culture. It aims to identify weaknesses and provide us with a good basis for specific and tailored compliance activities going forward.

Hydro aims to strengthen sanctions and trade compliance awareness by e-learning and tailored classroom training for exposed functions. The roll-out of e-learning in Hydro was impacted by the cyber-attack, and will continue in 2020. The enhanced sanctions and trade compliance framework was established during the end of 2018.

Hydro's global data protection procedure constitutes the company's binding corporate rules for data protection and ensures compliance with the EU General Data Protection Regulation (GDPR). It was approved by the relevant EU data protection authorities in May 2018. We have performed training, developed detailed standard operating procedures and established risk matrices for data privacy. After the GDPR came into force, we continued to further operationalize internal data protection procedures. We have also strengthened Hydro's data protection work, with a specific emphasis on clarifying roles and responsibilities.

We are committed to building a culture of trust where employees are comfortable to ask questions, seek guidance, raise concerns, and report suspected violations. Normally, concerns and complaints should be raised with the employee's superior. However, if the employee is uncomfortable with that, he or she may raise the issue with human resources, HSE (health, safety and environment), a union/safety representative, compliance, legal or internal audit. The employee can also use Hydro's whistle-blower channel, AlertLine, where concerns can be reported anonymously. All employees and on-site contractors can use the AlertLine in their own language at all times via toll-free phone numbers, Hydro's intranet or through a dedicated address on the internet. In certain countries, e.g. Spain, there are, however, legal restrictions on such reporting lines.

All cases reported through the AlertLine were assessed, and investigations were performed where relevant. In total, 20 persons were dismissed as a result of reported breaches of Hydro policy in 2019. This includes two dismissals in substantiated cases of corruption, please see note S10.1 for more information.

The head of internal audit reports to the company's board of directors through the board audit committee. Every quarter, she informs the board audit committee and periodically the corporate management board about matters reported through the AlertLine. Hydro's internal audit has resources in Norway, Brazil and North America.

For more information about Hydro's performance on compliance, see note S10 to the Viability performance statements in this report. For information about alterations of certain test records in former Sapa, please see page 113.

Transparency

Transparency is key to creating a global level playing field as well as to safeguard the company's reputation. Hydro supports the Extractive Industries Transparency Initiative (EITI) and, since 2005, we have reported payments to host governments related to exploration and extraction activities for bauxite. We also comply with the Norwegian legal requirements on country-by-country reporting, see page 273. The report has been approved by Hydro's board of directors. In accordance with the UK Modern Slavery Act and Australia Modern Slavery Bill, we publish a transparency statement which is also approved by the board of directors, see page 291. In addition, we follow the Euronext guidelines to issuers for ESG reporting.

Hydro is a long-standing corporate member of Transparency International (TI) Norway and participates regularly in seminars with TI and by providing content to TI publications.

Stakeholder dialogue

Engaging with our stakeholders helps us understand what is expected of us, what is important to our stakeholders and how we can solve common challenges. As a global company, Hydro participates in a wide range of activities, from local community meetings to national and international multi-stakeholder and industry association discussions. We are committed to interacting with all our stakeholders in an ethical and transparent manner. We strive to demonstrate integrity in everything we do.

Our dialogue and engagement covers a large number of stakeholders and individuals, such as unions, works councils, academia, customers, suppliers, business partners, authorities, industry associations, non-governmental organizations and local communities, including vulnerable groups. See figure on page 89.

We will consult with interested and affected parties in the identification, assessment and management of all significant social, health, safety, environmental and economic impacts associated with our activities. For more information regarding stakeholder dialogue and human rights, see page 91.

When planning new projects, we map the environmental and social impact when relevant. Before major developments or large expansions are undertaken, it is a requirement to conduct an impact assessment, in line with internationally accepted standards. Both follow standards such as the International Finance Corporation Performance Standards, Equator principles and UN Guiding Principles on Business and Human Rights. This includes the principle of free, prior and informed consent when indigenous and traditional peoples are involved. The assessments follow the requirements regarding information, consultation and

investigation of the project's environmental and social impact, including human rights, as well as action plan and proposed initiatives.

Dialogue with affected groups gives input to plans, detailing our environmental and social responsibilities. We strive to act in an open and credible manner, and gather views from interested parties, aiming for a common understanding of the decisions that are made.



Dialogue with the employees' representatives includes involvement at an early stage in all major processes affecting employees, and we have a tradition for open and successful collaboration between management and unions.

All business areas have a forum for dialogue between the management and union representatives. Hydro's Global Framework Agreement was last updated in 2016. The parties are currently negotiating a new agreement.

Grievance, or complaint, mechanisms are important to understand the impact of Hydro's operations, and the impact on the rights of individuals and groups affected by our operations. Grievances may be of any kind, including social and environmental issues, and can be made anonymously to Hydro through various mechanisms. For more information on human rights and grievance mechanisms, see page 91.

Hydro will not tolerate retaliation against anyone who speaks up in good faith to ask a question, raises a concern, reports a suspected violation or participates in an internal company investigation.

Portfolio changes

Extruded Solutions has been undergoing an optimization of its large asset portfolio to identify ways to streamline its footprint and reduce costs supporting the ongoing NOK 1.0 billion improvement target. During 2019 several extruded plants were closed or divested throughout Europe and in the US, and in most cases, volumes have been transferred to other facilities. Examples of dialogue with affected groups and stakeholders in this process are the two extrusion plants in Europe, Spain and Romania, that were divested in 2019, and a plant that was closed in the US. In Europe, there has been a close dialogue between the management and the communication body working committees in the business area, and the local work councils where these are present. In the US, there was a close dialogue between management and the affected parties, according to local terms and conditions. An employee support program was established, providing job opportunities and job search training.

On December 18, a decision was made to curtail a maximum of 20 percent of primary production at Hydro's majority-owned Slovalco primary aluminium plant in Slovakia, responding to the weakening market environment. In addition, Slovalco recognized an impairment of NOK 506 million (excluded from underlying EBIT) in the fourth quarter of 2019, due to the weakening market environment combined with Slovalco's relatively high cost position and

uncertainty relating to the renewal of its power contract expiring at the end of 2021. See Note 2.5: Impairment for further information. There is a close dialogue between management and the union at Slovalco around the measures that are taken in the company to adapt to the challenging market situation.

Hydro has initiated a strategic review and comprehensive restructuring of the Rolled Products business area to mitigate the declining profitability which the business has faced over the last years. The aim is to significantly turn this development around by lifting organizational and operational efficiency as well as shifting the product portfolio away from declining markets towards growth markets like automotive and beverage cans. The target is a NOK 0.9 billion improvement by 2023. These improvements will be

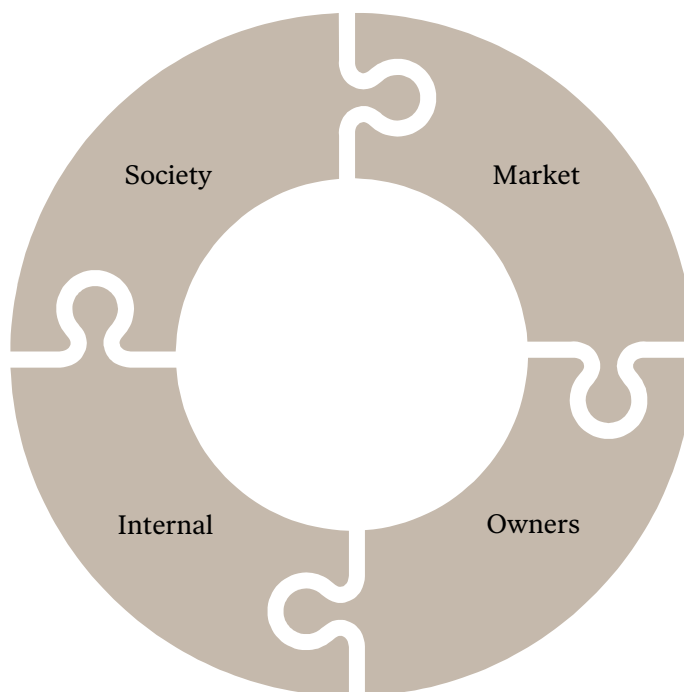
realized, while also continuing the strategic review of the Rolled Products business. Dialogues with affected groups and stakeholders are part of the process, and employees' representatives are involved in all major processes affecting employees.

In 2019, Hydro revised the operating model with leaner staff functions and strong business areas. Staff improvement efforts, represented by the Fit4Future program aims to contribute 0.5 BNOK in improvements mainly through increased efficiency within staff functions across Hydro, of which Global Business Services (GBS) will deliver most of the gains. The revised operating model includes a new Corporate Development function to strengthen Hydro's ability to drive the profitability and sustainability agenda.

Stakeholder dialogue in Hydro

- Academia
- Authorities
- Industry associations
- Lobby groups
- Local communities
- Media
- National and international unions
- NGOs
- Politicians
- Public offices
- R&D funding bodies

- Board of Directors
- Corporate Assembly
- Employee representatives
- Employees



- Commodity and stock exchanges
- Competitors
- Customers
- End users
- Insurers and banks
- Partners/joint ventures
- Suppliers
- Other business relations

- Owners/shareholders
- The Norwegian government
- Financial markets
- Analysts
- Traders
- Brokers
- Ratings agencies

Partnerships

Hydro works through industry and aluminium associations to establish a level playing field for global aluminium production. We support the development of international frameworks on climate change and greenhouse gas emissions and participate actively in organizations such as the World Business Council for Sustainable Development (WBCSD) and the International Emissions Trading Association to provide business solutions to the climate change challenge. In addition, we engage actively in initiatives fostering increased recycling and material stewardship and we are a founding member of the Aluminium Stewardship Initiative (ASI).

The ongoing loss of biodiversity and degradation of ecosystems represent long-term risks for the industry and society at large. We see a need for more sustainable frameworks and participate in several initiatives, including the WBCSD's Ecosystem Program. Hydro is a member of the International Council on Mining and Metals (ICMM), which gives us the opportunity to participate in the development of industry practices on the environment and to share best practices.

To increase our knowledge and secure a science-based approach to rehabilitation, the Biodiversity Research Consortium Brazil-Norway (BRC) was established in 2013. BRC consists of the University of Oslo and its Brazilian partners Museu Paraense Emílio Goeldi, Federal University of Pará and Federal Rural University of the Amazon, in addition to Hydro. The scope of the consortium is to create a research program connected to our mining operations. The aim is to strengthen Hydro's ability to preserve natural biodiversity and to better rehabilitate the areas where we mine bauxite. Thirteen research projects are progressing, while more projects are in the pipeline.

To join forces in collective action is critical in the fight against corruption. Hydro has had a partnership with Transparency International for many years. Hydro is also a member of the Maritime Anti-Corruption Network (MACN), which provides valuable insight into the maritime industry - an important part of our supply chain. Through Alunorte, Albras, Mineração Paragominas and Norsk Hydro Brazil, Hydro has been a signatory of the Business Pact for Integrity and Against Corruption since 2018. The Pact is developed by the Ethos Institute in partnership with global organizations such as the United Nations and the World Economic Forum, seeking to unite companies with the objective of promoting a more ethical market and to eradicate bribery and corruption in Brazil. Hydro is also a signatory to the World Economic Forum's Partnering Against Corruption Initiative (PACI).

Hydro has had a long-standing partnership with Amnesty International Norway since 2002. The partnership is based on human rights education and dialogue meetings on relevant human rights dilemmas. We also cooperate with the Danish Institute for Human Rights for external expertise to further develop, maintain and strengthen our approach to human rights. To contribute to the strengthening of human rights frameworks, we also participate in relevant forums, such as ICMM, ASI and UN Forum on Business and Human Rights.

In 2019, we continued our partnership with Save the Children to contribute to quality education for children. The partnership will not be extended beyond 2019. From 2020, Hydro is a Signature Partner of UNICEF Norway.

In addition, we cooperate with global and local industry organizations, NGOs and other organizations. See www.hydro.com for an overview of important partnerships. For information about how we collaborate with other institutions within R&D, please see the section Innovation and Design Thinking page 100.

Public affairs and lobbying

Given the nature of our industry, Hydro is particularly involved in policies dealing with climate change, recycling, viable production and consumption, trade, energy efficiency, energy markets and infrastructure, health and safety in the workplace, competition and other framework conditions pertaining to our industry.



Hydro recognizes the value of engaging with public authorities and other stakeholders in relation to the development of various policy initiatives that impact our industry. We interact primarily with decision makers in countries in which we have significant operations, such as Norway, Germany, Brazil and the US, as well as with regional structures like the European Union institutions. These interactions are mainly related to securing competitive, stable and predictable industry framework conditions, taxes and legislation that might affect our activities.

We promote our views on issues of importance either through direct interaction with public authorities and other stakeholders, or through various industry associations. These include the International Aluminium Institute, European Aluminium, Eurometaux, the Brazilian Aluminium Association, the U.S. Aluminum Association, the Wirtschaftsvereinigung Metalle, the International Council on Mining and Metals, the World Business Council for Sustainable Development, the Federation of Norwegian Industry, and more, see GRI Standards 102-12 and 102-13 at www.hydro.com/gri

In addition, we participate in a series of think tanks, especially in Brussels, and engage regularly in discussions with various NGOs.

Most resources are dedicated to advocacy activities within the EU, Brazil, the US and Norway, through business associations, and direct dialogue with authorities and decision makers.

We support the principles of free and fair trade, and efforts to create a global level playing field. In our advocacy, we also support the climate targets set in the Paris Agreement.

Hydro supports market-based solutions for pricing of carbon emissions, like the EU Emissions Trading System (ETS). A decisive part of the EU regulation is the ability to compensate for the extra cost occurring within the EU, in order to maintain competitiveness for global industries like aluminium.

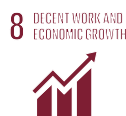
The European Green Deal was announced by EU Commission president Ursula von der Leyen in December 2019. It is a roadmap on policies to achieve carbon neutrality in the EU by 2050 and includes policies to develop markets for low-carbon and circular products, in combination with stricter targets for emission reduction. We see opportunities in this roadmap as long as it is combined with competitive framework conditions.

For information on spending on public affairs and lobbying, see note S12 to the Viability performance statements in this report.

According to our Code of Conduct, Hydro may not make financial contributions to political parties.

Human rights and community impact

As a global aluminium company with mining interests, ensuring responsible conduct in relation to society at large is important throughout Hydro’s value chain. We have to consider our impact on society, spanning from construction to divestment activity, as well as the exposure to corruption and human rights violations, within our own operations, the communities we are part of, and in the supply chain.



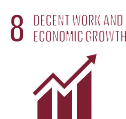
Respecting human rights

We are committed to respecting and promoting the human rights of all individuals potentially affected directly or indirectly by our operations. As an employer, owner and purchaser, an important contribution toward respecting human rights is to secure decent working conditions in our organization, in minority-owned companies and with our suppliers. Information pertaining to Hydro’s human rights policies and compliance is regularly discussed with the board of directors, the Corporate Management Board, business area management teams, and relevant parties such as union representatives.

We do not tolerate any form of harassment or discrimination, including but not limited to gender, race, color, religion, political views, union affiliation, ethnic background, disability, sexual orientation or marital status. And we do not tolerate any form of forced labor or child labor abuse. We support the principle of freedom of

association and collective bargaining. Hydro also supports key frameworks that define human rights principles and is committed to following these, including the UN Guiding Principles on Business and Human Rights and ILO’s eight core conventions. For a full overview, see GRI Standards general disclosure 102-12 and 102-13 at www.hydro.com/gri. Hydro reports according to the UK Modern Slavery Act and Australia Modern Slavery Bill, see the Appendices to Board of Directors report.

Hydro’s human rights management is based on the OECD Due Diligence Guidance for Responsible Business Conduct as described on page 91.



Hydro’s framework for human rights management was reviewed in 2019. The identified necessary improvements include revision of the Human rights policy and strengthening of due diligence and risk mapping procedures. The improvement work will continue in 2020.

Hydro’s human rights management



Hydro’s Human rights management

Policy commitment and governance

Hydro’s Human Rights Policy was developed in 2013 through a multi-stakeholder process. The policy was updated in 2016 and outlines the company’s commitment to respecting and promoting human rights. The commitment is integrated in key procedures, including supply chain management, new projects, portfolio management, and risk management. The policy is approved by the Corporate Management Board and is governed by the Executive Vice President of Corporate Development.

Implementation of the Human Rights Policy is a line management responsibility. Human rights risk can be addressed in the business areas’ Sustainability committees or

similar fora. The committees typically include senior members or members of the management team of the business area. Information pertaining to Hydro's most severe human rights risks is communicated to the board of directors, the Corporate Management Board, business area management teams, and relevant parties such as union representatives.

We expect our suppliers and business partners to follow the Universal Declaration of Human Rights, ILO's eight core conventions and other related UN documents and instruments. The minimum requirements to our suppliers are stated in Hydro's Supplier Code of Conduct.

Human rights responsibilities are part of Hydro's Code of Conduct, which is translated into 18 languages. Training in the Code of Conduct is mandatory for all employees. In addition, more specific training on relevant human rights topics is given to functions involved in procurement and social responsibility on a regular basis. E-learning on Hydro's Social responsibility, including human rights, is available to all employees.

Due diligence: Identifying, assessing, acting, monitoring and communicating impacts

Human rights due diligence is integrated in Hydro's processes. As part of the enterprise risk management process, risk of adverse human rights impacts is discussed. Based on this, mitigating actions or activity plans are developed and included in business plans in the business areas. Business plans are monitored, followed up and evaluated through the year in regular performance review meetings. Human rights and other sustainability related issues are discussed when relevant.

Based on our process for integrity due diligence, we assess all new business partners against human rights criteria. We conduct risk-based audits and reviews of business partners and work to improve business partner performance through corrective action plans or supplier development programs.

We consult with interested and affected parties in the identification, assessment and management of significant impacts associated with our activities. This includes communicating findings and addressing mitigating actions. We also consult with human rights experts knowledgeable about the local territories where we operate or through established partnerships. For more information about our partnerships, see page 90.

Hydro's human rights management is risk-based. In countries with higher risks for adverse human rights impact, we aim to conduct stand-alone human rights impact assessments and mitigating action plans.

Before new projects, major developments or large expansions are undertaken, we conduct environmental and social impact assessments when relevant, which includes evaluating risks for adverse human rights impacts. For more information see page 88.

Rightsholder and stakeholder engagement

We engage with rightsholders and stakeholders both internally and externally to help inform about the effectiveness our human rights management.

We are committed to the principles of non-discrimination and to respecting the rights of vulnerable individuals and groups. We aim to include vulnerable individuals and groups in our dialogues and to pay particular attention to these groups in terms of impact and remediation.

Dialogue with the employees' representatives includes involvement at an early stage in all major processes affecting employees, and we have a tradition for open and successful collaboration between management and unions.

Hydro has regular dialogue with communities, and more frequent and structured dialogue in communities with higher risk of adverse human rights impact. We develop and plan community dialogues in collaboration with affected communities, based on their needs and expectations. Community members in Brazil and at several other major sites are invited to plant visits on a regular basis. We also have regular dialogue with non-governmental organization, academia and other civil society actors to discuss our human rights management. For more information about stakeholder dialogue, see page 88.

Grievance mechanisms and remediation

Grievance, or complaint, mechanisms are important to understand the impact of Hydro's operations on the rights of individuals and groups affected by our operations. Grievances may be of any kind, including social and environmental issues, and can be communicated anonymously. In situations where we identify adverse human rights impact, we work to mitigate, prevent, address and remedy potential adverse impacts as recommended in the UN Guiding Principles on Business and Human Rights. Hydro will not tolerate retaliation against anyone who speaks up in good faith to ask a question, raises a concern, reports a suspected violation or participates in an internal company investigation.

We have several grievance mechanisms depending on stakeholder groups:

- **Employees and contractors**
Employees and contractors can use Hydro's whistle-blower channel, AlertLine, where concerns can be reported anonymously. For more information about AlertLine, see page 87.
- **Community members**
Channels for submitting grievances may vary depending on local needs.
 - At many of our sites, we collect information and complaints through community dialogue
 - In Brazil, we use several channels, including Canal Direto (toll-free phone number and email) and dedicated, specially trained field workers.
 - Online contact forms are also available and can be used anonymously
- **Supplier and business partner employees**
Suppliers and business partners can contact us with complaints through online contact forms, which can be used anonymously.
- **Customers**
Customers can contact us through online contact forms, which can be used anonymously. They can also bring complaints to their Hydro key contact person.

Managing human rights risks

Hydro recognizes that there are potential risks of adverse impacts concerning our operations, mainly in Brazil and in the Middle East, as well as in our supply chain in general. For more information about sustainability in the supply chain, see page 93. Below are some examples of how we manage human rights risks.

Brazil

The Brazilian consultancy Proactiva is currently conducting a thorough human rights due diligence of operations in Pará state, Brazil. The due diligence covers Alunorte alumina refinery, Albras primary aluminium producer and the Paragominas bauxite mine, including the pipeline. The due diligence was high on the agenda of the Corporate Management Board in 2019, and part of their key performance indicators (KPIs). The final results are expected in the first half of 2020. We are further increasing our engagement with central Brazilian human rights stakeholders.

The relationship with institutions and local traditional communities has improved through a more structured social dialogue. In 2019, over 200 community dialogue meetings were conducted with communities next to our operations in Pará state.

Unresolved issues remain related to identifying individuals directly impacted by the construction of a 244-km-long bauxite pipeline that crosses areas inhabited by traditional Quilombola groups in the Jambuaçu Territory in Pará. These issues relate back to the time before Hydro became owner, and the former owner of the pipeline is still the legal party. Hydro maintains its relations with Quilombola representatives through dedicated staff and is cooperating with Fundação Cultural Palmares to foster the dialogue and establish a positive agenda within the Quilombola territory. The Palmares foundation is the Brazilian agency in charge of Quilombolas affairs. Currently, Hydro is working together with different stakeholders, including, but not limited to, Palmares, Quilombola communities and the State of Pará, to establish an agreement that seeks to remedy impacts.

Through the Moju Sustainable Territory Program in the Jambuaçu Territory, we have taken actions to support local associations along the pipeline to strengthen their legal, administrative and governance structure. The program currently consists of several associations, with plans to expand to other interested Jambuaçu associations in 2020.

Addressing the issues in the Jambuaçu Territory was high on the agenda of the Corporate Management Board in 2019 and part of their KPIs.

In Barcarena, also in Pará, in an area surrounding Hydro's operations and regulated for industrial purposes, illegal logging and irregular settlements have accelerated since 2016. Neither the authorities nor Hydro want settlement in the area. In addition, allegations have been made by local groups about potential environmental impacts. See Note S10.2 Legal Claims to the Viability Performance Statements.

In the municipality of Oriximiná in Pará, Brazil, where the MRN¹¹ bauxite mine is located, there is an ongoing dispute between Quilombola communities and Brazilian authorities regarding title to land owned by the federal government. The territory claimed by these communities encompasses certain areas that are planned to be mined by MRN in the future, but MRN is not a legal party in this conflict.

Concerns have been raised about traditional peoples' rights during the process for the mine expansion. Hydro engages with MRN through the Board of Director's Committee to request that the scope of the planned environmental and social impact assessment (ESIA) and Quilombola consultation processes for the expansion project comply with local, national and international standards. MRN is currently engaged in understanding and responding to local stakeholder expectations regarding concerns over the impacts of MRN's operations on local communities.

MRN also supports the Sustainable Territories Program, a social program to promote long-term development of traditional communities in Oriximiná.

Qatar

At the primary aluminium producer Qatalum, a joint venture where Hydro holds 50 percent. GIEK (Norwegian Export Credit Guarantee Agency) conducted a review of the CSR performance in April 2019. GIEK recognized the improvement since their last visit in 2016 and made recommendations for further strengthening Qatalum governing documents and its established procedures.

Norway

We have conducted several social responsibility reviews of contractors in Norway in relation to new construction projects. The purpose has been to ensure basic human rights for the migrant workers employed by contractors in the projects at the primary aluminium producers at Husnes, Karmøy and Sunndal in Norway. No major issues were identified.

Canada

In Canada, Hydro's part-owned Alouette smelter is in regular dialogue with representatives of the Innu First Nation community in its vicinity.

Responsible supply chain

Hydro has more than 30,000 active suppliers globally. Most are located in the same countries as our production facilities.



Hydro's supplier and business partner requirements regarding social and environmental responsibility are, as stated in our global directives and procedures, an integral part of all stages of the procurement process. The requirements cover issues related to environment, human rights, anti-corruption and bribery and working conditions, including work environment.

¹¹ Hydro has a 5 percent ownership interest and off-take agreement with Vale for a further 40 percent of the volume produced by MRN

These requirements set out in Hydro's Supplier Code of Conduct are based on international standards, including UN Global Compact, the ILO core conventions, UN Guiding Principles on Business and Human Rights and other UN documents and instruments. The Supplier Code of Conduct will be updated in 2020.

The principles in Hydro's Supplier Code of Conduct are made binding through contractual clauses, to ensure suppliers and business partners reflect the values and principles that Hydro promotes. Standard contracts also include clauses on auditing rights and the supplier's responsibility to actively promote the principles with its own suppliers/contractors and sub suppliers/subcontractors of any tier that have a material contribution to the supply of goods and services to Hydro under the contract.

Group Procurement was established as a global function in Hydro in 2019 to ensure better coordination and more efficient procurement processes, including risk management.

Hydro's procedure for integrity risk management of business partners includes suppliers and customers, strategic partners and intermediaries/agents. It sets requirements for risk assessments and integrity due diligence when entering into a new business relationship or renewing an existing contract. Implementation is risk-based and takes into consideration contractual value, sector specific risk, human rights risk, corruption risk and more.

Suppliers, customers and other business partners registered in our main accounting systems are screened on a weekly basis against recognized international sanction lists. Furthermore, supplier audits and site visits are performed by

Hydro personnel and external auditors based on risk analyses. See note S10.5 "Screening of business partners and supplier audits" to the Viability Performance Statements for more information

A non-compliance with or breach of the principles in Hydro's Supplier Code of Conduct that is not able to be corrected within a reasonable period may lead to termination of the supplier contract. In 2019, we for example terminated a contract with one of our metal suppliers. Hydro was concerned about the metal supplier's compliance with the principles, but was not given permission to audit the supplier's operations.

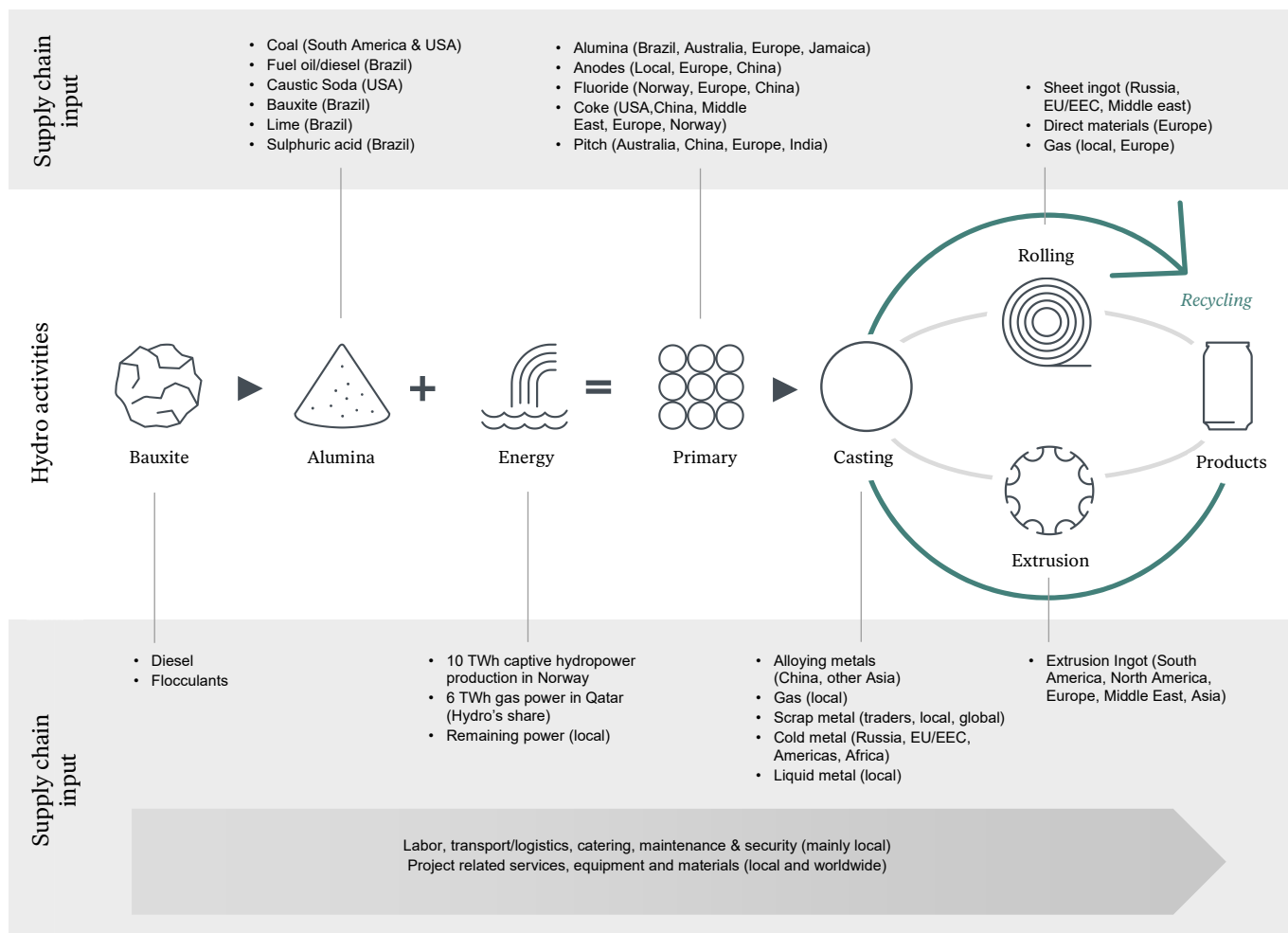
Examples of monitored risks in Hydro's supply chain include business practices, environmental risks and risks to people. These risks are integrated in Hydro's Supplier Code of Conduct, integrity risk management and supplier audits.

The risk of incidents of child labor abuse, compulsory or forced labor in our supply chain is low in the majority of Hydro's business areas. We do, however, recognize a risk of forced or compulsory labor among suppliers in the Middle East, South America and Asia. This is addressed in our supplier audits.

Hydro works to strengthen and improve suppliers' sustainability performance. This may be done through dialogue, sharing of knowledge, innovation processes, incentives or supplier development programs.

In Brazil, suppliers can apply to participate in a comprehensive, year-long supplier development program. In 2019, 26 supplier companies participated in the program.

Hydro's supply chain



The figure shows Hydro's supply chain related to its value chain, and does not reflect the current organizational structure.

Social responsibility – strategy and targets

Hydro's social responsibility ambition is to make a positive difference by strengthening our business partners and the local communities where we operate. To deliver on this, we target the fundamental drivers of long-term development. In line with local stakeholder expectations and needs, and through strong partnerships, we aim to:

- Contribute to quality education in our communities
- Promote decent work throughout the value and supply chain
- Foster economic growth in our communities
- Strengthen local communities and institutions through capacity building on human rights and good governance

We have committed to contribute to quality education and capacity building for 500,000 people in our communities and for business partners from 2018 until end of 2030.

In 2019, we reached over 26,000 people. Continuous improvement of current initiatives and development of new

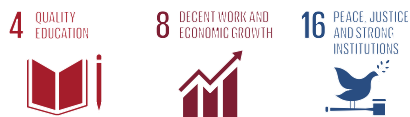
effective, high-impact initiatives will be important going forward.

The insight from quantitatively measuring the people reached and the impact of our initiatives makes us better equipped to select and execute future initiatives with a positive impact. We have developed a methodology to measure the target to ensure consistency across the company.

Community investments and social programs

A key element in Hydro's social responsibility strategy is to strengthen the societies and communities where we operate. The way we do this differs from country to country and from community to community. The main contribution is generated from our operations through production and purchase of goods and services, direct and indirect job creation, and tax payments. We engage in capacity building through targeted programs, and we have partnerships aiming to further enhance the public's knowledge about Hydro and

its operations. Hydro has corporate requirements on management of community investments, charitable donations and sponsorships.



Some of our community programs are linked to mining license requirements, while others are voluntary commitments. The programs target education, economic growth, decent work, capacity building and strengthening of institutions.

To support local communities, we organize volunteer programs at many of our production sites. The volunteer activities are based on local customs and needs. Many sites also support local communities through a range of sponsorships and charitable donations. Extruded Solutions has a broad range of sponsorships and support programs. These activities are not yet included in Hydro’s reporting on community investments, charitable donations and sponsorships.

Another important contribution is the transfer of competence that takes place through our cooperation with universities and research institutions. This includes the cooperation with three academic institutions in Pará, Brazil, and the University of Oslo through the Biodiversity Research Consortium Brazil-Norway. See page 90 for more information. In addition, we provide scholarships to selected PhD candidates doing research relevant for our business areas. Hydro is also sponsoring professorships in Norway and has several adjunct professors among its own employees. See also page 101 for further information.

Many programs from 2018 continued in 2019. We have introduced new programs in Brazil following the restructuring of programs in 2018 and strengthened other programs. Several programs are also linked to partnerships. See more about our partnerships on page 90. Below are some examples of the programs currently running.

Brazil

Hydro has significant operations in Barcarena, Brazil, including the Alunorte alumina refinery and Albras aluminium plant. Local social conditions are challenging, with high levels of unemployment and general poverty. To read more about the situation related to the extreme rain event in Barcarena in February 2018, please see Hydro’s Annual Report 2018.

In Pará state, Hydro currently has more than 10 social programs across the seven municipalities where we have operations. For each of these projects, we have an implementation partner. The implementation partners met several times in 2019 to share knowledge and identify synergies to strengthen our partners and contribute towards the common goal of local development.

We initiated the Sustainable Barcarena Initiative in 2018 and have continued developing it in 2019. The initiative is an independent platform for sustainable development in Barcarena in Pará state. The overall aim is to bring local

stakeholders together to discuss challenges and opportunities, strengthen capabilities and ultimately invest in the social initiatives they plan and develop together. In 2019, we established the Hydro Sustainability Fund, which serves as a financing mechanism for the Sustainable Barcarena Initiative. The first round of financing is currently underway. Hydro is contributing BRL 100 million to the fund over a 10-year period. The fund will also seek funding from other sources. In 2020, we will continue supporting the development of the Sustainable Barcarena Initiative.

In Pará state we also engage with regional initiatives to preserve the Amazon. We run several programs that emphasize entrepreneurship and strengthening of traditional livelihood. This also includes environmental efforts and collaborations such as the Biodiversity Research Consortium Brazil-Norway. See page 90 for more information.

India

In Kuppam, India, where we have an extrusion plant, we continued developing a local educational program using tablets. We currently support two local schools through the program. In 2019, we also piloted a program to make the tablets with the pre-installed learning software available to all community members as a “hot spot” center. The pilot will be evaluated in 2020.

United States

Hydro continued to support FIRST®, a mentor-based program to inspire young people to be leaders and innovators within science and technology. Employees volunteer their time to mentor a team. The teams use parts provided by Hydro to develop innovative solutions. In 2019, Hydro supported three teams in Michigan, Georgia and Indiana to build, program and compete with a robot.

Community investments, charitable donations and sponsorships



In 2018, around 45 million NOK relates to emergency relief and TAC-agreement following the extreme rainfall and subsequent flooding of Barcarena. Extruded Solutions has a wide range of sponsorships and support programs based on local needs. These activities are not yet included in Hydro’s reporting.

Organization and work environment

Through Hydro's global people processes we ensure the right competence, capabilities and organizational culture to be able to deliver on our overall strategic agenda – lifting profitability, driving sustainability.

Hydro's new people strategy, launched during 2020, sets global strategic priorities, ambitions, targets and activities, in addition to a defined process for annual update and revision. The global priorities cover learning and competence development, leadership and succession as well as diversity and inclusion. These priorities are supported by every business area with targets and activities based on their specific needs, addressing challenges in regions where they operate.

A new people platform is being rolled out in 2020 to enable standardized and digitalized global human resources processes throughout the employee's career path.

Hydro's common process for people performance and development includes an appraisal dialogue, individual development plan and follow up, as well as talent planning and succession management.

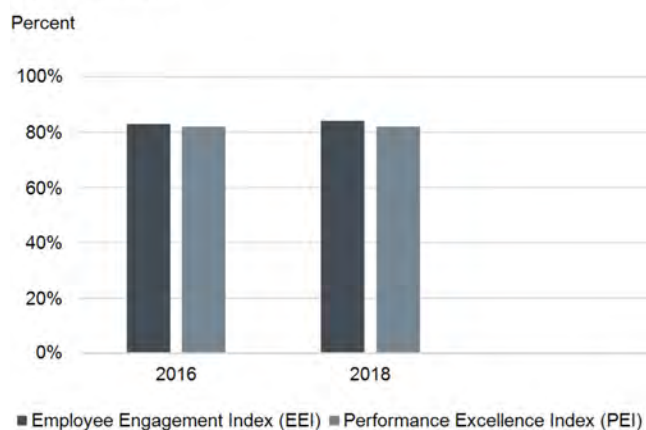
Hydro has a global engagement survey, normally run every second year. The last survey took place in 2018 and reached the top 10 percent according to the IBM External Norm on the Employee Engagement Index. The 2018 survey did not include the business area Extruded Solutions, which will be included 2020. A new survey for the entire organization was to be conducted for all employees in 2019, but was postponed to third quarter 2020 due to the cyber-attack. Maintaining employee engagement is a key priority going forward. All units have action plans based on their results.

Our philosophy is that 70 percent of competence building is direct on-the-job training, while 20 percent is acquired via networking and mentoring and 10 percent via traditional training. We have a common platform for learning and development for employees. It is also the umbrella for all other faculties and academies in Hydro, such as the business systems, HSE, compliance, digitalization and leadership. One important goal is to make training more visible and easily accessible to leaders and employees. This includes an overview of available training and mandatory training modules that each employee should complete or has completed.

We offer new employees introductory training related to the organization and to their individual work tasks. This includes required knowledge within health, security, safety and environment. The most important development takes place locally, primarily with on-the-job training. A special training course, Hydro Fundamentals, targets leaders and specialists, giving them insight into Hydro's history, values, diversity, competitive landscape and businesses. A digital version is under development to significantly extend the reach of the program.

In order to have a healthy pipeline of leaders with the required breadth of experience, we strive to rotate leaders so that they gain knowledge from different parts of the organization. Through the succession and talent processes, we work with the leadership and specialist pipeline and identify required development. We have a portfolio of learning programs that supports development for leaders as well as specialists.

Hydro Monitor



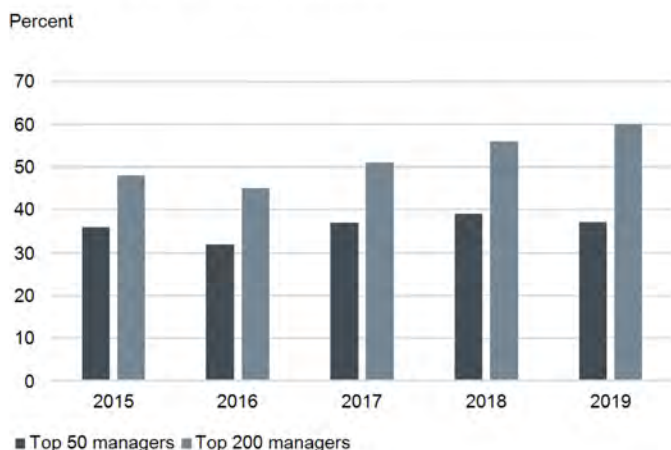
Hydro Monitor did not include employees from Extruded Solutions in 2018. A new Hydro Monitor was to be performed for all employees in 2019, but was postponed due to the cyber-attack.

Diversity and inclusion

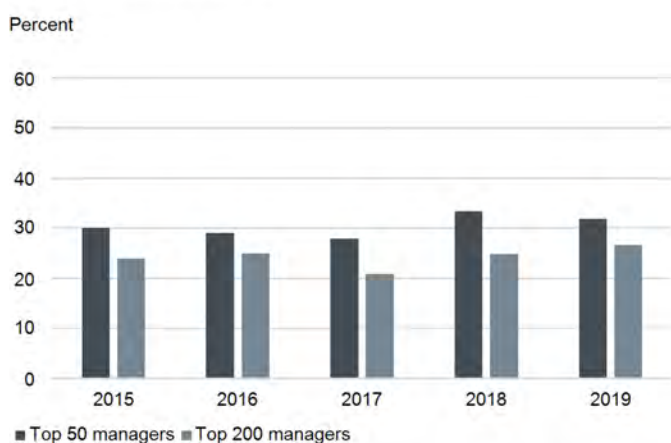
Hydro's organization around the world represents significant diversity in education, experience, gender, age and cultural background. We see this diversity as a source of competitive advantage, as it encourages innovation, learning and better customer understanding.

Our ambition is to have a high-performing and sustainable work environment, based on diversity and inclusion. We want all employees to know they are valued for their differences and that they contribute to the success of our business strategy. A part of the new people strategy is to identify measures and quantifiable targets to support our ambition.

Share of non-Norwegian leaders



Share of women leaders



The total share of women at all levels in Hydro was 18 percent in 2019.

We are continuously adjusting working conditions so that all employees have the same opportunities in their workplace. In Brazil, we are required to employ at least 5 percent employees with disabilities. 4.5 percent of the employees in Paragominas were disabled by the end of 2019, and Alunorte employed 4.5 percent at the end of 2019, while the level at Albras was 3.5 percent. While the absolute number for employees with disabilities was constant in 2019, decreases in share compared to 2018 are due to an increase in permanent employees. We are working to increase the share of disabled employees. Just as important as achieving the legal requirements, Alunorte, Paragominas and Norsk Hydro Brasil are working on the career development of employees with disabilities.

Compensation

All employees shall receive a total compensation that is competitive and aligned with the local industry standard (but not market-leading). The compensation should also be holistic, performance oriented, transparent, fair and objective. Relevant qualifications, such as performance, education, experience and professional criteria, shall be

considered when providing training, settling compensation and awarding promotions.

The annual bonus of Hydro executives shall reflect achievements in relation to pre-defined financial targets and achievements of operational and organizational key performance indicators (KPIs). Targets relating to safety, environment, corporate social responsibility, compliance and leadership expectations constitute a substantial part of the annual bonus plan. Please see note 9.1 and 9.2 to the consolidated financial statements for more information.

To learn about gender-related salary differences, see note S2.1 to the social statements.

Occupational health and safety

Hydro shall be a leading company in our industry in the area of occupational health and safety. This will be achieved through consistent implementation of the management system, with committed and visible leadership, and full engagement of all employees.

Our ambition is to prevent all injuries and ill health to avoid human suffering and we will work continuously to avoid damage to property and loss of production.

We continue to see high-risk incidents with a potential for fatality or permanent injuries or ill health, but at a lower level than previous years. From 2020, our emphasis will be the closing rate of actions related to high-risk incidents in our operations in 30 days. We consider this the main leading indicator for our safety performance

The number of total recordable injuries and associated rates improved over 2018 levels to a total recordable injury rate of 3.0, which is the lowest since 2016. All business areas are active in identifying risks, and our performance indicator related to risk is important in helping monitor and manage processes and tasks with high inherent risks. The high-risk incidents rate, which is a leading indicator, improved in 2019.

There were no serious or life-threatening injuries during the year; however, there were four high-risk injuries that had the potential to have been fatal. There was one fatality at Qatalum, a 50/50 joint venture primary aluminium smelter managed by Qatalum, in 2019. A sub-contracted security guard tragically lost his life when a 1.5-ton guard porta cabin he was in was blown into the sea during a violent storm.

In 2019, all business areas supported the development and deployment of fatality prevention procedures and associated life-saving rules and behaviors. Fatality prevention and the elimination of high-risk incidents will continue into 2020 and builds upon the processes developed in 2019.

A revised HSE auditing process was deployed in 2019 aimed at compliance and identifying and sharing best practices.

Hydro HSE teams are embracing new and innovative ways to engage workers using a variety of digital tools to complement existing processes. See also note S5.1.

In addition, we are strengthening our behavioral tools using human performance techniques and the consistent use of peer-to-peer job observations.

Existing health and well-being programs have been expanded to include psychosocial risk and the creation of a global health team.

Since 2012, the CEO HSE Committee has been the strategic decision-making committee for all main HSE-related matters in Hydro. The committee is led by President & CEO Hilde Merethe Aasheim and consists of the members of the Corporate Management Board.

Hydro is monitoring the development of the Coronavirus disease (COVID-19) and assessing current and potential impact on employees and operations. Initial mitigating actions have been implemented and further mitigating actions are evaluated on a continuous basis.

Security and emergency preparedness

Increased exposure in risk-filled areas and the global volatile risk picture in general have made us intensify our preventive efforts. We are committed to the protection of people, environment, physical assets, data and information, anticipating and preparing for potentially adverse incidents with crisis potential in order to maintain business and operational continuity.

To prepare for and respond to intentional, unintentional and/or naturally caused disasters, and to protect people and critical assets, we adapt and initiate security measures depending on the evolving risk picture.

Security guards are employed on a regular basis to protect our personnel and assets. No armed guards were engaged in our activities in 2019, and there were no significant incidents reported in connection with the use of security guards. Hydro is committed to the Voluntary Principles on Security and Human Rights.

In 2019, we started the progression to achieve certification for ISO 18788, a management system for private security operations, requirements and guidance. It is founded upon the Voluntary Principles on Security and Human Rights, and it will benchmark Hydro's security management system against the international standard. The process started in our extrusion plant Yankton, US, and once the site is certified we will assist our third-party security providers in achieving the same level of conformity. This will ensure all third-party security providers, across all Hydro sites, comply with the international standard, and deliver a consistent security provision irrespective of area or region in which the Hydro site is located.

Hydro is responsible for infrastructure and functions on local and regional levels that might be critical to society's operability, and we operate large-scale production sites where a crisis could influence community interests and safety in general. Hence, we are subject to control and follow-up by relevant national authorities. We have emergency plans in place at the plant and business area level, and we train with these regularly. Lessons identified indicate

that a standardized approach to emergency planning, more closely linked to risk mapping, will improve our ability to deal with emergency situations.

In December 2019, a transmission tower along the pipeline from Paragominas to Alunorte overturned, ceasing power supply to Paragominas and temporarily halting production at the mine. The transmission tower has been repaired, and the power connection resumed. There were no personnel injuries or damage to other production assets related to the power outage. The incident is under legal investigation.

In 2019, we began a program of conducting emergency and crisis management workshops to help link the process of emergency response, crisis management and recovery from the plant through to business area level and above. This program of workshops is aligned with the risks identified through the plant and business area risk management process and is aligned with Hydro's enterprise risk management program. In 2019, we conducted seven workshops covering 45 plants.

Secure information handling is important to ensure Hydro's business continuity and reputation. Crucial computer systems are subject to surveillance and regulations. All personnel with access to sensitive information are bound to secrecy, and required to handle information according to corporate guidelines and requirements.

Hydro's IS/IT infrastructure is a critical element in all parts of our operations, covering areas such as process control systems at production sites, central personnel databases and systems for external reporting. Cybercrime is increasing globally, and Hydro is exposed to threats to the integrity, availability and confidentiality of our systems. Threats may include attempts to access information, computer viruses, denial of service and other electronic security breaches.

Hydro has launched several initiatives to increase the robustness of its IS/IT infrastructure against malicious attacks by improving system infrastructure and by educating employees to develop and improve secure work processes and routines, and to understand how these threats can be prevented.

Employees are safeguarded through systems for travel planning, risk assessment and emergency preparedness. Our ability to respond quickly to incidents worldwide has increased through risk monitoring, incident-monitoring tools and a continuous development of competence.

On March 19, 2019, Hydro was hit by an extensive cyber-attack, please see the section Risk Review on page 105 for more information.

Innovation and design thinking

We believe that the key to Hydro’s 114-year-long stretch of industrial progress is the combination of production and innovation, where research and development have gone hand in hand with full-scale production.



Our R&D efforts are concentrated on:

- Making products and solutions that promote the use of aluminium and sustainable development
- Implementing technology elements in order to optimize productivity, energy efficiency and emissions in smelters
- Using R&D and technology to ensure optimal operations in existing assets, including cost and HSE
- Improving environmental impact in Bauxite & Alumina, such as biodiversity, rehabilitation and utilization of bauxite residue
- Developing recycling technology
- Increasing the share of value-added products and tailored solutions in collaboration with the customer
- Utilizing the opportunities of Industry 4.0 to improve process stability, productivity, cost and safety

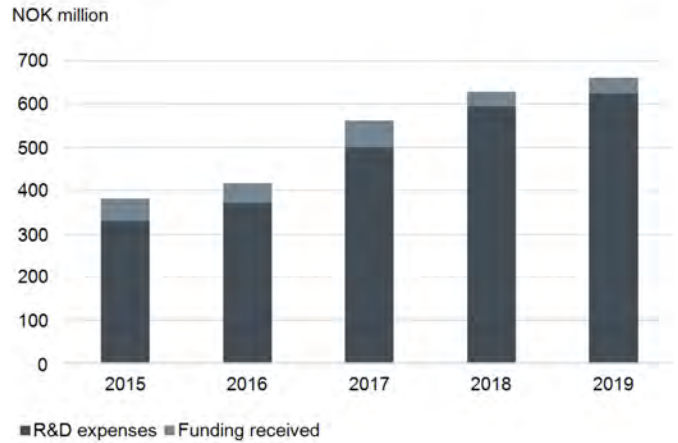
In our mature industry, the development cycles are long, with a need for highly skilled technology competence. This includes smelter technology, new aluminium alloys with special properties, lighter transportation, better packaging to reduce cooling needs and food spoilage, and aluminium façades that lead to lower operating costs and enable buildings to generate as much energy as they use during operation. At the same time, our downstream activities are continuously developing new solutions, together with customers. More and more, this collaboration reflects design thinking, bridging the gap from idea to solution.

Hydro’s Technology Board consists of the members of Hydro’s Corporate Management Board. The technology and innovation group meets every quarter to understand and discuss innovations in the business areas, including their value to the company. Innovations include the changes achieved through our continuous improvement work on all organizational levels. Business areas are responsible for their own technology development and for the execution of their respective technology strategies. A corporate technology office is established to ensure a holistic and long-term approach to Hydro’s technology strategy and agenda. The Chief Technology Officer leads an internal R&D network with representatives from the business areas and supports the Hydro Technology Board in developing overall research and technology priorities and strategies.

The greater part of our R&D expenses goes to our in-house research and application development organization, while the remainder supports work carried out at external institutions. Our main R&D centers are in Årdal (smelter technology) and Sunndal (alloys and casting) in Norway,

Bonn in Germany (Rolled Products), and Finspång in Sweden and Detroit in the US (both Extruded Solutions). A significant research and development department for Bauxite & Alumina has been built at Alunorte in Barcarena, Brazil.

R&D Expenses



A major advantage for Hydro from an innovation perspective is our broad knowledge and control of the entire value chain from bauxite mining, alumina refining, electrolysis of primary aluminium and alloy technology to finished products and recycling.

Our 75,000-tonne-per-year technology pilot at Karmøy (Norway), with the aim of full-scale industrial testing of our proprietary HAL4e technology, reached full production in 2018. Although still in a qualification phase, the Karmøy Technology Pilot is producing the world’s most climate- and energy-efficient primary aluminium. The pilot produced 73,000 tonnes of aluminium in 2019. In 2020, we will perform a validation test of the technology.

We are now in the process of implementing the technology elements from the Karmøy Technology Pilot in our existing primary aluminium producers, improving performance and financial robustness. This includes the Husnes line B in Norway, planned to start production in 2020, and as a part of the regular maintenance and relining of our electrolysis cells in all smelters, where Sunndal presently has strong focus due to its importance in the smelter portfolio. Hydro has also started working on several initiatives to reduce direct CO₂ emission in primary aluminium production.

Bauxite residue is a challenge in our industry due to its alkalinity and large volumes. Hydro participates in international collaboration projects investigating possibilities to use bauxite residue as a resource. An important example is with the Norwegian University of Technology and Science (NTNU), Sintef, Norcem/Heidelberg and Veidekke to develop a new type of concrete using bauxite residue as a resource to improve quality. We are also working with other aluminium companies through the International Aluminium Institute to solve this industry challenge. In addition, we are investing in R&D to reduce the total alkalinity of the bauxite residue.

Aluminium in automotive

The growing use of aluminium in the automotive industry is being driven by emissions regulations and passenger safety requirements. Aluminium is well-suited for all cars, from gasoline- and diesel-powered automobiles to fully electric vehicles and vehicles which use hydrogen fuel cell technology. This is creating new opportunities for Hydro.

Aluminium has inherent suitable forming and functional properties. It is lighter than competing materials and its energy-absorption properties can increase safety. Applications include extruded aluminium frames and sub-frames, body-in-white components, and sheet for hang-on parts such as car doors and hoods.

Hydro is a large supplier to the automotive industry. Customers include major producers in Europe, North America and Asia.

Hydro develops aluminium-based material concepts for battery technology from cathode foil to cell housing, up to integrated solutions for thermal management and battery modules. For the e-mobility market, we won our first contracts to supply battery producers. Furthermore, achieving certification according to the ASI Performance and Chain of Custody standards in 2019, Rolled Products was first mover to supply ASI-certified material for the lower protection cover and battery box for the Audi e-tron model.

High level of expertise

An important part of Hydro's technology strategy is to utilize our researchers, operators and other experts in optimizing the operations at our plants. The competence base in Hydro's technology environments is on a high level in general and world-class in several core areas. As a result, we emphasize using this competence in operational improvements. Examples are reduced energy consumption in casting furnaces, new cathode solutions for relining of electrolysis cells, improved blending tools for utilization of recycled materials, reduced emissions from foil annealing furnaces, and improvement projects related to quality and productivity.

Upstream, we prioritize our R&D and innovation efforts toward technology development and operational efficiency, while downstream, we concentrate on application and product development. Part of our work downstream is conducted together with customers, reflecting design thinking from idea to solution.

The President's Award aims to energize all employees by recognizing excellent work and best-practice sharing. Awards are presented each year within the areas of HSE,

innovation, performance and technology development. Winners should clearly demonstrate the spirit of The Hydro Way, emphasizing Hydro's values. In 2019, Extruded Solutions' high-performance struts solution for automotive customers won the innovation award for products and processes and Primary Metal's HyForge forging stock technology won the innovation award for technology development.

To promote idea generation and innovation, Hydro's business areas have specific programs in place. For more information about R&D in the individual business areas, please see the section "Business description" in this report.

Cooperation with other institutions

In Norway, we receive support from several public institutions to further develop our smelter and casthouse technology as well as our downstream activities. These include The Research Council of Norway, Enova, Innovation Norway and Prosessindustriens Miljøfond. The majority of the support from The Research Council of Norway is paid directly to projects administered or partnered by Hydro at the Norwegian University of Science and Technology (NTNU), SINTEF or Institute for Energy Technology (IFE). Since 2015, we have been a partner in three centers for research-based innovation, supported by The Research Council of Norway: SFI Metal Production, SFI Center for Advanced Structural Analysis and SFI Manufacturing. These are cross-disciplinary R&D programs with a frame of eight years. For more information, see note S8 to the Viability performance statements about public funding.

We also participate in other national and EU-funded R&D projects on post-consumer scrap recycling technology, following market demand for products with a low carbon footprint. Our R&D program includes joint projects with external research institutes such as SINTEF, NTNU, IFE and the University of Oslo in Norway, RWTH Aachen in Germany and the University of Auckland in New Zealand.

Hydro has been a partner since 2016 in NAPIC, the NTNU Aluminium Product Innovation Center. Its purpose is to develop new aluminium applications. A consortium that comprises several downstream industries has been established and five different faculties at NTNU are participating. In order to support and speed up the activity, Hydro is sponsoring an NTNU Professor in this area for five years, from autumn 2016.

Another example is participation in the AMAP (Advanced Metals and Processes) Research Cluster at RWTH Aachen, where among others, one BMWi-funded project deals with energy- and resource-efficient recycling of organically contaminated aluminium scrap.

Status on Better Bigger Greener

The Better-Bigger-Greener program was launched in 2015, and included a number of strategic targets for the period 2016-2025. A number of these targets were negatively impacted by the Alunorte curtailment in 2018-2019, including the improvement programs. The table below summarizes the targets and status per end 2019 for the relevant targets.

Mid-term strategic goals

	Ambitions	Medium-term target	Timeframe	2019 progress	Comment
Better	Extend technology lead with Karmøy Technology Pilot	Full ramp-up	Q2 2018	Jun 27, 2018	Completed
	Best available technology or similar implemented for treatment, storage and use of bauxite residue	New press filters in full operation	2019	Ramp-up of press-filters delayed due to Alunorte embargo	Delayed
	Reduced waste to landfill	60 percent reduction compared to a 2010 baseline ¹⁾	2020	Target not reached	New waste target established
	Maintain zero tolerance on corruption	No instance of corruption	Long-term	Two instances of substantiated corruption in 2019	Target continued, introduction of biennial integrity survey
		Roll-out of revised Code of Conduct, including updated guidance documents within key topics		Code of Conduct rolled out through mandatory e-learning and town-hall meetings	Completed
	Improve safety performance, strive for injury free environment	TRI <2 ²⁾	2020	3.0	Ambition continued; target definition to be replaced at Group level
	Hydro scores in the top 25 percent on the Employee Engagement index	Top 25 percent ³⁾	2020	Top 25 percent	Completed
	All employees participate in the people performance and development process	90 percent ⁴⁾	2020	92 percent	Completed
Differentiate through product innovation, quality and service	min. 1 step change/yr	Annually	1 step change	Completed	
Bigger	Increase nominal automotive Body-in-White capacity	200,000 mt/yr	2017	Ramping up, qualifications ongoing	Ambition included in new improvement program
	Complete ramp-up of UBC recycling line	>40,000 mt/yr	2017	Run-rate of 40,000 mt/y achieved in 2nd half of 2019	Ambition included in new improvement program
	Deliver additional hydropower production volumes through upgrades/sustaining investments	~ 0.1 TWh	2020	Continuous progress	Continuous progress
	Realize technology-driven smelter capacity creep	200,000 mt/y	2025	35,000 mt/yr ^{5) 6)}	Continued, subject to positive business case ⁶⁾
Greener	Become carbon-neutral from a life-cycle perspective	Zero	2020	Achieved in 2019	Closed. New climate strategy launched
	Deliver on reforestation ambition	1:1 ⁷⁾	Continuous	On track	Ambition continued
	Increase recycling of post-consumer scrap ⁸⁾	>250,000 mt/yr	2020	175,000 mt/yr ⁹⁾ 1.57 mt CO2e/mt aluminium	Ambition replaced with a new target
	Continuously reduced specific GHG emissions/mt from electrolysis	EU benchmark	Long-term		
	Making a positive difference	Contribute to quality education and capacity building for 500 000	2030	Implement reporting methodology to track progress	Target continued
		Supplier development within HSE and human right issues	Long-term	Develop and test new solution to initiate and track improvements	Target continued

- 1) Excluding tailings and bauxite residue. It also excludes construction and demolition waste.
- 2) TRI, total recordable injuries per million hours worked, includes own employees and contractors.
- 3) Currently 78% according to the external norm.
- 4) Excluding Extruded Solutions in 2018.
- 5) Original target of 150,000 mt/yr will not be met by 2020.
- 6) Production creep achievements included in the new improvement program
- 7) From 2018 the target covers two hydrological seasons. This revised definition takes into account the nature of the mining cycle, and the time lag is necessary to ensure quality rehabilitation to restore biodiversity.
- 8) Includes Hydro's share of recycling in Alunorf.
- 9) Original target of 250,000 mt/yr will not be met by 2020.



Risk review

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113	Hydro financial position and key financial exposures
113	Legal proceedings

Quick overview

Hydro is subject to a range of risks which may affect its business operations, financial condition and results of operations, and/or which may cause damages to individuals, assets, reputation and/or external environment. This includes:

- Changes in the regulatory framework or political environment in which Hydro operates.
- Risks of unfavourable macroeconomic developments.
- Hydro is exposed to competition from China, which could have an impact on market prices and demand for our products.
- Negative impact from investigations, legal proceedings, material CSR incidents or major non-compliance with internal or external regulations
- Risks which could result in disruptions to Hydro's operations or damage to property.
- Interruptions to critical parts of Hydro's supply chain.
- Significant risk and uncertainty related to major projects and acquisitions.
- The threat of cyber-attacks.
- Potential inability to achieve or maintain the operational targets necessary to secure the competitiveness of the company's business.
- Occupational health and safety and security risks.
- Physical climate related risks, risks related to the transition to a low-carbon economy and other environmental risks.

Risk management in Hydro is based on the principle that risk evaluation and mitigation is an integral part of all business activities. A core strategy to reduce the risks related to weak economic and unfavorable market developments is the continual improvement of our competitive and cost position, differentiated capital allocation, as well as maintaining a solid financial position and strong creditworthiness. Hydro's integrated value chain plays a role in mitigating risk, through earnings diversification.

Major risks

Hydro has developed and implemented an enterprise risk management model, approved by the Board of Directors. In accordance with this model, risk factors that are relevant for Hydro's business are continuously identified, analyzed, addressed and monitored. Risk management is an integral part of our business activities where strategic and incident risks are managed at Group and Business Area levels respectively.

Hydro's corporate staffs establish and develop policies and procedures for managing risk and coordinate an annual overall enterprise risk assessment. Major risks are analyzed and managed according to Hydro's risk appetite, through the annual strategy process. Mitigating actions are followed up, on an ongoing basis, as part of our internal performance review structure. In order to improve risk management, including ensuring mitigating actions correspond with appetite, Hydro's ERM process is currently being revised. The main process improvements include more granularity in risk descriptions and evaluations, and a more distinct differentiation between strategic and incident risks.

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Below is a description of some of the principle risks identified that may affect business operations, reputation, financial condition, results of operations and, ultimately share price. Some of the mentioned risks might have a positive business impact or represent a business opportunity, whereas the focus in the description below is on downside risk. Whilst this report is accurate at its time of generation, readers are reminded that risks will emerge, increase, decrease or change with time and events. All information in this report should be carefully considered by investors, in particular, the risks described in this section.

Changes in the regulatory framework or political environment in which Hydro operates could have a material effect on the company

Hydro needs competitive and predictable framework conditions. Hydro is subject to a broad range of laws and regulations in the legal jurisdictions in which we operate. These laws and regulations impose stringent standards and requirements and potential liabilities. Some examples include accidents and injuries, the construction and operation of our plants and facilities, taxes and tariffs, air and water pollutant emissions, the storage, treatment and discharge of waste waters, the use and handling of hazardous or toxic materials, waste disposal practices, and the remediation of environmental contamination, among other things. Changes in such laws and regulations, or changes in the way these laws and regulations are interpreted or enforced, may impact Hydro's operations.

Hydro's operations include extracting and refining bauxite resources and utilizing water resources for the generation of power. Such activities have increasingly been subject to local and regional tax regimes which are separate from, and in addition to, national tax regimes such as corporate income tax.

There is a risk of increased network tariffs for Hydro's smelters in Europe, mainly due to the development of renewable energy sources and upgrades and expansions of transmission systems. Such increases could have a material impact on Hydro's cost of power, which again would have a material impact on Hydro's operating results. As an example, the Norwegian transmission system operator, Statnett SF has increased and proposed further amendments to the Norwegian tariff model which may, if adopted, result in increased tariffs for the aluminium industry.

Also, the Norwegian grid tariff model of 2015 is currently subject to a state aid complaint to the EFTA's Surveillance Authority, alleging that certain aspects of the model constitutes unlawful state aid. If a formal investigation is opened, and the complaint is successful, this could lead to a repayment request towards Hydro from the Norwegian state for awarded rebates from 2015.

In Brazil, the tax system is complex and volatile, with a broad range of direct and indirect taxes levied at the federal, state and municipal levels (ref. Regulation and Taxation section of this annual report). Over the past several years, state finances in Brazil have deteriorated, which could lead to mounting pressure to increase tax revenues.

In 2018 Public Auditing Prosecutors for the State of Pará (MP-C/PA) initiated a general process before the State Accounting Court to better understand approvals, compliance and transparency of tax incentives established by the State of Pará. A tax reform is under discussion and regulatory changes (in particular on ICMS) or a discontinuation of the ICMS deferral would materially adversely affect Hydro's operating results from its Brazilian operations.

Failure to comply with the requirements of the Brazilian National Mining Agency with respect to exploration permits and mining concessions may result in a loss of title. Third parties (including, but not limited to, indigenous persons) may dispute the right to conduct mining or exploration activities.

Qatalum, a joint venture which Hydro owns 50/50 with Qatar Petroleum, was established in 2007 and started its first production in December 2009. Qatalum was at the outset granted a ten-year income tax holiday, expiring in September 2020. A tax reform came into effect from 2010, which introduced a generally applicable corporate income tax rate of 10 percent. A tax rate of 35 percent applies to entities with oil and gas operations or where the activities are carried out under an agreement with the government or entities owned by the government, unless such agreement specifies another tax rate. According to the Qatalum joint venture agreement, the generally applicable tax rate will apply after the expiry of the tax holiday. It is Hydro's position that the generally applicable income tax rate, currently at 10 percent, shall apply to Qatalum after the expiry of the tax holiday.

Environmental regulations have continued to tighten in various jurisdictions over recent years due to increased national and international environmental targets. Recent major incidents in Brazil (e.g. the failure of both the Samarco and Brumadinho tailings storage facilities) have increased public awareness and pressure towards authorities and politicians to impose further and stricter regulations and monitoring of the mining industry, both within Brazil and across the industry as a whole. In particular, we have seen a tightening of regulations pertaining to tailings storage facilities within Brazil and the development of an independent International Standard for Tailings Storage Facilities (to be launched 2020) which aims to drive a step change in the safety of tailings storage facilities worldwide. In this context of tightening national regulations and international expectations, additional focus and/or resources may be needed to ensure our operations continue to meet both regulatory requirements and stakeholder expectations.

Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions. Hydro has substantial smelter operations located in Europe and other regions as well as alumina refining operations located in Brazil. Aluminium production is an energy-intensive process with significant environmental emissions, especially emissions into the air, including CO_{2e}. An increasing number of countries have introduced, or are likely to introduce in the near future, legislation with the objective of reducing greenhouse gas emissions. Due to the Paris climate accord conference in December 2015, there is a general belief that the political framework for regulating emissions of greenhouse gases will accelerate, as we are gradually witnessing today. There is also expected to be a focus on technology improvements leading to lower emissions.

A new EU directive on emission trading scheme (ETS) for the years 2021-2030 is now being finalized based on earlier agreed emission targets for 2030. On December 11th, the new EU Commission presented the European Green Deal. This deal includes both a proposal for the European "Climate Law", protecting the 2050 climate neutrality target in legislation, and a comprehensive plan to increase EU's emission reduction target for 2030. A carbon border tax aimed at shielding energy-intensive industries in the EU against cheaper imports from countries with less strict climate policies is also being discussed. Hydro is exposed to changes in the CO_{2e} price, the level of free allocation for direct emissions, and the indirect cost of CO_{2e} included in the power price.

Hydro has been an active participant in the development of international frameworks on climate change and greenhouse gas emissions supporting the establishment of a level playing field for global aluminium production. We engage in significant R&D activities focused on reducing energy consumption and improving electrolysis efficiency including anode consumption which is the main source of CO_{2e} emissions from our smelter operations. Hydro has the ambition to reduce own emissions of CO_{2e} by 10 percent in 2025 and 30 percent by 2030.

Hydro is engaged in a systematic dialogue with local, state and federal politicians, industry associations, non-governmental organizations and local communities regarding the regulatory challenges facing its operations. The focus of this dialogue is on Hydro's contribution to a sustainable aluminium value chain and underlines the need for competitive and predictable framework conditions for our operations. These efforts may fail or prove to be inadequate to mitigate the risks we face regarding changes in the regulatory framework or political environment in which we operate.

Hydro is exposed to macro-economic developments, including price and currency risk, demand/supply balances, and changes in global trade policy framework

The aluminium industry is pro-cyclical with demand for products closely linked to economic development. This results in volatility in the market prices for aluminium products in periods of macroeconomic uncertainty or recession. Specific incidents with a macro-economic impact such as the US-Iran conflict or a major epidemic outbreak could also have an impact on Hydro. Macroeconomic development and political instability also drive changes in currency rates, which have a significant effect on Hydro's cost and competitive position. A large share of Hydro's operations has production cost in local currencies, in countries such as Norway, Germany, Brazil, Canada and Australia. If these currencies appreciate against the USD, this will increase cost and may weaken Hydro's global competitive position relative to production from other regions. Aluminium products are traded globally, and therefore affected by the development in global trade flows, trade frameworks, tariffs and anti-dumping legislation.

After the outbreak of the coronavirus (COVID-19), authorities in an increasing number of countries have taken strong measures to reduce the spread of the virus. This is likely to reduce the global economic activities for a certain period of time, which again will affect the demand for aluminium in such period. Further, due to disruptions in the supply chain, our suppliers, Hydro and Hydro's customers may be inhibited from receiving raw materials, which again may disrupt Hydro's production or sale of products. Except for the macro-economic effects, the situation has currently had limited effect on Hydro's operations, but if the situation continues or escalates, it may have a significant effect on Hydro's financial results. Hydro is monitoring the situation carefully, and is continuously working to find mitigating solutions if the situation continues or escalates.

Hydro is involved in all parts of the aluminium production value chain and therefore exposed to changes in prices of aluminium, alumina and bauxite. In the past decade global aluminium oversupply and high global stock levels, have had a dampening effect on LME prices. Alumina price indices respond to fundamental global supply and demand balances as alumina storage capacity is very limited, in particular outside China. The cost structure of the marginal producers hence drive pricing over the medium term. Curtailment of alumina production from Alunorte leading to an increased alumina price impacted Hydro's profitability in 2019. Increased bauxite export from Guinea and lifting of the bauxite mining ban in Malaysia could have an impact on the bauxite market going forward.

Following improved market conditions in 2016 and 2017, uncertainty around continued strong growth outlook grew in the latter part of 2018. This trend continued into 2019, with further increase in geopolitical and macroeconomic uncertainty, causing weak industrial growth both in US and European markets in addition to slowing growth also in China and other Asian countries. Downstream aluminium markets were directly affected by this development, and key segments such as transportation and construction experienced negative growth in 2019. In the event that this development continues, slower economic growth would further affect demand in key downstream markets.

Global trade framework and protectionism are moving higher on the agenda, not least through the role of WTO, the new EU legislation on dumping products, Brexit and the agenda of the current US administration. Hydro is following the conflict between Iran and the US, including evaluations of potential direct and indirect impact on Hydro's business operations and the need for mitigating actions where this is possible.

Following the investigation under Section 232 of the Trade Expansion Act of 1962 on steel and aluminium, on March 8, 2018, a 10-percentage tariff on imports to the US of primary aluminium and most fabricated products was announced, effective March 23, 2018. The objective of the tariff is to enable US primary aluminium production to reach an average capacity utilization of 80 percent, an increase from the current 48 percent (restart and/or ramp-up of up to five possible smelters). Even with smelter restarts, the US remains a major deficit region for aluminium, and will need to attract metal imports. So far, the tariff has been transferred to the consumer through a parallel increase in the Mid-West premium. However, the indirect long-term effects of the tariffs on aluminium in the US or other markets remain uncertain and could have a negative impact on Hydro's business.

The majority of Hydro's upstream, Bauxite, Alumina and Primary aluminium capacity, is located in countries where fluctuations in commodity prices are reflected in their exchange rates such as Norway, Brazil, Canada and Australia. There is a fairly strong historic correlation supporting this relationship, however with a volatility around the trend. If our main cost currencies strengthen going forward, this will increase our operating cost and may weaken our global competitive position relative to production from other regions.

Hydro's core strategy to reduce the risks related to unfavorable economic and market developments is the continuous improvement of our business in terms of operational efficiency, cost reductions, enhanced commercial strategies across the value chain and diversification of business across markets. These efforts help us to partly offset the effects of low market prices and raw material cost increases. Hydro is engaged in a systematic dialogue with politicians and trade and industry associations regarding the global trade framework.

In order to secure financial liquidity, we concentrate on maintaining a strong balance sheet, sufficient undrawn credit facilities, capital discipline and a continued focus on working capital. Hydro has established clear priorities and guidelines for capital allocation. This is critical in order to deliver on the

company's strategic direction. The strategy is to allocate more growth and return-seeking capital to the areas that have a more stable earnings profile and that have delivered returns above their cost of capital in the past. The goal is to run a dynamic capital allocation process that supports financial and investing flexibility, continuous review and reallocation as well as stimulate internal competition for capital, both between and within the business areas. Excess cash flow might be allocated to growth opportunities, or to share buybacks or additional dividend payments as alternative investments.

However, the cost reductions, improvements and capital allocation that we target may prove to be insufficient to achieve a sustainable level of profitability for our business operations in the event of an extended period of low aluminium prices, significant strengthening of our local currencies, relatively high costs for key raw materials, or weak market demand.

Hydro is exposed to competition from China, which could have an impact on market prices and demand for our products

China is the world's largest consumer and producer of aluminium, with more than half of the global production capacity. As a result, changes and developments in aluminium supply and demand in China have a significant impact on global market fundamentals.

Hydro is exposed to the development in China broadly on three levels; 1) although the explicit effect on Hydro is limited, China's increased demand for imported bauxite and the fulfillment of its requirements affect global bauxite prices, 2) the risk of Chinese surplus aluminium production (i.e. increased capacity utilization) negatively affects prices outside China and 3) increases in Chinese exports of aluminium semis and fabricated products affect primary demand and demand for semi-fabricated products in the importing regions such as Europe and the US (Hydro core markets) and Asia (Hydro's export markets).

Chinese alumina refineries and, consequently, aluminium smelters are dependent on imports of bauxite. Imported bauxite has traditionally been sourced from the Pacific region, with Australia, Indonesia and Malaysia as major suppliers. Following export restrictions imposed in Indonesia and Malaysia, increasing bauxite volumes have become available from Guinea to supply Chinese demand since 2016. While the increased export volumes from Guinea have removed the risk of a bauxite supply shortage for China, sourcing from Guinea increases the freight distance and relative costs compared with Pacific supply sources.

In past years, China has followed a policy of promoting a balanced internal market for primary aluminium including incentives to discourage the export of primary metal while encouraging domestic production of more labor-intensive semi-fabricated and finished aluminium products. Over the last years, overcapacity in China led to a continued rise in exports in the form of semi-fabricated products. Such exports affect metal prices outside China. Exports from China have varied considerably, driven, amongst other factors, by periodic arbitrage opportunities between Chinese and international metal prices. Exports have increased in volume over the last years. The Chinese central authorities have for several years voiced their concerns regarding the

market surplus and inadequate implementation of regulations to discourage further smelter construction. Since 2017, supply-side reform has been enforced across several industries, including aluminium. The target was smelter capacity deemed to be illegal, i.e. not possessing all necessary authorizations. An estimated 3 million tons of capacity has subsequently been closed down. An increase in the oversupply of primary metal in China may lead to higher export of rolled and extruded downstream products, affecting demand for Hydro's metal products.

Our dedicated improvement programs are the key strategies aimed at maintaining and improving our relative position on the industry cost curve. This is further supported by our focus on producing value-added products and exposure to different parts of the value chain and product segments. In 2019 Hydro launched a new strategic agenda aiming to lift cash flows and returns with extensive improvement and restructuring efforts across its business areas, while highlighting sustainability as a basis for the company's positioning. Hydro has established clear priorities and guidelines for capital allocation. This is critical in order to deliver on the company's strategic direction. However, the targeted cost reductions and improvements may prove to be insufficient to achieve a sustainable level of profitability for our business operations in the event of an extended period of low aluminium prices, stronger local currencies, relatively high costs for key raw materials or weak market demand, or an extended period of significantly increased aluminium products exports from China.

Hydro could be affected by material CSR incidents, investigations, legal proceedings, or major non-compliance with laws and regulations

Hydro could be negatively affected by criminal or civil proceedings or investigations related to, but not limited to product liability, environment, health and safety, alleged anti-competitive or corrupt practices or commercial disputes. In addition, Hydro is exposed to allegations or perceived failures to behave in a socially responsible manner and to manage social impacts, particularly related to human rights breaches. Infringement of applicable laws and regulations could result in fines or penalties, costs of corrective work, the suspension or shutdown of our operations and damage to the company's reputation.

In addition, Hydro is exposed to actual or perceived failures to behave in a socially responsible manner and to manage social impacts, particularly related to human rights breaches. Such failures could result in significant, negative publicity and potential serious harm to Hydro's reputation. Reactions by key stakeholders and communities in which Hydro operates could also interfere or interrupt the operations of our business.

In order to manage social risks and opportunities, Hydro has several directives, policies and procedures setting out requirements and guiding implementation throughout the company. The CSR strategy defines priorities and overall goals.

Hydro is also exposed to social and human rights risks in the supply chain, joint ventures, and in other parts of the Brazil operations (bauxite mining and transportation).

Hydro Extrusion Portland, Inc. (formerly Sapa Profiles, Inc.) (SPI), a Portland, Oregon-based indirect subsidiary of Hydro Extruded Solutions AS (formerly Sapa AS) (Hydro), and SPI's U.S. parent company, Hydro Extrusion USA, LLC (formerly Sapa Extrusions, Inc.) (SEI) entered into agreements in April 2019 to resolve the investigations by the United States Department of Justice (DOJ) Civil and Criminal Divisions regarding certain aluminum extrusions that SPI manufactured from 1996 to 2015, including extrusions that were delivered to a supplier to NASA. SPI pled guilty to one charge of mail fraud, received three years of probation, and paid approximately NOK 400 million. SEI separately entered into a deferred prosecution agreement in which it admitted to mail fraud, but the prosecution of the charge is deferred for three years, subject to SEI's fulfillment of certain obligations. As part of the share purchase agreement between Hydro and Orkla ASA, Orkla ASA indemnified Hydro for 50 percent of the liability related to these investigations.

Hydro's Board-sanctioned Code of Conduct requires adherence with laws and regulations as well as global directives and procedures and is systematically implemented and maintained through our compliance system. The Hydro compliance system consists of numerous measures to reduce the risk of non-compliance. The content of such measures differs between relevant compliance risk areas, but can be grouped into four categories: preventing, detecting, reporting and responding. Hydro's global operations entails a wide array of compliance risks. Mitigation of such risks, both financial and non-financial, apply the same system. The compliance risks facing Hydro is continuously monitored and evaluated as part of the Enterprise Risk Management process. Prioritized risk areas are HSE, Financial reporting, anti-corruption, data privacy, the EU General Data Protection Regulation and competition law. Hydro's supply chain is included in the scope of risk mitigation, for instance by procedures for integrity risk management of business partners. Hydro is active in, and has a long tradition for, conducting dialogue with the relevant parties affected by our activities. These include unions, works councils, customers, suppliers, business partners, local authorities and non-governmental organizations. The above-mentioned controls and initiatives may, however, be insufficient to mitigate these risks.

Hydro could be affected by operational disruptions or other major incidents and may not be able to maintain sufficient insurance to cover all risks related to its operations

Hydro is exposed to a number of risks and hazards which could result in disruptions to operations. Breakdown of critical equipment, power failures or other events leading to production interruptions in key plants could have a material adverse effect on our financial results and cash flows. Some operations are located in close proximity to sizable communities, and major accidents could result in substantial claims, fines or significant damage to Hydro's profitability, and or reputation.

Hydro obtains its bauxite from two main sources, the majority is via a 244 km pipeline from Paragominas to Alunorte, the remainder transported by vessel from MRN to Alunorte, any major disruption to this supply of bauxite to Alunorte would have material adverse effects on our operations. In 2018, The extreme rainfall and flooding in

Brazil resulted in the Brazilian authorities forcing Hydro to reduce Alunorte's production to 50 percent of its capacity. This had a significant negative effect on Hydro's operations and financial results in 2018 and 2019.

In addition, the potential physical impacts of climate change on our facilities and operations is highly uncertain and may cause disruptions in our operations. Effects of climate changes may include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels.

In order to reduce the risk of disruptions to our operations and potential resulting consequences, we perform regular risk assessments and engage in comprehensive emergency preparedness training for key managers and employees. The scope of risk assessments has been expanded over time. We have also focused on increasing our resilience against power outages including automation of substations and power generating facilities as well as improved back-up facilities. Although Hydro maintains insurance to protect against certain risks in such amounts as it considers reasonable and in accordance with market practice, its insurance may not cover all the potential risks associated with Hydro's operations.

Hydro is exposed to supply chain concentration risk and may experience disruption in supply of alumina, anodes or certain alloy materials

Hydro is exposed to risks related to supply chain concentration. This includes parts of the supply chain with one or a limited number of suppliers, or where multiple suppliers are concentrated in the same area and where there is a risk of simultaneous supply interruptions. Such interruptions could be a result of changes in regulatory framework, operational disruption, major public health issues etc. Hydro's assets within Bauxite & Alumina are concentrated in Brazil and include the Paragominas bauxite mine, Alunorte alumina refinery and the 244km bauxite slurry pipeline connecting the two. As Hydro receives almost all of its alumina from Alunorte, these assets are critical for the supply of alumina to the rest of the Hydro Group, both in Brazil and Europe, and Hydro is reliant on their ability to maintain stable operations. Hydro's exposure to supply chain concentration risk also includes risks related to the supply of anodes and certain alloy materials from China.

Hydro may fail to realize sufficient value in the execution and implementation of major projects or business acquisitions

Hydro makes significant capital investments and acquisitions as part of its business development and may not be able to realize the benefits expected from such transactions and projects. Major projects and acquisitions are subject to significant risk, and uncertainty in making the investment evaluation, project execution and subsequent operations. Acquisitions may also contain significant unidentified risks and liabilities.

Hydro aim to bring Alunorte up to a new environmental standard. After the rainfall in February 2018, we have been implementing and working with several upgrades to the plant. Three new water basins have already increased the water storage capacity by 350 percent and a capacity increase of 50 percent of the water treatment facility is under

construction. By 2020 Alunorte will have invested BRL 675 million in improvements in its systems for receiving, controlling, pumping and treating water. In addition to the new basins and the water treatment facility, construction include new pumping systems and water pipes, new instruments for automation and control and new cameras for monitoring the basins.

Hydro has made a final build decision to invest NOK 1.4 billion at the aluminium plant in Husnes, Norway, to upgrade and start up the plant's second production line, which will double the aluminium production of the plant and create 90 more jobs. As part of the restart of the production line, which was shut down in 2009, Hydro will introduce new technology elements that are expected to lead to better performance at the plant. The line is expected to begin operations in the first half of 2020.

Hydro has made major investments in emerging and transitioning markets and future investments may occur or may be more likely to occur in countries characterized as emerging and transitioning markets. Investing in emerging and transitioning markets is demanding in terms of organizational capacity, cultural understanding, effort, knowledge and experience, and Hydro may not be capable of succeeding in expanding its business in such markets.

At the end of 2019, around half of our smelter capacity was owned through interests in joint ventures and partly-owned subsidiaries. Investments as a minority partner in jointly owned entities reduces Hydro's ability to manage and control this part of its portfolio. Investments in jointly owned entities, including those in which we hold a majority position, also entail the risk of diverging interests between business partners, which could impede Hydro's ability to realize its objectives, repatriate funds from such entities and to achieve full compliance with Hydro's standards.

In order to mitigate the risk associated with the execution and implementation of major projects, all capital projects in Hydro, including M&A projects, are subject to a formal, comprehensive, internal review process prior to making any commitment. Hydro is continuously working to improve our project evaluation and execution processes. This includes improving risk assessment, methodologies and clarifying and refining minimum return requirements for different parts of the value chain. These measures, may however, prove to be insufficient to mitigate the risks we face in the execution and implementation of major projects or business combinations.

Hydro is exposed to the threat of cyber-attacks which may disrupt its business operations, and result in reputational harm and other negative consequences

Hydro's IS/IT infrastructure is a critical element in all parts of our operations, ranging from process control systems at production sites to central personnel databases and systems for external financial reporting. Cyber-crime is increasing globally, and Hydro is exposed to threats to the integrity, availability and confidentiality of systems. Threats may include attempts to access information, ransomware attacks, destructive installation of viruses, denial of service and other digital security breaches.

On March 19, 2019, Hydro was hit by an extensive cyber-attack. The attack affected our entire global organization, with the business area Extruded Solutions having suffered

the most significant operational challenges and financial losses. Hydro's other business areas – Bauxite & Alumina, Primary Metal, Rolled Products and Energy – were able to produce close to normal despite the attack, although based on work-intensive workarounds and manual procedures. Hydro have now resumed normal operations. During and after the attack, Hydro worked with all available internal resources and in close cooperation with external expertise to resolve the situation. All PCs and servers across the company were reviewed, cleaned and safely restored, according to strict guidelines to ensure security and safety. Encrypted PCs and servers were rebuilt based on back-ups.

Hydro has launched several initiatives to increase the robustness of its IS/IT infrastructure against malicious attacks by improving system infrastructure and educating employees to develop and improve secure work processes and routines. We have reorganized our security team to better detect and respond to cyber incidents, and the company has a robust cyber insurance in place with recognized insurers. However, these initiatives may fail to deliver the expected results or prove to be inadequate to prevent cyber-attacks or security breaches that manipulate or improperly use our systems or networks.

Hydro may be unable to achieve or maintain the operational targets necessary to secure the competitiveness of our business

Hydro operates in a highly competitive market where operational excellence in all parts of the value chain is required to reach and maintain a competitive position. This includes each step of the business process from the sourcing of raw materials, to physical operations of each plant, and the commercial optimization of the product portfolio. Disruptive technological development by competitors could threaten Hydro's competitiveness. Failure to create an environment and competence which enables the organization to continuously achieve increased operational targets will reduce the competitiveness of our business.

Operational performance may also be inhibited by other factors such as the inability to develop necessary technical solutions; changes or variations in geologic conditions, environmental hazards, weather, climate change or natural phenomena; mining and processing equipment failures and unexpected maintenance problems and interruptions. Driving improvements and performance is heavily dependent on achieving sufficient capacity and skill in the workforce. Substantial parts of the Brazilian operation are located in remote areas where it has been difficult to attract and retain the competence required to achieve our performance goals for these operations. In addition, Hydro's bauxite reserves in Brazil and the estimated quantities of bauxite that Hydro expects can be economically mined and processed are subject to material uncertainties.

In February 2018 the region of Barcarena in northern Brazil suffered from flooding following two days of extreme rainfall. The areas flooded included Hydro's Alunorte alumina refinery. Brazilian authorities and local communities were concerned that flooding might have led to harmful spills into the surrounding areas. The authorities ordered several measures against Alunorte while reviewing the situation. The measures restricted the production at the refinery to 50 percent of its capacity. Consequently, Alunorte's primary bauxite source Paragominas and Hydro's part-owned

subsidiary Albras aluminium plant, both in the state of Pará, reduced their production by 50 percent. In May 2019, the federal court in Belem, Brazil, lifted the production embargo on the Alunorte alumina refinery under both the criminal and civil lawsuits, allowing Alunorte to ramp up towards normal production. In September 2019, the federal court in Belem, Brazil, lifted the final embargo on Alunorte's new bauxite residue disposal area (DRS2), allowing Alunorte to resume activities of installation and commissioning at DRS2, ending a 19-month embargo period which has restricted activities at the plant.

In 2019, new improvement programs have been launched across the company, representing NOK 7.3 billion in EBIT improvements over the next five years. The improvements include the curtailment reversal of the Brazilian assets with the effect of NOK 2.7 billion. Unrelenting focus on continuous improvement is necessary for Hydro to maintain and further improve the competitiveness of our portfolio.

Fit4Future, a part of the overall improvement program, targets to contribute with 0.5 BNOK mainly through increased efficiency within staff functions across Hydro, of which Global Business Services (GBS) delivers most of the gains. IS/IT is the main driver within the functions. Manning reductions represent around one third of the total. More information about Hydro's performance and improvement programs can be found in the Strategy, performance and target section of this annual report.

Another element of the overall improvement program is the strategic review and comprehensive restructuring of the Rolled Products business area to mitigate the declining profitability the business has faced over the last years. The aim is to significantly turn this development around by lifting organizational and operational efficiency as well as shifting the product portfolio away from declining markets and towards growth markets like automotive and can. The target is a NOK 0.9 billion improvement by 2023. These improvements will be realized, while also continuing the strategic review of the Rolled Products business.

Our operations, and in particular our aluminium smelters, are dependent upon large volumes of energy. Securing new, competitive energy sources for our business is a key operational target and our business could be materially adversely affected by the inability to replace, on competitive terms, our long-term energy supply contracts when they expire, or our own electricity production, to the extent that concessions revert to the Norwegian state. As an example, the power purchase agreement from 2014 for Hydro's smelter Svalco expires in 2021 and needs to be replaced. Hydro has, over the last years, secured several long-term power supply contracts in Norway. In 2016, an important regulatory change was implemented in Norway that allows for private ownership to waterfalls through companies with liability, often referred to as industrial ownership or ANS/DA, enabling further progress on Hydro's work to re-structure ownership and protect the value of our power assets.

A cornerstone in our work to reach operational targets and secure the competitiveness of our operations is the use of standardized Business Systems to structure and formalize continuous improvement work. Improvements are also supported by benchmarking to identify and implement best

practices between our business areas. We are also engaged in a number of initiatives to identify and secure competitive energy supplies for our operations and are actively involved in promoting a sustainable energy policy in the regions where we operate. However, we may not succeed in achieving or maintaining the operational targets necessary to secure our competitiveness. We may also fail to identify and secure sufficient competitive energy supplies for our operations.

Occupational health and safety, and security risks

Hydro is exposed to occupational health, safety and security risks at sites and whilst on travel. Due to its global operations, Hydro is exposed to major public health issues, such as outbreaks of pandemics or epidemics. These risks have the potential to impact Hydro's employees and contractors, operations of assets, and in specific incidences local communities and reputation.

Hydro is monitoring the development of the Coronavirus disease (COVID-19) and assessing current and potential impact on employees and operations. Initial mitigating actions have been implemented and further mitigating actions are evaluated on a continuous basis.

Based on Hydro's processes and locations, examples of such incidents and risks include, but are not limited to, molten metal explosion, mobile equipment interaction and transportation, working at height, energy isolation, overhead cranes, confined space entry, equipment failure, major fires, occupational illness, chemical spills etc.

There has been a strong drive to improve safety performance throughout the organization, with just under 50 percent of all operational sites total recordable injury free during 2019. Most business areas saw an improvement in total recordable injury performance, and a reduction in the number of high-risk incidents reported.

Internal investigations are routinely initiated after fatal accidents or serious incidents to identify the root causes and avoid recurrences by subsequent implementation of appropriate corrective and preventive actions. Our approach to improve our occupational health, safety and security performance is based on risk management, leadership qualities and worker engagement. Hydro has implemented processes to eliminate serious injury including the development of fatality prevention protocols, also known as the Critical 7: energy isolation, fall prevention, mobile equipment, overhead crane, confined space entry, molten metal safety and contractor management. These processes are aimed at both raising standards and further understanding risks at Hydro sites.

Occupational health improvements are driven by the Work Environment Risk Assessment process that is reviewed and updated frequently and supported by physical and mental health improvement initiatives. Security risks are routinely reviewed, and controls implemented to combat existing and emerging threats with associated emergency and business continuity processes.

All sites are routinely audited to both determine compliance with corporate requirements and to promote benchmarking between operational sites and business areas.

All HSE and security processes aim to utilize the full engagement of all employees and others who work with us and an increased leadership presence on the shop floor.

Climate change and environmental risks

Hydro is exposed to physical climate related risks, risks related to the transition to a low-carbon economy and other environmental risks mainly related to our operations in Brazil. Climate-driven changes in consumer behavior, such as substitution of aluminium by other materials is also a risk to Hydro. In addition to environmental incidents, there are risks related to the effects of known and unknown historical and current emissions to air, water and soil.

Hydro's operations and facilities are subject to risks arising from physical climate change, that may impact Hydro's operations. Effects of climate change include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. The changes may be acute and/or chronic. The risks from climate change could lead to operational and environmental incidents within our operations, for example by flooding of containment basins, increasing temperatures leading to increased emissions from processes etc. that must be considered in our business strategy.

Operational performance, and the occurrence of environmental incidents, is also affected by other factors than physical climate change such as the lack of suitable technological solutions; changes or variations in hydrological and geological conditions; environmental hazards; extreme weather, and other natural phenomena; mining and processing equipment failures and unexpected maintenance problems and interruptions and critical failures to infrastructure integrity that can lead to environmental spills and danger to surrounding communities.

In addition to environmental incidents, there are risks related to the effects of known and unknown historical and current emissions to air, water and soil. These may have legal, financial and reputational consequences and require mitigating actions.

There are risks associated to the transition to a low-carbon economy. Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions, and associated regulatory risk. Hydro's risk exposure mainly relates to, but is not limited to, the cost of CO₂ and stricter emissions abatement requirements, please see "Changes in the regulatory framework and political environment" in this section.

The transition to a low-carbon economy has associated technology and market risks. Hydro's technology may not be able to meet the abatement and emissions requirements set by regulatory bodies: Increased concern over climate change may lead to changes in consumer behavior, increased demand for low-emission products or substitution of aluminium by other materials.

In order to reduce the risks for our operations and potential consequences related to climate change, Hydro performs extensive risk assessments of both physical and transition risks. The scope of the risk assessment is being expanded over time and is based on modelling future weather patterns

and their impact on Hydro's facilities based on existing climate models and scenarios from the IPCC, and scenarios for policy and legal risk, technology, market and reputation risk. Based on this, we have developed a new climate strategy towards 2030, focusing on greener sourcing, greener production and greener products.

A similar approach is also taken for identifying other environmental risks related to our operations, through Environmental Impact Assessments and continuous review of monitoring procedures, control systems and the application of appropriate management procedures.

Hydro has been an active participant in the development of international frameworks on climate change and greenhouse gas emissions supporting the establishment of a level playing field for global aluminium production. We engage in significant R&D activities focused on reducing energy consumption and improving electrolysis efficiency including anode consumption which is the main source of CO₂ emissions from our smelter operations.

Hydro actively engages with academia, research institutions and industry associations on climate change and other environmental topics, such as the Biodiversity Research Consortium and the Aluminium Stewardship Initiative.

These efforts may fail or prove to be inadequate to mitigate the climate change and other environmental risks we are facing.

Hydro financial position and key financial exposures

Hydro's main strategy for mitigating risk related to volatility in cash flow is to maintain a strong balance sheet and an investment grade credit rating. The targeted key financial ratio levels over the business cycle are described in note 7.1 Capital Management.

Hydro's main risk management strategy for upstream operations is to accept exposure to price and exchange rate movements, while at the same time focusing on reducing the average cost position of production assets. In certain circumstances, derivatives may be used to hedge certain revenue and cost exposures. Long term, the only true hedge is cost competitive operations, and the only long-term hedge against market volatility is to maintain a low-cost asset base.

Downstream and other margin-based operations are to a certain extent hedged to protect processing and manufacturing margins against price fluctuations. An operational hedging system has been established to protect commercial contracts from aluminium price fluctuations.

Key financial exposures

Hydro's operating results are primarily affected by price developments of our main products, raw materials, margin developments and to fluctuations in the most significant currencies for Hydro, which are the USD, NOK, EUR and BRL.

To mitigate the impact of exchange rate fluctuations, long-term debt is mainly maintained in currencies reflecting underlying exposures and cash generation, while considering attractiveness in main financial markets. Hydro may also use foreign currency swaps and forward currency contracts to reduce effects of fluctuations in the US dollar and other exchange rates.

The table below show sensitivities regarding aluminium prices and foreign currency fluctuations for 2019. The table illustrates the sensitivity of earnings before tax, interest and depreciation, to changes in these factors and is provided to supplement the sensitivity analysis required by IFRS, included in note 8.2 Financial instruments. These sensitivities do not consider revaluation effects of derivative instruments, which may influence earnings.

Sensitivities with 100% production

Commodity price sensitivity +10%

NOK Million	UEBIT
Hydro Group	
Aluminium	3,660

Currency sensitivities +10%

NOK Million	USD	BRL	EUR
Sustainable effect			
EBIT	3,280	(1,100)	(220)
One-off reevaluation effect			
Financial items	(60)	830	(3,570)

Annual sensitivities based on normal annual production volumes, LME USD 1 750 per mt, USDNOK 9.07, BRLNOK 2.21, EURNOK 10.09.

Legal proceedings

Hydro Extrusion Portland, Inc. (formerly Sapa Profiles, Inc.) (SPI), a Portland, Oregon-based indirect subsidiary of Hydro Extruded Solutions AS (formerly Sapa AS) (Hydro), and SPI's U.S. parent company, Hydro Extrusion USA, LLC (formerly Sapa Extrusions, Inc.) (SEI) entered into agreements in April 2019 to resolve the investigations by the United States Department of Justice (DOJ) Civil and Criminal Divisions regarding certain aluminum extrusions that SPI manufactured from 1996 to 2015, including extrusions that were delivered to a supplier to NASA. SPI pled guilty to one charge of mail fraud, received three years of probation, and paid approximately NOK 400 million. SEI separately entered into a deferred prosecution agreement in which it admitted to mail fraud, but the prosecution of the charge is deferred for three years, subject to SEI's fulfillment of certain obligations. As part of the share purchase agreement between Hydro and Orkla ASA, Orkla ASA indemnified Hydro for 50 percent of the liability related to these investigations.

Authorities and non-governmental organizations have filed several lawsuits related to the Alunorte situation, claiming a

combination of mitigating actions and financial compensation. The argumentation, cost calculation and legal basis for these claims is highly uncertain. In May 2019, the federal court in Belem, Brazil, lifted the production embargo on the Alunorte alumina refinery under both the criminal and civil lawsuits, allowing Alunorte to ramp up towards normal production. In September 2019, the federal court in Belem, Brazil, lifted the final embargo on Alunorte's new bauxite residue disposal area (DRS2), allowing Alunorte to resume activities of installation and commissioning at DRS2, ending a 19-month embargo period which has restricted activities at the plant.

The Group is engaged in a large number of legal proceedings and disputes around the world. As of the date of this Annual Report, based on the Company's current assessment, neither the Company nor any other company in the Group are, nor have during the course of the last 12 months, except for the Sapa investigations described above and the economic consequences of the Alunorte embargos, been involved in any governmental, legal or arbitration proceedings, which may have, or have had in the recent past significant effects on the Company and/or the Group's financial position or profitability.



Shareholder information

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Quick overview

Hydro's share price closed at NOK 32.64 at the end of 2019. The return ex. dividend for 2019 was negative with NOK 6.57, or negative 17 percent.

Hydro's Board of Directors proposes to pay a dividend of NOK 1.25 per share for 2019, for approval by the Annual General Meeting on May 11, 2020, reflecting Hydro's robust financial position, taking into account a demanding year for the company and the volatility in the aluminium industry.

There were 2,068,998,276 issued shares at the end of 2019. A total of 1.6 billion Hydro shares were traded on the Oslo Stock Exchange during 2019 at a value of NOK 54 billion, making Hydro the fifth most traded company on the OSE. The average daily trading volume for Hydro shares on the OSE during 2019 was 6.5 million shares.

Hydro's shares are listed on the Oslo Stock Exchange, while our American Depositary Shares (ADSs) trade on OTCQX International in the US, the premium over-the-counter market tier.

Introduction

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The proposed payment demonstrates the company's commitment to provide a predictable dividend to shareholders. Hydro has a dividend policy of 40 percent payout ratio of reported net income over the cycle with NOK 1.25 per share considered as floor. The average five-year payout ratio is 68 percent.

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Dividend policy

Long-term return to shareholders should reflect the financial value created by Hydro over time. Total shareholder return consists of dividends and share price development. Over time, value creation should be reflected to a greater extent by share price development rather than by dividends. Hydro's policy is in the long term to pay out, on average, 40 percent of net income as ordinary dividend over the cycle to our shareholders. The dividend policy has a floor of NOK 1.25 per share. In setting the dividend for a specific year, Hydro will take into consideration expected earnings, future investment opportunities, the outlook for world commodity markets and our financial position. Share buybacks or extraordinary dividends may supplement ordinary dividends during periods of strong financials, due consideration being given to the commodity cycle and capital requirements for future growth. The total payout should reflect Hydro's aim to provide its shareholders with competitive returns benchmarked against alternative investments in comparable companies.

Hydro's Board of Directors normally proposes a dividend per share in connection with the publication of our fourth quarter results. The Annual General Meeting then considers this proposal in May each year, and the approved dividend is subsequently paid to shareholders in May or June. Hydro pays dividends once each year. For non-Norwegian shareholders, Norwegian tax will be deducted at source in accordance with the current regulations.

Buyback of shares

In periods when earnings are high, Hydro may consider buying back shares in addition to ordinary or extraordinary dividend payments. This consideration will be made in the light of alternative investment opportunities and our financial situation. In circumstances when share buybacks are relevant, our Board of Directors proposes buyback authorizations to be considered and approved by the Annual General Meeting. Authorizations are granted for a specific time period and for a specific share price interval during which share buybacks can be made.

Funding and credit quality

Maintaining a strong financial position and an investment grade credit rating are viewed as important risk mitigating factors, supporting Hydro's possibilities for strategic development of its businesses. Access to external financial resources is required in order to maximize value creation over time, balanced with acceptable risk exposure. To secure access to debt capital on attractive terms, we aim at maintaining an investment grade credit rating from the leading rating agencies.

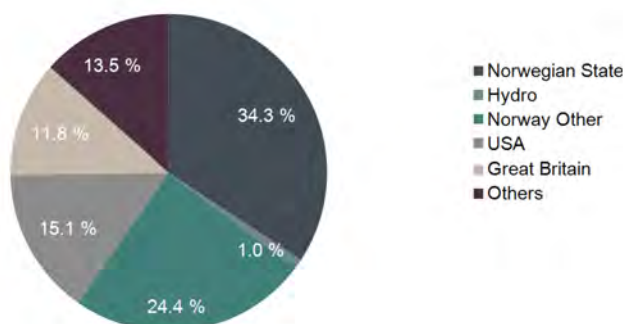
Contributing toward this ambition to retain our credit rating, we intend to keep our funds from operations at a level equal to or above 40 percent of adjusted net debt, in addition to adjusted net debt at a ratio not higher than 55 percent of equity capital over time. In calculating these ratios, we include pension obligations, operating lease commitments, share of net debt in equity accounted investments and certain other debt-like items. For a discussion of these adjustments see Note 7.1 Capital Management in the Financial Statements section of this report.

Major shareholders and voting rights

As of December 31, 2019, Hydro had 55,339 registered shareholders as per the Norwegian Central Securities Depository (VPS). The Ministry of Trade, Industry and Fisheries of Norway was the largest of these with a shareholding of 34.26 percent of the total number of ordinary shares authorized and issued, and 34.62 percent of the total shares outstanding. As of the same date, Capital World Investors owned 5.63 percent of the total number of ordinary shares issued and 5.69 percent of the total shares outstanding, whereas the Government Pension Fund - Norway (Folketrygdfondet) owned 5.32 percent of the total number of ordinary shares issued and 5.38 percent of the total shares outstanding. There are no different voting rights associated with the ordinary shares held by the state.

The Norwegian Ministry of Trade, Industry and Fisheries represents the Norwegian government in exercising the state's voting rights. The state has never taken an active role in the day-to-day management of Hydro and has for several decades not disposed of any of the ordinary shares owned by it, except when participating in the share buyback programs.

Geographical ownership distribution of shares



JPMorgan Chase & Co, as depository of the ADSs, through its nominee company, Morgan Guaranty Trust Company, held interests in 10,929,899 ordinary shares, or 0.5 percent of the outstanding ordinary shares as of December 31, 2019. The interests are on behalf of 282 registered holders of ADSs

All shares carry one vote. It is, however, a requirement of Norwegian legislation that a shareholder can only vote and have preferential subscription rights for shares registered in their name. Shares registered with a nominee account must be re-registered in the Norwegian Central Securities Depository, Verdipapirsentralen (VPS), before the Annual General Meeting in order to obtain voting rights. This requirement also applies to our US-traded ADSs.

Hydro cannot guarantee that beneficial shareholders will receive the notice for a general meeting in time to instruct their nominees to affect a re-registration of their shares. Hydro is organized under the laws of the Kingdom of Norway. It may be difficult for investors to effect service of process outside Norway upon Hydro or its directors and executive officers, or to enforce against Hydro or its directors and executive officers judgments obtained in other jurisdictions. Norwegian courts are unlikely to apply other than Norwegian law when deciding on civil liability claims under securities laws.

Hydro's 20 largest shareholders, December 31, 2019

Shareholder	Number of shares	Ownership interest
Ministry of Trade, Industry and Fisheries	708,865,253	34.3 %
Capital World Investors	116,473,576	5.6 %
Folketrygdfondet	110,114,072	5.3 %
Schroder Investment Management Ltd. (SIM)	59,900,662	2.9 %
The Vanguard Group, Inc.	43,521,268	2.1 %
DNB Asset Management AS	39,785,280	1.9 %
BlackRock Institutional Trust Company, N.A.	39,042,993	1.9 %
KLP Forsikring	30,841,200	1.5 %
Storebrand Kapitalforvaltning AS	30,499,602	1.5 %
Wellington Management Company, LLP	27,747,726	1.3 %
Danske Capital (Norway)	27,735,322	1.3 %
SAFE Investment Company Limited	27,572,769	1.3 %
EARNEST Partners, LLC	22,045,057	1.1 %
State Street Global Advisors (US)	17,504,751	0.8 %
Legal & General Investment Management Ltd.	17,166,646	0.8 %
Antipodes Partners Limited	14,716,727	0.7 %
Nordea Funds Oy	13,442,378	0.6 %
Anima SGR S.p.A.	12,688,906	0.6 %
Dimensional Fund Advisors, L.P.	11,223,500	0.5 %
JPMorgan Asset Management U.K. Limited	9,658,579	0.5 %

Source: The data is provided by Nasdaq through the Share register Analyses services. The data is obtained through the analysis of beneficial ownership and fund manager information provided in replies to disclosure of ownership notices issued to all custodians on the Hydro share register. Whilst every reasonable effort is made to verify all data, Nasdaq can not guarantee the accuracy of the analysis. For a list of the largest shareholders as of December 31, 2019, from the Norwegian Central Securities Depository (VPS), see Note 13 in Notes to the financial statements Norsk Hydro ASA. Due to lending of shares, an investor's holdings registered in its VPS account may vary.

Key figures for the Hydro share

	2019	2018	2017	2016	2015
Share price high, Oslo (NOK)	41.55	62.70	64.15	43.05	47.68
Share price low, Oslo (NOK)	26.49	38.69	41.03	26.00	26.54
Share price average, Oslo (NOK)	33.43	48.61	52.27	34.31	35.58
Share price year-end, Oslo (NOK)	32.64	39.21	62.35	41.30	33.13
Earnings per share (EPS) (NOK)	-0.88	2.08	4.3	3.13	0.99
Dividend per share (NOK) ¹⁾	1.25	1.25	1.75	1.25	1.00
Pay-out ratio ²⁾	-	60%	41%	40%	101%
Dividend growth	-	-29%	40%	25%	-
Pay-out ratio five year average ³⁾	68%	57%	70%	133%	110%
Average Adjusted net cash (debt) including EAI / Equity ⁴⁾	0.37	0.32	0.26	0.14	0.20
Credit rating, Standard & Poor's	BBB	BBB	BBB	BBB	BBB
Credit rating, Moody's	Baa2	Baa2	Baa2	Baa2	Baa2
Non-Norwegian ownership, year-end	40%	41%	47%	45%	40%
Outstanding shares, average	2,047,057,976	2,045,796,971	2,044,105,404	2,042,481,930	2,041,000,645
Outstanding shares, year-end	2,047,648,790	2,046,302,797	2,044,697,348	2,042,894,116	2,041,587,692

1) 2019 dividend per share proposed by Board of Directors, dependent on approval from the Annual General Meeting May 11, 2020.

2) Dividend per share divided by earnings per share from continuing operations.

3) Dividend per share divided by earnings per share from continuing operations for last five years.

4) See note 7.1 Capital management in the Consolidated Financial Statements.

Information from Hydro

Communicating with the stock market is given high priority, and Hydro aims to maintain an open dialogue with market participants. Our objective is to provide sufficient information on a timely basis to all market participants to ensure a fair valuation of our shares. Information that is considered price sensitive is communicated by news releases and stock exchange announcements. We host regular meetings for investors in Europe and the US. The major brokers in Oslo and London publish equity research reports on Hydro. All information about Hydro is published on our website: www.hydro.com

Our annual and quarterly reports are available on www.hydro.com, and our latest annual reports can also be ordered in printed versions from the website.

Two weeks before the announcement of quarterly results, Hydro practices a "silent period", meaning that contact with external analysts, investors and journalists is limited. This is done to minimize the risk of information leaks and potentially unequal information in the marketplace.

Annual General Meeting

The Annual General Meeting will be held at the company's offices at Drammensveien 260, Oslo, Norway, on Tuesday, May 11, 2020, at 10:00 CET. Shareholders who wish to attend are asked to inform the registrar by 16:00 CET on Friday, May 8:

DNB Bank ASA
Registrar's Department
P.O.Box 1600 Sentrum
N-0021 Oslo, Norway

You may also register electronically on our website www.hydro.com/register or via VPS Investor Services. Any shareholder may appoint a proxy with written authority to attend the meeting and vote on his or her behalf. Voting rights are discussed under "Major shareholders and voting rights".

Change of address

Shareholders registered in the Norwegian Central Securities Depository should send information on changes of address to their registrar and not directly to Hydro.

Financial calendar 2020

April 29	First quarter results
May 11	Annual General Meeting
May 12	Shares traded ex-dividend
May 13	Record date for dividend
May 20	Dividend payment date
July 22	Second quarter results
October 23	Third quarter results

Hydro reserves the right to revise these dates.



Corporate governance

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Quick overview

Hydro is a public limited company organized under Norwegian law with a governance structure based on Norwegian corporate law. Our corporate governance has been designed to provide a foundation for value creation and to ensure good control mechanisms. We maintain common requirements in the form of corporate directives that are mandatory for all parts of our organization.

Our corporate directives help ensure that all our employees carry out their activities in an ethical manner and in accordance with current legislation

and Hydro standards. The board of directors has approved our Code of Conduct, which applies to all employees throughout the world, as well as to board members of Hydro and its subsidiaries. The code addresses compliance with laws and other matters such as handling of conflicts of interest and a commitment to equal opportunities for all employees. Our defined programs contribute to compliance with anti-corruption and basic human rights, and other relevant governance areas.

Hydro follows the Norwegian code of practice for corporate governance of October 2018.

About Hydro

Hydro is a public limited company organized under Norwegian law with a governance structure based on Norwegian corporate law. Our share listing is on Oslo Børs, which subjects us to Norwegian securities legislation and stock exchange regulations. In the United States the shares are traded on OTCQX International, the premium over-the-counter market tier, in the form of American Depositary Receipts evidencing American Depositary Shares, which carry the same shareholder rights as ordinary shares.

We have developed our governance structure through cooperation between our corporate management board and our superior governance bodies to secure compliance with relevant laws and regulations, Hydro's corporate directives and to reflect business needs. Development of the governance structure is a continuous process.

We follow the Norwegian Code of Practice for Corporate Governance of October 2018, see page 285. A detailed description of how we comply - including deviations - is presented in the Board of Directors' report. Information regarding our shareholder policy can be found on page 116. Hydro's strategic direction is described in the Board of Directors' report, see page 13.

More comprehensive information about our governance practices, policies and requirements can be found at www.hydro.com/governance.

Global directives and Code of Conduct

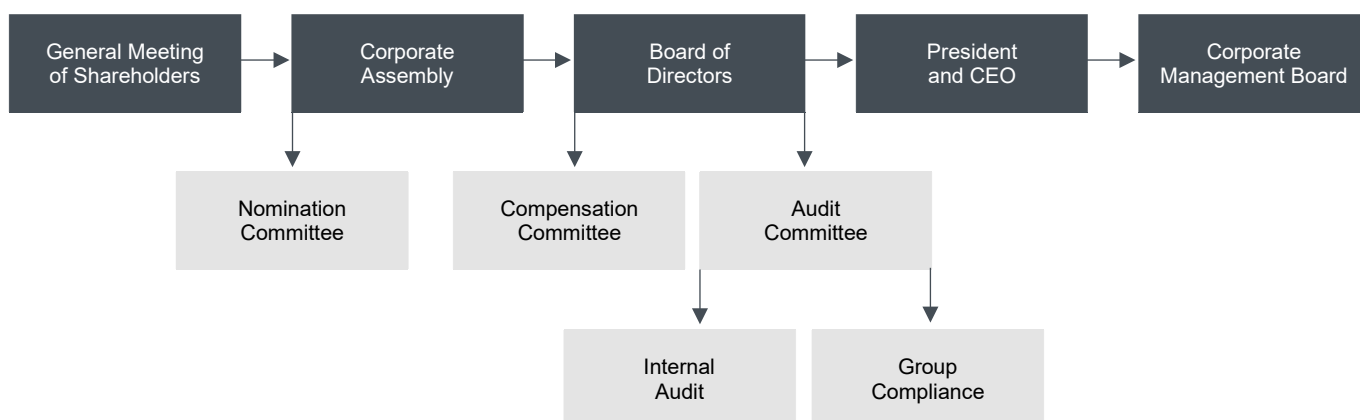
The Hydro Way represents our framework for leadership, organization and culture and is the foundation of our governance system. See page 79 for further information.

Our system is based on the delegation of responsibility to our business areas and to corporate functions whose duties include finance, tax and accounting, HSE, CSR, legal and compliance. In order to maintain uniformly high standards, we set common requirements in the form of constituting documents and global directives. Constituting documents are approved by Hydro's board of directors, the corporate assembly or the general meeting of shareholders, while global directives are approved by the President and CEO. These documents address a number of areas, including health, security, safety and environment (HSE), ethics and social responsibility, strategy and business planning, finance, risk management, and organizational and employee development. This information is made available to all employees.

Hydro's Code of Conduct is a constituting document and applies to all Hydro employees throughout the world, as well as to board members of Hydro and its subsidiaries. See page 87 for more information about Hydro's Code of Conduct, whistleblowing procedure and integrity program, and www.hydro.com/principles for more information regarding our corporate directives. In Hydro, compliance is defined as adherence to applicable laws and regulations as well as Hydro's corporate directives. Specific policies and procedures as well as guidelines have been established to assist line management to adhere to Hydro's compliance requirements. Special emphasis is made on reducing the risk of non-compliance within finance, anti-corruption, competition, health, security, safety and environment.

For legal entities where Hydro holds less than 100 percent of the voting rights, we are working through their boards of directors to promote the principles in Hydro's Code of Conduct and our corporate directives. This includes, but is not limited to, HSE, anti-corruption and human rights.

Governance bodies in Hydro



Business planning and risk management

Hydro's overall goal is to create shareholder value through satisfied customers and motivated and competent employees. We have defined two main processes to ensure that short and long-term targets are achieved.

The portfolio, strategy and business planning process involves strategic and operative planning and results monitoring. The planning, which reflects our ambitions and values, is the basis for the strategies and measures that form the business plans at all levels of our organization. We have defined key performance indicators relevant for each unit, including within finance, human resources, ethics, HSE and climate change, in addition to unit-specific operating targets.

Hydro's people performance and development process is designed to assess and develop our human resources, and includes appraisal dialogue, individual development and follow-up, as well as talent planning and succession management. It aims to promote the potential of individual employees and of our organization as a whole and is integrated with our annual business planning process. Risk management is also an integrated part of our planning and reporting process.

Risk management deals with all aspects of value creation, including strategy, finance, commercial matters, organization, climate change, HSE, reputation, corporate responsibility, regulatory and legal matters. Hydro's board of directors regularly reviews and evaluates the overall risk management systems and environment within Hydro. We carry out risk assessments for defined exposure areas. Exposure to certain risks, particularly those threatening life and health, has been consistently reduced to very low levels. Hydro's Enterprise Risk Management (ERM) process is currently being revised, in order to improve risk management and ensure that mitigating actions corresponds with identified risk. The main improvements include a more detailed risk evaluation and more distinct differentiation between strategic and incident risk. See also the section Risk review on page 21 for a more detailed discussion of Hydro's risk management.

Controls and procedures

Hydro's Internal Control over Financial Reporting (ICFR) framework is primarily designed to provide reasonable assurance to our management and the board of directors regarding the preparation and fair presentation of our Financial Statements.

Hydro's ICFR framework is based on the COSO 2013 Internal Controls Integrated Framework which consists of five interrelated components and 17 relevant principles that must be present and functioning. The five COSO elements are: Control Environment, Risk Assessment, Control activities, Information and Communication, and Monitoring activities.

Our overall control environment for financial reporting is governed by our ICFR Global Directives, and reflects the tone set by the common attitudes, ethics, and values, and competence of top management and management, and all the rest of our employees.

The ICFR framework is implemented through a risk-based and top-down approach, to provide appropriate organization of the financial reporting, ensuring that Hydro's activities, accounts, and management are subject to adequate control.

Hydro's disclosure committee assists the CEO and the CFO in ensuring fairness, accuracy, completeness, and timeliness of Hydro's public reports and disclosures, both financial and extra-financial. The disclosure committee is also an integral component of Hydro's disclosure controls and procedures and assesses Hydro's compliance initiatives pertaining to ICFR. The disclosure committee reports quarterly a summary of its activities to the board audit committee. Through reporting from the disclosure committee and internal audit, the audit committee takes an active role in ensuring the functioning of the ICFR framework. The board of directors meets at least annually with the external auditor without members of the corporate management present. See page 129 and www.hydro.com/governance for additional details.

Pre-approval of audit services

The audit committee has established a pre-approval policy governing the engagement of Hydro's primary external auditors for audit and non-audit services to Hydro or any entity within the group. Under this pre-approval policy, the audit committee has defined and pre-approved subcategories of audit and non-audit services. The audit committee's preapproval policy includes annual monetary frames for each of the following categories of services:

- Audit
- Audit-related
- Tax
- Other - not related to financial audit and tax

Within the scope of the pre-approval policy, all services shall be pre-approved. The reported amounts for audit, audit-related, tax and other non-audit-related services are within the monetary frames established by the audit committee.

Hydro's portfolio, strategy and business planning process



Transparency and communication

Hydro's corporate culture embodies the principles of transparency and respect for others. Our ability to operate efficiently in the Norwegian market and internationally requires consistent and professional communication. We adhere, therefore, to the principles of transparency, honesty and accountability when interacting with our stakeholders.

Management compensation

Information concerning remuneration and remuneration policies, share ownership, loans outstanding and loan policy relating to Hydro's board of directors and corporate management board is disclosed in note 9.1-9.4 of the consolidated financial statements.

Board of Directors

Name	Place of residence	Year of birth	Position	Board committee	Meetings attended	No. of Hydro shares ¹⁾	Director since	Term expires
Dag Mejdell	Oslo, Norway	1957	Chairperson	Chairperson Compensation committee	14	35,000	2012	2020
Irene Rummelhoff	Hafslund, Norway	1967	Deputy Chairperson	Compensation committee	10	5,000	2014	2020
Arve Baade	Sunnås, Norway	1967	Director		14	4,708	2018	2020
Roelof IJbrand Baan ²⁾	Helsinki, Finland	1957	Director		4	-	2019	2021
Finn Jebsen	Oslo, Norway	1950	Director	Chairperson Audit committee	14	53,406 ⁵⁾	2007	2020
Liselott Kilaas	Oslo, Norway	1959	Director	Audit committee	14	-	2018	2020
Peter Kukielski ³⁾	Vancouver, Canada	1956	Director		7	-	2019	2021
Sten Roar Martinsen	Kopervik, Norway	1962	Director	Compensation committee	14	6,447	2005	2020
Tor Egil Skulstad ⁴⁾	Matrand, Norway	1967	Informal observer ⁴⁾		14	804	2017	2020
Thomas Schulz	Rungsted Kyst, Denmark	1965	Director		14	-	2016	2020
Svein Kåre Sund	Sunnås, Norway	1962	Director	Audit Committee	14	6,012	2017	2020
Marianne Wiinholt	Klampenborg, Denmark	1965	Director	Audit committee	13	-	2016	2020

Total number of board meetings were 14.

1) As per 2019-12-31.

2) Baan became member of the board as of 2019-05-29. He stepped down on as of 2020-02-05.

3) Kukielski became member of the board as of 2019-05-29.

4) Skulstad is an informal observer in the board of directors on behalf of employees in Extruded Solutions. The role is temporary and was created effective 2 October 2017 until the election of board members in 2020. He is appointed by the Norwegian Trade Union Confederation.

5) Including shares owned by Fateburet AS.

Dag Mejdell, chairperson

- Position: Non-executive Director
- Education: Degree in Economics and Business Administration (siviløkonom) from the Norwegian School of Economics (NHH)
- Current directorships: Chair of Sparebank 1 SR Bank ASA, Vygruppen AS, Visolit group of companies, International Post Corporation CV and deputy chairperson of SAS AB

Irene Rummelhoff, deputy chairperson

- Position: Executive vice president, Marketing, Midstream and Processing, Equinor ASA.
- Education: Master of Science in Geology/Geophysics (sivilingeniør) from the Norwegian Institute of Technology (NTH)
- Current directorships: None

Arve Baade, employee representative

- Position: Full-time employee representative representing Industri Energi
- Education: Certificate of apprenticeship in process studies
- Current directorships: None

Roelof IJbrand Baan (as per February 5th, 2020)

- Position: CEO Outokumpu Yyj
- Education: Master of Science in Economics from Vrije Universiteit, Netherlands
- Current directorships: Deputy chair of International Stainless Steel Forum and board member of World Steel Association

Finn Jebsen

- Position: Independent businessman
- Education: Degree in Economics and Business Administration (siviløkonom) from the Norwegian School of Economics (NHH). Master's degree in Business Administration from the University of California, Los Angeles
- Current directorships: Chairperson of Kavli Holding AS. Board member of A. Wilhelmsen AS, Nel ASA, Norfund, Future Technology AS and his wholly-owned company Fateburet AS

Liselott Kilaas

- Position: Independent advisor
- Education: M.Sc Mathematical Statistics, University of Oslo, master of Business Administration, IMD Lausanne, Switzerland
- Current directorships: Chairperson of the board of her wholly-owned company Procia Invest AS. Board member of Orkla ASA, Stiftelsen Det Norske Veritas, Folketrygdfondet, Avonova AB, Coala AB, and Peab AB

Peter Kukielski

- Position: Executive director of Hudbay Minerals
- Education: Master of Science, Stanford University, California
- Current directorships: none

Sten Roar Martinsen, employee representative

- Position: Process operator / full-time union official representing the Norwegian Confederation of Trade Unions (LO)
- Education: Certificate of apprenticeship in electrochemistry. Work supervisor training
- Current directorships: None

Tor Egil Skulstad, informal observer/employee representative

- Position: Chief employee representative/full-time union official representing the Norwegian Confederation of Trade Unions (LO)

- Education: Air Force Candidate School, Machinery Focus School
- Current directorships: Board Member of Hydro Extruded Solutions AS, Hydro Extrusion Norway AS and Union Leader Fellesforbundet, Hydro Extruded Solutions AS

Thomas Schulz

- Position: Group Chief Executive Officer, FL Smidth
- Education: PhD Mining & Mineral Processing, Rheinisch-Westfälische Universität Aachen RWTH, Germany
- Current directorships: None

Svein Kåre Sund, employee representative

- Position: Technical supervisor, Relining/part-time union official representative in The Norwegian Society of Engineers and Technologists (NITO). Representing the employees through the Central Cooperative Council (Sentralt samarbeidsråd)
- Education: Bachelor of Science, HIST Trondheim
- Current directorships: None

Marianne Wiinholt

- Position: Executive vice president and Chief Financial Officer, Ørsted
- Education: State Authorised public Accountant
- Current directorships: Board Member and Chair of the Audit Committee of Hempel A/S

Corporate Management Board

Name	Place of Residence	Year of birth	Employed in Hydro since	Current position since	Position	Number of Hydro shares ¹⁾
Hilde Merete Aasheim ²⁾	Oslo, Norway	1958	2008	2019	President and Chief Executive Officer	94,161
Svein Richard Brandtzæg ³⁾	Oslo, Norway	1957	1985		President and Chief Executive Officer	253,684
Kjetil Ebbesberg ⁴⁾	Düsseldorf, Germany	1971	2009		EVP Rolled Products	55,812
Einar Glomnes ⁵⁾	Oslo, Norway	1969	2004	2019	EVP Rolled Products	4,456
Egil Hogna ⁶⁾	Oslo, Norway	1971	2017	2017	EVP Extruded Solutions	50,742
Eivind Kallevik ⁷⁾	Oslo, Norway	1967	1998	2013	EVP Primary Metal	62,644
Pål Kildemo ⁸⁾	Oslo, Norway	1984	2008	2019	EVP and Chief Financial Officer	2,202
Anne-Lene Midseim	Oslo, Norway	1968	1998	2015	EVP CSR, Compliance and General Counsel	29,862
Arvid Moss	Oslo, Norway	1958	1991	2010	EVP Energy and Corporate Development	158,308
Katarina Nilsson ⁹⁾	Oslo, Norway	1971	2017		EVP People & HSE	5,725
Hilde Vestheim Nordh ¹⁰⁾	Oslo, Norway	1969	1995	2019	EVP People & Safety	16,392
Inger Sethov	Høvik, Norway	1970	2005	2015	EVP Communication & Public Affairs	27,538
John Thuestad ¹¹⁾	Oslo, Norway	1960	2017	2018	EVP Bauxite and Alumina	25,202

EVP: Executive vice president

- 1) As per 2019-12-31.
- 2) Aasheim became President and CEO as of 2019-05-08. Aasheim also was employed in Hydro 2005-2007.
- 3) Brandtzæg stepped down from his position as CEO and President as of 2019-05-08.
- 4) Ebbesberg stepped down from the Corporate Management Board as of 2019-05-08.
- 5) Glomnes became member of the Corporate Management Board as of 2019-05-08.
- 6) Hogna also was employed in Hydro 1999-2003.
- 7) Kallevik became EVP Primary Metal as of 2019-08-15.
- 8) Kildemo became member of the Corporate Management Board as of 2019-08-15. He was acting member of the Corporate Management Board as of 2019-05-08.
- 9) Nilsson stepped down the Corporate Management Board as of 2019-01-08.
- 10) Vestheim Nordh became member of the Corporate Management Board as of 2019-08-15. She was acting member of the Corporate Management Board as of 2019-01-08.
- 11) Thuestad also was employed in Hydro 1997-1998.

Hilde Merete Aasheim, President and CEO

- Key experience: Executive vice president Primary Metal, Head of Staff Functions and Corporate Services in StatoilHydro. Head of the integration between Statoil and Hydro's oil and gas activities. Head of Leadership and Culture in Hydro. 20 years of service in Elkem, three last years as head of the Silicon Division
- Education: Degree in Economics and Business Administration (siviløkonom) from the Norwegian School of Economics (NHH). Certified public accountant from NHH
- External directorships: Board member of IAI (International Aluminium Institute), member of the Nomination Committee Norsk Industri

Einar Glomnes

- Key experience: Head of Global Joint Ventures Primary Metals, General Manager Hydro Aluminium Asia, Vice President Metal Markets/Corporate Strategy/Energy/International Oil&Gas, Lawyer Corporate Legal Department. Prior to Hydro Engagement Manager McKinsey & Co and corporate lawyer Schjødt law firm
- Education: LLM Columbia University School of Law, Cand. jur. University of Oslo
- External directorships: Member of Investment Committee Verdane Capital

Egil Hogna

- Key experience: President & Chief Executive Officer in Sapa. Head of Downstream in Yara International, CFO in Yara, Head of Mediterranean in Yara. VP Supply Chain Metal Products in Hydro. Consultant at McKinsey & Company
- Education: Master of Science degree from the Norwegian university of science and technology (NTNU), and an MBA from INSEAD, France
- External directorships: None

Eivind Kallevik

- Key experience: Chief Financial Officer, Head of Finance Bauxite and Alumina. Responsible for integration planning of all functional areas in the Vale deal. Head of Corporate Financial Reporting, Performance and Tax. Head of Finance Aluminium Products. Head of Business Controlling Hydro Aluminium. Prior to Hydro, 6 years of Oil and Gas Financing in Christiania Bank og Kreditkasse
- Education: Master of Business Administration from University of San Francisco
- External directorships: None

Pål Kildemo, CFO

- Key experience: Acting EVP of Primary Metal from May 8, 2019 until August 15, 2019, Head of Finance in Primary Metal, Head of Investor Relations
- Education: Master's degree in Economics and Finance from Heriot-Watt University, Edinburgh
- External directorships: None

Anne-Lene Midseim

- Key experience: Company Secretary; Head of Staffs in Bauxite & Alumina; Head of Corporate Social Responsibility; and Legal Counsel in Hydro. Resident Legal Advisor in East-Timor, Oil for development program, Lawyer for Norwegian law firm Vogt & co, Executive Officer in the Ministry of Oil and Energy
- Education: Candidate in Jurisprudence (cand. jur.) from University of Oslo
- External directorships: Member of the Nomination Committee of Transparency International Norge. Board member Gassco AS. Chairperson of the Board Industriforsikring AS

Arvid Moss

- Key experience: Executive vice president and head of Corporate Strategy and Business Development. Project leader for the oil and gas merger agreement with Statoil. Head of Metal Products. Head of Automotive Structures
- Education: Degree in Economics and Business Administration (siviløkonom) from the Norwegian School of Economics (NHH)

- External directorships: President of the Confederation of Norwegian Enterprise (NHO)

Hilde Vestheim Nordh

- Key experience: Head of HSE & HR in Energy, HSE manager Karmøy, Cast house manager Karmøy
- Education: MSc in Materials Technology, Rheinisch Westfälische Technische Hochschule (RWTH), Aachen
- External directorships: None

Inger Sethov

- Key experience: Head of Communication & Public Affairs in Hydro. Head of Media Relations in Hydro. 10 years of experience as journalist and correspondent for Reuters and Dow Jones news agencies
- Education: BA Mass Communication & Journalism, California State University Fresno
- External directorships: None

John Thuestad

- Key experience: Head of Extrusion Europe in Hydro. 30 years operational and leadership experience from the aluminium industry.
- Education: Master's degree Metallurgy, NTNU, MBA Carnegie Mellon University Pittsburgh
- External directorships: Board member Yara International ASA

Governance bodies

Description	Developments and events during the reporting year	References
General meeting of shareholders		
<p>Company shareholders exercise ultimate authority through the general meeting. Shareholders registered in VPS, the Norwegian Central Securities Depository, five working days in advance of the general meeting of shareholders can vote in person or by proxy. Invitations are sent to shareholders or to the shareholder's security deposit bank.</p>	General meeting in May	<p>The protocols can be found at www.hydro.com/governance</p>
<p>The general meeting of shareholders:</p> <ul style="list-style-type: none"> • Elects the shareholders' representatives to the corporate assembly • Determines the remuneration of the corporate assembly • Elects the external auditor and approves the auditor's remuneration • Approves the statutory report according to Norwegian requirements and financial statements, including the dividend proposed by the board of directors and recommended by the corporate assembly • Elects the nomination committee and determines their remuneration • Deals with any other matters listed in the notice convening the meeting <p>Shareholders may, at least four weeks before an ordinary general meeting, request in writing that proposals for resolutions are submitted to the general meeting, or that items are added to the agenda.</p>		
Corporate assembly		
<p>Normally eighteen members. Twelve are elected by the general meeting of shareholders, six are elected by and among the group's employees in Norway. The members are elected for a period of up to two years.</p>	Four meetings. 99 percent meeting attendance.	<p>Note 9.4 to the consolidated financial statements for remuneration and share ownership</p>
<p>In accordance with Norwegian law, the corporate assembly:</p> <ul style="list-style-type: none"> • Elects the board of directors and determines their remuneration • Nominates the external auditor to be elected by the general meeting of shareholders • Based on recommendations from the board of directors, makes decisions in matters relating to investments that are substantial in relation to Hydro's resources, and when closures and reorganizations will lead to significant changes for the workforce • Provides recommendations to the general meeting of shareholders with respect to approval of the board of directors' proposal regarding the financial statements and dividend 		
<p><i>Members:</i> Terje Venold (chairperson), Susanne Munch Thore (deputy chairperson), Shahzad Abid, Rolf Arnesen, Andreas Bakken, Nils Bastiansen, Anne Kverneland Boggsnes, Odd Arild Grefstad, Kolbjørn Havnes, Berit Ledel Henriksen, Nils M. Huseby, Ylva Lindberg, Bjørn Petter Moxnes, Ørjan Normann, Birger Solberg, Unni Steinsmo, Jorunn Johanne Sætre, Einar Øren.</p> <p><i>Deputy members:</i> Hilde C. Bjørnland, Gisle L. Johansen, Hans Henrik Kloumann, Elisabeth Tørstad, Jon Martin Bratthammer, Tone Hjelmtvedt, Jan Einan, Morten Sundheim Jensen, Ann Kristin Prytz, Ellen Olstad, Gorm Gustavsen, Roar Jakobsen, Kari Sommerfeldt.</p>		
<p>Articles of association §§ 7-8 at www.hydro.com/governance</p>		
Nomination committee		
<p>Minimum three and maximum four members appointed by the general meeting of shareholders. The chairperson of the committee and at least one of the other members shall be elected among the shareholder-elected corporate assembly members.</p>	18 meetings. 97 percent meeting attendance.	<p>Articles of association § 5A and biographical information can be found at www.hydro.com/governance</p>
<p>Nominates candidates to the board of directors, the corporate assembly and the nomination committee, and proposes remuneration to the board, its sub-committees, the corporate assembly and the nomination committee.</p>		
<p><i>Members:</i> Terje Venold (chairperson) Susanne Munch Thore Morten Strømgren Berit Ledel Henriksen</p>		
Board of directors		
<p>The board of directors currently holds 10 members. Seven are elected by the corporate assembly, three elected by and among the company's employees in Norway, for a period of up to two years. In addition, the board has invited an informal observer, representing the former Sapa employees, to attend the board meetings, until the next ordinary election of employee representatives.</p>	14 meetings. 92 percent meeting attendance.	<p>The board's mandate can be found at www.hydro.com/governance</p>
<p>In accordance with Norwegian law, the board of directors assumes the overall governance of the company, ensures that appropriate management and control systems are in place and supervises the day-to-day management as carried out by the President and CEO.</p>		
<p>The board of directors is closely following the market and macro-economic developments relevant for the aluminium industry. High on the board's agenda in 2019 was the situation for Hydro's operations in Brazil related to the 50 percent production embargo on Alunorte, the cyber attack and the process of recruiting a new CEO. In addition, the board has spent time on the new CEO platform, the strategic review of the business area Rolled Products, health and safety developments, and improvement initiatives.</p>		
<p>Extraordinary meetings have been held to address critical matters. The board had a deep dive on Extruded Solutions</p>		
<p>Biographical information on the board members on page 125.</p>		

Description	Developments and events during the reporting year	References
<p>North America. The board conducted site visits at the Cressona and St. Augustine plants in North America. The board of directors conducts an annual self-assessment of its work, competence and cooperation with management and a separate assessment of the chairperson. The board audit committee also performs a self-assessment. The reviews were facilitated by the corporate advisory firm Lintstock. The main conclusions of all assessments were submitted to the nomination committee, which in turn assessed the board's composition and competence.</p> <p>All shareholder-elected members are external. No members elected by employees are part of the company's executive management. Employee directors have no other service contractual agreements with the company outside of their employee contracts, though they are subject to their duties as board members.</p> <p>The board of directors has an annual plan for its work. It includes recurring topics such as strategy review, business planning, risk and compliance oversight, financial reporting, people strategy, succession planning as well as HSE and CSR.</p>	<p>North America. The board conducted site visits at the Cressona and St. Augustine plants in North America. The board of directors conducts an annual self-assessment of its work, competence and cooperation with management and a separate assessment of the chairperson. The board audit committee also performs a self-assessment. The reviews were facilitated by the corporate advisory firm Lintstock. The main conclusions of all assessments were submitted to the nomination committee, which in turn assessed the board's composition and competence.</p> <p>All shareholder-elected members were in 2019 deemed to be independent according to the Norwegian standards. None of the company's non-employee board members had any other service contractual agreements with the company. Thomas Schulz is the CEO of the listed company FLSchmidt. Sales and purchases between FLSchmidt and fully owned Hydro subsidiaries totaled DKK 13.9 million in 2019. Schulz was not directly involved in these transactions.</p>	<p>Note 9.4 to the consolidated financial statements for remuneration, share ownership and loans.</p>
Compensation committee		
<p>Consists of three of the board of directors' members.</p> <p>The committee reviews the performance of and puts forward proposals regarding the compensation of the President & CEO to the board of directors. The committee assists in evaluating the compensation of the corporate management board and in determining performance-promoting schemes for management.</p>	<p>8 meetings. 100 percent meeting attendance.</p> <p><i>Members:</i></p> <ul style="list-style-type: none"> • Dag Mejdell (chairperson) • Irene Rummelhoff • Sten Roar Martinsen ¹⁾ <p>1) Martinsen is employed in Hydro and represents the employees through the Norwegian Confederation of Trade Unions (LO). We believe that such reliance does not adversely affect, in any material way, the ability of the compensation committee to act independently or to satisfy the other requirements.</p>	<p>The mandate can be found at www.hydro.com/governance</p>
Audit committee		
<p>Consists of four of the board of directors' members. The audit committee meets Norwegian requirements regarding independence and competence.</p> <p>The primary function of the Audit committee is to assist the Board in exercising its oversight responsibility, with respect to the integrity of the company's financial statements, the company's financial reporting processes and internal controls, the company's risk assessment and risk management policies, the qualifications, independence of the external auditor, the performance of the company's internal audit function, and the company's compliance system.</p> <p>To ensure the independence of the internal audit function, the head of Internal Audit reports functionally to the board through the audit committee. The head of Group Compliance has a dotted reporting line to, and meets regularly, with the audit committee.</p> <p>The audit committee maintains a pre-approval policy governing the engagement of the company's primary and other external auditors to ensure auditor independence.</p>	<p>10 meetings. 95 percent meeting attendance. For self-assessment, see information on the Board of directors above.</p> <p><i>Members:</i></p> <ul style="list-style-type: none"> • Finn Jebesen (chairperson) • Liselott Kilaas • Marianne Wiinholt • Svein Kåre Sund ²⁾ <p>2) Sund is employed in Hydro and represents the employees through the Central Cooperative Council. We believe that such reliance does not adversely affect, in any material way, the ability of the audit committee to act independently or to satisfy the other requirements.</p>	<p>The mandate can be found at www.hydro.com/governance</p> <p>Pre-approval of audit services on page 125</p>
President & CEO and corporate management board		
<p>According to Norwegian corporate law, the President & CEO constitutes a formal governing body that is responsible for the daily management of the company. The division of functions and responsibilities between the President & CEO and the board of directors is defined in greater detail in the rules of procedures established by the board.</p> <p>The Corporate Management Board (CMB), including the President & CEO, has a shared responsibility for promoting Hydro's objectives and securing the company's property, organization and reputation. Members of the CMB are also Executive vice presidents (EVPs) with responsibility for the respective business areas and corporate staffs.</p>	<p>42 meetings in 2019.</p> <p>Effective 08 May 2019, Hilde Merete Aasheim was appointed President and CEO, and Einar Glomnes was appointed EVP with a special responsibility for Rolled Products. Effective 15 August 2019, Pål Kildemo was appointed EVP and CFO, Eivind Kallevik was appointed EVP with a special responsibility for Primary Metal and Hilde Vestheim Nordh was appointed EVP with a special responsibility for People and Safety.</p>	<p>Biographical information on page 127</p> <p>Note 9.1 and 9.2 to the consolidated financial statements for remuneration, share ownership and loans.</p>



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Consolidated financial statements

Consolidated income statements

Amounts in NOK million (except per share amounts). Years ended December 31	Notes	2019	2018
Revenue	1.4, 5.1	149,766	159,377
Share of the profit (loss) in equity accounted investments	1.4, 3.1	241	765
Other income, net	5.2	1,000	772
Total revenue and income		151,007	160,913
Raw material and energy expense	5.3	97,474	102,523
Employee benefit expense	9.3	24,871	23,176
Depreciation and amortization expense	2.4	8,572	7,369
Impairment of non-current assets	2.5	912	-
Other		18,678	19,324
Total expenses		150,508	152,391
Earnings before financial items and tax		499	8,522
Finance income	7.5	365	255
Finance expense	7.5	(2,420)	(2,315)
Finance income (expense), net		(2,055)	(2,060)
Income (loss) before tax		(1,556)	6,462
Income taxes	10.1	(813)	(2,139)
Net income (loss)		(2,370)	4,323
Net income (loss) attributable to non-controlling interests		(558)	67
Net income (loss) attributable to Hydro shareholders		(1,811)	4,256
Basic and diluted earnings per share attributable to Hydro shareholders	7.6	(0.88)	2.08

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statements of comprehensive income

Amounts in NOK million. Years ended December 31	Notes	2019	2018
Net income (loss)		(2,370)	4,323
Other comprehensive income			
Items that will not be reclassified to income statement			
Remeasurement postemployment benefits, net of tax	7.6	(443)	(718)
Unrealized gain (loss) on securities, net of tax	7.6, 8.2	(664)	394
Total		(1,107)	(324)
Items that will be reclassified to income statement			
Currency translation differences, net of tax	7.6	(576)	(2,031)
Cash flow hedges, net of tax	7.6, 8.3	19	(14)
Share of other comprehensive income that will be reclassified to income statement of equity accounted investments, net of tax	7.6	32	72
Total		(526)	(1,973)
Other comprehensive income		(1,633)	(2,296)
Total comprehensive income		(4,003)	2,027
Total comprehensive income attributable to non-controlling interests		(631)	(273)
Total comprehensive income attributable to Hydro shareholders		(3,372)	2,300

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated balance sheets

Amounts in NOK million, December 31	Notes	2019	2018 Restated
Assets			
Cash and cash equivalents	7.2	12,286	5,995
Short-term investments	7.3	969	975
Trade and other receivables	6.2	18,959	20,744
Inventories	6.1	20,816	26,483
Other current financial assets	8.2	635	801
Total current assets		53,665	54,998
Property, plant and equipment	2.1	74,243	74,369
Intangible assets	2.2, 2.3	11,501	11,443
Investments accounted for using the equity method	3.1	11,501	11,570
Other non-current assets	2.7, 8.2	4,817	5,721
Prepaid pension	9.5	6,676	5,162
Deferred tax assets	10.1	1,998	1,664
Total non-current assets		110,736	109,929
Total assets		164,401	164,928
Liabilities and equity			
Bank loans and other interest-bearing short-term debt	7.4	6,157	9,373
Trade and other payables	6.3	18,692	20,381
Provisions	4.1	3,296	3,281
Taxes payable		1,311	2,266
Other current financial liabilities	8.2	235	515
Total current liabilities		29,691	35,817
Long-term debt	7.4	18,858	9,342
Provisions	4.1	6,515	5,588
Pension liabilities	9.5	17,099	15,648
Other non-current financial liabilities	8.2	2,992	2,429
Other liabilities		2,033	2,318
Deferred tax liabilities	10.1	3,132	3,031
Total non-current liabilities		50,629	38,354
Total liabilities		80,320	74,172
Share capital	7.6	2,272	2,272
Additional paid-in capital	7.6	29,123	29,126
Treasury shares	7.6	(711)	(756)
Retained earnings		52,745	57,114
Other components of equity	7.6	(3,496)	(1,936)
Equity attributable to Hydro shareholders		79,932	85,820
Non-controlling interests		4,148	4,936
Total equity		84,081	90,756
Total liabilities and equity		164,401	164,928

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statements of cash flows

Amounts in NOK million. Years ended December 31	Notes	2019	2018
Operating activities			
Net income (loss)		(2,370)	4,323
<i>Adjustments to reconcile net income to net cash provided by operating activities:</i>			
Depreciation, amortization and impairment	2.4, 2.5	9,485	7,369
Share of profit in equity accounted investments		(241)	(765)
Dividends received from equity accounted investments	3.1	222	1,219
Deferred taxes		(699)	(585)
Loss on sale of non-current assets		85	188
Net foreign exchange loss	7.5	1,204	1,303
Net sales of trading securities		98	187
Capitalized interest	7.5	(44)	(1)
<i>Changes in assets and liabilities that provided (used) cash:</i>			
Trade and other receivables		1,869	(1,412)
Inventories		5,552	(5,599)
Trade and other payables		(1,812)	675
Commodity derivatives		(29)	(415)
Other items		(770)	538
Net cash provided by operating activities	10.3	12,550	7,025
Investing activities			
Purchases of property, plant and equipment		(8,726)	(7,219)
Purchases of other long-term investments		(698)	(389)
Purchases of short-term investments		(52)	-
Proceeds from sales of property, plant and equipment		129	80
Investment grants received		60	333
Proceeds from sales of other long-term investments		96	(1)
Proceeds from sales of short-term investments		18	-
Net cash used in investing activities		(9,173)	(7,196)
Financing activities			
Loan proceeds		15,881	7,057
Loan repayments		(10,090)	(5,984)
Net decrease in other short-term debt		(257)	(2,934)
Proceeds from shares issued		26	47
Dividends paid		(2,649)	(3,622)
Net cash provided by (used in) financing activities		2,911	(5,436)
Foreign currency effects on cash		3	(226)
Net increase (decrease) in cash and cash equivalents		6,291	(5,833)
Cash and cash equivalents at beginning of year		5,995	11,828
Cash and cash equivalents at end of year		12,286	5,995

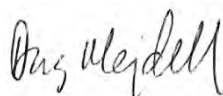
The accompanying notes are an integral part of the consolidated statements.

Consolidated statements of changes in equity

Amounts in NOK million	Notes	Share capital	Additional paid-in capital	Treasury shares	Retained earnings	Other components of equity	Equity attributable to Hydro shareholders	Non-controlling interests	Total equity
December 31, 2017		2,272	29,097	(810)	56,452	20	87,032	5,178	92,209
Treasury shares issued to employees	7.6		29	53			83		83
Dividends	7.7				(3,581)		(3,581)	(106)	(3,687)
Capital contribution in subsidiaries								138	138
Total comprehensive income for the year					4,256	(1,956)	2,300	(273)	2,027
December 31, 2018		2,272	29,126	(756)	57,127	(1,936)	85,833	4,936	90,769
Effect of change in accounting principle					(13)		(13)	-	(13)
January 1, 2019		2,272	29,126	(756)	57,114	(1,936)	85,820	4,936	90,756
Treasury shares issued to employees	7.6		(3)	45			42		42
Dividends	7.7				(2,558)		(2,558)	(159)	(2,717)
Capital contribution in subsidiaries								2	2
Total comprehensive income for the year					(1,811)	(1,560)	(3,372)	(631)	(4,003)
December 31, 2019		2,272	29,123	(711)	52,745	(3,496)	79,932	4,148	84,081

The accompanying notes are an integral part of the consolidated statements.

Oslo, March 10, 2020



Dag Mejdell
Board member



Irene Rummelhoff
Board member



Arve Baade
Board member



Finn Jebsen
Board member



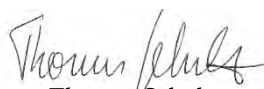
Liselott Kilaas
Board member



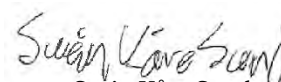
Peter Kukielski
Board member



Sten Roar Martinsen
Board member



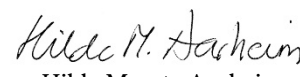
Thomas Schulz
Board member



Svein Kåre Sund
Board member



Marianne Wiinholt
Board member



Hilde Merete Aasheim
President and CEO

Notes to the consolidated financial statements

Section 1 – General information

Note 1.1 Reporting entity, basis of presentation and significant accounting policies

The reporting entity reflected in these financial statements comprises Norsk Hydro ASA and consolidated subsidiaries (Hydro). Hydro is headquartered in Oslo, Norway, and the group employs around 36,000 people in about 40 countries. Hydro is a global supplier of aluminium with operations throughout the industry value chain. Operations include power production, bauxite extraction, alumina refining, aluminium smelting, remelting and recycling, rolling activities, and extruded solutions. The Board of Directors and the President and CEO authorized these financial statements for issue on March 10, 2020. Hydro is listed on the Oslo stock exchange, Oslo Børs.

Basis of presentation

The consolidated financial statements of Norsk Hydro ASA and its subsidiaries are prepared in accordance with International Financial Reporting Standards (IFRS) as endorsed by the European Union (EU) and Norwegian authorities and effective as of December 31, 2019. Hydro also provides the disclosures as specified under the Norwegian Accounting Act (Regnskapsloven).

The financial statements have been prepared on a historical cost basis except for certain assets, liabilities and financial instruments, which are measured at fair value. Preparation of financial statements including note disclosures requires management to make estimates and assumptions that affect amounts reported. Actual results may differ.

The functional currency of Norsk Hydro ASA is the Norwegian krone (NOK). The Hydro group financial statements are presented in NOK.

As a result of rounding adjustments, the figures in one or more columns included in the financial statements may not add up to the total of that column.

Interest rates used for calculating net present values are rounded to the nearest 10 basis points for post-employment benefits, to the nearest 25 basis points for other non-financial assets and liabilities.

Significant estimates and judgement

The application of accounting policies requires that management makes estimates and judgements in determining certain revenues, expenses, assets and liabilities. The following areas involve a significant degree of judgement and complexity, and may result in significant variation in amounts.

- Impairment of non-current assets, discussed in note 2.5 Impairment of non-current assets
- Uncertain assets and liabilities, discussed in section 4 Uncertain assets and liabilities
- Uncertain tax positions, discussed in note 10.1 Income taxes
- Business combinations, impacting such items as long-lived assets and uncertain assets and liabilities, discussed in note 1.5 Significant subsidiaries and changes to the consolidated group
- Financial instruments, discussed in section 8 Financial risk and financial instruments
- Employee retirement plans, discussed in note 9.5 Employee retirement plans

Significant accounting policies

The following description of accounting principles applies to Hydro's 2019 financial reporting, including all comparative figures, except where the implementation provisions in IFRS 16 Leases specify that the new accounting principles are applied from January 1, 2019. See note 2.6 Leases and note 10.5 Changes in accounting principles and new pronouncements for further information about implementation of this new accounting standard. The relevant accounting policies for relevant items are described in the specific notes in this set of financial statements.

Income statements and statements of comprehensive income

Hydro has elected to present a separate income statement and a separate statement of comprehensive income, rather than a combined statement. Further, Hydro presents an analysis of expenses based on their nature as a common analysis of expenses through Hydro's value chain. Hydro has elected to present a sub-total Earnings before financial items and tax (EBIT). This measure is also used as the main segment profit measure. The share of the profit (loss) in equity accounted investments is included in this sub-total because the majority of such investments are operationally integrated with Hydro's businesses. Results from such investments are managed as part of Hydro's operating activities with significant transactions between the majority of these investments and Hydro. Return on other equity investments is not as closely related to the business activities in Hydro, and hence classification as finance income thus better reflects the way such investments are managed.

Gains and losses on disposal of non-current assets are presented net, as well as expenditures related to provisions that are reimbursed by a third party. However, insurance compensation and government grants are reported on a gross basis.

Statements of cash flows

Hydro uses the indirect method to present cash flows from operating activities. Interest and dividends received as well as interest paid are included in cash flows from operating activities. Dividends paid are included in cash flows from financing activities.

Basis of consolidation

The consolidated financial statements include Norsk Hydro ASA and subsidiaries, which are entities in which Hydro has the power to govern the financial and operating policies of the entity (control). Control is normally achieved through ownership, directly or indirectly, of more than 50 percent of the voting power. Currently, Hydro has more than 50 percent of the voting power in close to all subsidiaries. Subsidiaries are included from the date control commences until the date control ceases.

Intercompany transactions and balances have been eliminated. Profit and loss resulting from intercompany transactions have been eliminated.

Non-controlling interests

Non-controlling interests represent equity interests in subsidiaries held by other owners than Hydro. Non-controlling interests are reported as a separate section of the Group's equity in accordance with IFRS 10 Consolidated Financial Statements. Results attributed to non-controlling interests are based on ownership interest, or other method of allocation if required by contract.

Transactions between non-controlling shareholders and the group

Sales and purchases of equity interests and equity contributions not resulting in Hydro gaining or losing control of a subsidiary are reported as equity transactions in accordance with IFRS 10. No gain, loss or remeasurement of values of recognized assets, liabilities or goodwill is recognized as a result of such transactions.

Assets held for sale and Income from discontinued operations

Assets held for sale are reported separately in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations, provided that the sale is highly probable, which includes the criteria that management is committed to the sale, and that the sale will be completed within one year. Assets held for sale are not depreciated, but are measured at the lower of carrying value and the fair value less costs to sell for the asset group. Assets are not reclassified in prior period balance sheets. Immaterial disposal groups are not reclassified.

A discontinued operation is a component of Hydro that is held for sale or has been disposed of. A discontinued operation is a separate major line of business or geographical area of operations. Related cash flows, results of operations and gain or loss from disposal are reported separately as Income (loss) from discontinued operations.

Assets held for sale, liabilities in disposal groups and income and expense from discontinued operations are excluded from specifications presented in the notes unless otherwise stated.

Foreign currency transactions

Transactions in foreign currencies are initially recorded in the functional currency of the transacting entity by applying the rate of exchange as of the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the rate of exchange at the balance sheet date. Currency gains or losses are included in Finance expense.

Foreign currency translation

For consolidation purposes, the financial statements of subsidiaries with a functional currency other than Norwegian kroner (NOK) are translated into NOK. Assets and liabilities, including investment in associates, joint ventures and goodwill, are translated using the rate of exchange as of the balance sheet date. Income, expenses and cash flows are translated using the average exchange rate for the reported period. Goodwill is recognized in the predominant functional currencies in the acquired businesses. Translation adjustments are recognized in Other comprehensive income and accumulated in Currency translation differences in Other components of equity. On disposal of such subsidiary, joint venture or associate, the cumulative translation adjustment of the disposed entity is recognized in the income statement as part of the gain or loss on disposal.

Note 1.2 Measurement of fair value

Hydro measures certain assets and liabilities at fair value for the purpose of recognition or disclosure. Recurring fair value measurement is used primarily for financial instruments, see section 8 Financial risk and financial instruments. Non-recurring fair value measurement is used for transactions, such as business combinations, divestments with non-cash consideration and certain other non-routine transactions. Fair value is estimated using inputs which are to varying degree objectively observable. Certain items are valued on the basis of quoted prices in active markets for identical assets or liabilities, others are valued on the basis of inputs that are derived from observable prices, while certain positions are valued on the basis of judgmental assumptions that are to a limited degree or not at all based on observable market data.

Financial instruments

The estimated fair value of Hydro's financial instruments is based on market prices and valuation techniques. Valuations are made with the objective to include relevant factors that market participants would consider in setting a price, and to apply accepted economic and financial methodologies for the pricing of financial instruments. References for less active markets are carefully reviewed to establish relevant and comparable data. Extrapolations and other accepted valuation techniques are employed in periods with few or no transactions, such as for long-term commodity contracts in markets with few observations beyond the short or mid-term period.

Hydro's estimated credit spread for similar liabilities is used when determining the fair value of financial instruments where Hydro is net liable. Hydro determines the appropriate discount factor and credit spread for financial assets based on both an individual and on a portfolio assessment.

Equity securities

Fair value for unlisted shares is based on commonly accepted valuation techniques utilizing significant unobservable data, primarily cash flow-based models. To the extent there are transactions in such shares, the transaction price is assessed and, to the extent comparable to rights embodied in the investment held by Hydro, used for reference. For investments where share holdings are associated with offtake rights and/or obligations or other specific clauses, those rights and obligations are included in the valuation of the equity securities. Fair value for listed shares is based on quoted market prices as of the balance sheet date.

Debt instruments

Fair value for unlisted debt instruments is estimated primarily through cash flow models using contractual cash flow where relevant, and discount rates reflecting the perceived credit risk and other relevant risks associated with the instrument. Fair value for listed instruments is based on quoted market prices as of the balance sheet date.

Derivatives

Fair value of financial derivatives with a currency or interest rate as underlying is estimated as the present value of future cash flows, calculated by reference to quoted swap price curves and exchange rates as of the balance sheet date. For derivatives covering a period beyond the liquid period of price curves, the curves are extrapolated using unobservable data.

Fair value of commodity derivatives is measured as the present value of future cash flows, calculated using forward curves and exchange rates as of the balance sheet date. Estimates from brokers and extrapolation techniques are applied for non-quoted periods to achieve the most relevant forward curve. In addition, when deemed appropriate, correlation techniques between commodities are applied. Options are revalued using option pricing models, and credit spreads are applied where deemed to be significant. Markets are assessed to determine whether they are active for the relevant instruments. Currency and interest markets are considered liquid for the periods used for price references, and thus applied unadjusted. For aluminium contracts priced to observations at the London Metal Exchange (LME), liquidity is considered good for the first few years, with fewer transactions for longer durations. For electricity contracts priced to the electricity exchange Nasdaq Electricity Nordic, liquidity is considered good for the first two years. For longer durations there are fewer transactions and higher uncertainty. Similar assessment is made for other markets used for price references. For less liquid periods, adjustments to remove outliers and extrapolation techniques are applied.

Embedded derivatives

Hydro measures embedded forward contracts that are separated from the host contract by comparing the forward curve at contract inception to the forward curve as of the balance sheet date. Changes in the present value of the cash flows related to the embedded derivative are recognized in the balance sheet with changes in the fair value recognized in the income statement. Forward curves are established as described above under Derivatives.

Note 1.3 Significant events

The following significant events have impacted Hydro in 2019, or are expected to impact Hydro in 2020:

Hydro experienced a significant cyber-attack on March 19, 2019. The attack affected the entire organization, with Extruded Solutions having suffered the most significant operational challenges and financial losses. The main impact on financial results is lost sales resulting from lost production ability and ability to receive and process sales order in a period in March and April. In addition, costs have been incurred to remediate impacted systems and data. The financial impact is estimated to be around NOK 650 to 750 million. Hydro has a robust cyber insurance in place. During 2019, a total of NOK 216 million of compensation was recognized. Documentation of additional parts of the claim is in process, and Hydro expects to receive further compensation during 2020.

A strategic review of Rolled Products was initiated in May 2019. The review resulted in rationalization efforts with an estimated cost of about NOK 1 billion which was provided for in 2019. A large part of the cost is related to employee compensation for termination of employment and early retirement. The majority of cash outflows will be made during the period 2020 to 2022.

Extruded Solutions has been undergoing an optimization of their large asset portfolio to identify ways to streamline their footprint and reduce costs. During 2019 several extruded plants were closed or divested throughout Europe and in the US, and in most cases, volumes have been transferred to other facilities. Costs related to rationalization and closure activities were about NOK 400 million, in addition to impairment write-downs of about NOK 250 million.

Alunorte, an alumina refinery in Brazil which is part of Bauxite & Alumina was partly curtailed after a court decision in 2018 following an extreme rainfall and alleged harmful spills into surrounding areas. The court decision in March 2018 required Alunorte to limit production to 50 percent of its capacity. In May 2019, the court lifted the embargo, allowing Alunorte to ramp up towards normal production. In September 2019, the court lifted the final embargo related to the new bauxite residue deposit area (DRS2), allowing commissioning activities to resume. The partial embargo have significantly impacted alumina production in Bauxite & Alumina, and also impacted availability and price of alumina in the world market, thus impacted the prices for alumina produced and sold by Bauxite & Alumina, and the cost for alumina purchased and consumed by Primary Metal.

Note 1.4 Operating and geographic segment information

Hydro identifies its reportable segments and discloses segment information under IFRS 8 Operating Segments, which requires Hydro to identify its segments according to the organization and reporting structure used by management. Operating segments are components of a business that are evaluated regularly by the chief operating decision maker for the purpose of assessing performance and allocating resources. Hydro's chief operating decision maker is the President and CEO. Generally, financial information is required to be disclosed on the same basis that is used by the CEO.

Hydro's operating segments represent separately managed business areas with products serving different markets, or distinct elements of the business separately followed up and reported to the chief operating decision maker. Hydro's reportable segments are the six business areas Bauxite & Alumina, Primary Metal, Metal Markets, Rolled Products, Extruded Solutions, and Energy.

Bauxite & Alumina activities includes bauxite mining activities, production of alumina and related commercial activities, primarily the sale of alumina.

Primary Metal includes primary aluminium production, remelting and casting activities. The main products are comprised of extrusion ingots, foundry alloys, sheet ingot and standard ingot.

Metal Markets includes all sales activities relating to products from our primary metal plants and operational responsibility for stand-alone remelters as well as physical and financial metal trading activities.

Rolled Products includes Hydro's rolling mills and the dedicated primary metal plant in Neuss, Germany. The main products are comprised of aluminium foil, strip, sheet, and lithographic plate for application in such sectors as packaging, automotive and transport industries, building and general engineering, as well as for offset printing plates.

Extruded Solutions delivers products within extrusion profiles, building systems and precision tubing, and is present in about 40 countries. The products are delivered to such sectors as construction, automotive and heating, ventilation and air conditioning.

Energy includes operating and commercial responsibility for Hydro's power stations in Norway, a trading and wholesale business in Brazil, and energy sourcing for Hydro's world-wide operations.

Other consist of Hydro's captive insurance company Industriforsikring, its industry parks, internal service providers, and certain other activities.

Operating segment information

Hydro uses two measures of segment results, Earnings before financial items and tax - EBIT and EBITDA. EBIT is consistent with the same measure for the group, considering the principles for measuring certain intersegment transactions and contracts described below. Hydro defines EBITDA as Income (loss) before tax, financial income and expense, depreciation, amortization and write-downs, including amortization and impairment of excess values in equity accounted investments, less investment grants. Hydro's definition of EBITDA may be different from other companies.

Because Hydro manages long-term debt and taxes on a group basis, Net income is presented only for the group as a whole.

Intersegment sales and transfers reflect arm's length prices as if sold or transferred to third parties at the time of inception of the internal contract, which may cover several years. Transfers of businesses or fixed assets within or between Hydro's segments are reported without recognizing gains or losses. Results of activities not considered part of Hydro's main operations as well as unallocated revenues, expenses, liabilities and assets are reported together with Other under the caption Other and eliminations.

The accounting policies used for segment reporting reflect those used for the group. The following exceptions apply for intersegment transactions: Internal commodity contracts may meet the definition of a financial instrument in IFRS 9 or contain embedded derivatives that are required to be reported separately and valued at fair value under IFRS 9. However, Hydro considers these contracts as sourcing of raw materials or sale of own production, and accounts for such contracts as executory contracts. Certain other internal contracts may contain a lease arrangement. However, the segment reporting reflects the responsibility allocated by Hydro's management for those assets. Costs related to certain pension schemes covering more than one segment are allocated to the operating segments based either on the premium charged or the estimated service cost. Any difference between these charges and pension expenses measured in accordance with IFRS, as well as pension assets and liabilities are included in Other and eliminations.

The following tables include information about Hydro's operating segments.

Amounts in NOK million	External revenue		Internal revenue		Share of the profit (loss) in equity accounted investments	
	2019	2018	2019	2018	2019	2018
Bauxite & Alumina	12,255	14,396	10,550	14,152	-	-
Primary Metal	6,141	7,829	29,035	31,605	270	722
Metal Markets	40,164	42,502	10,287	11,735	-	-
Rolled Products	26,179	26,940	152	15	-	-
Extruded Solutions	62,211	64,023	140	61	18	53
Energy	2,808	3,673	5,414	5,007	(29)	(35)
Other and eliminations	8	14	(55,577)	(62,576)	(18)	24
Total	149,766	159,377	-	-	241	765

Amounts in NOK million	Depreciation, amortization and impairment ¹⁾		Earnings before financial items and tax (EBIT) ²⁾		EBITDA	
	2019	2018	2019	2018	2019	2018
Bauxite & Alumina	2,509	2,095	749	1,763	3,258	3,858
Primary Metal	3,030	2,253	(1,838)	2,123	1,081	4,267
Metal Markets	129	101	748	886	875	986
Rolled Products	1,036	927	(865)	336	170	1,263
Extruded Solutions	2,384	1,723	1,353	1,774	3,731	3,498
Energy	253	239	1,291	1,853	1,558	2,107
Other and eliminations	144	30	(939)	(214)	(795)	(183)
Total	9,485	7,369	499	8,522	9,878	15,796

Amounts in NOK million	Non-current assets		Total assets ³⁾		Investments ⁴⁾	
	2019	2018	2019	2018	2019	2018
		Restated		Restated		
Bauxite & Alumina	30,565	32,396	37,332	40,163	2,294	963
Primary Metal	32,528	31,370	43,756	44,711	4,235	2,724
Metal Markets	1,413	1,456	7,470	9,886	173	165
Rolled Products	9,223	9,413	18,757	20,237	876	1,047
Extruded Solutions	28,758	28,004	43,060	45,117	2,914	2,390
Energy	5,822	5,671	6,975	6,990	313	280
Other and eliminations	2,427	1,620	7,051	(2,176)	102	45
Total	110,736	109,929	164,401	164,928	10,907	7,614

1) Amount for 2019 include impairment, see note 2.5 Impairment of non-current assets.

2) Total segment Earnings before financial item and tax is the same as Hydro group's total Earnings before financial income and tax. Financial income and financial expenses are not allocated to the segments. There are no reconciling items between segment Earnings before financial items and tax to Hydro Earnings before financial items and tax. Therefore, a separate reconciling table is not presented.

3) Total assets exclude internal cash pool accounts and accounts receivable related to group relief.

4) Additions to property, plant and equipment (capital expenditures) plus long-term securities, intangible assets, long-term advances and investments in equity accounted investments, including amounts recognized in business combinations. In 2018, investments were reduced with certain indirect tax charges in Brazil not completely deducted and claimed at the time of investment. A review of deductibility resulted in reduction of asset costs for Bauxite & Alumina and Primary Metal of NOK 635 million and NOK 145 million, respectively.

The identification of assets, non-current assets and investments is based on location of operation. Included in non-current assets are investments in equity accounted investments; property, plant and equipment (net of accumulated depreciation) and non-current financial assets.

Operating revenues are identified by customer location.

	Revenue		Non-current assets		Investments ¹⁾	
	2019	2018	2019	2018 Restated	2019	2018
Amounts in NOK million						
Norway	3,694	4,424	26,266	23,100	3,484	2,666
Germany	20,134	21,428	11,053	11,085	961	539
France	8,298	8,604	2,701	2,969	150	230
United Kingdom	6,888	7,933	1,473	1,476	98	134
Poland	6,010	6,577	875	761	168	280
Spain	5,814	6,017	801	863	98	175
Italy	5,080	5,802	563	615	47	138
The Netherlands	3,815	3,666	1,319	1,517	84	174
Austria	2,843	3,117	378	416	14	129
Sweden	2,547	2,477	826	877	68	135
Belgium	1,975	2,200	1,167	1,611	73	425
Denmark	1,727	1,761	915	859	137	10
Czech Republic	1,691	1,992	1	1	-	-
Portugal	1,128	1,258	140	137	19	(22)
Hungary	1,070	1,159	1,090	1,167	90	(109)
Slovakia	851	831	938	1,541	282	148
Other	2,531	3,106	261	270	30	49
Total EU	72,401	77,927	24,500	26,166	2,320	2,435
Switzerland	5,000	4,840	143	117	4	-
Turkey	2,188	2,222	4	8	-	-
Other Europe	1,725	1,670	-	-	-	-
Total Europe	85,008	91,083	50,913	49,391	5,808	5,101
USA	33,326	31,899	10,023	9,624	1,121	665
Canada	3,493	3,125	2,116	2,148	273	343
Brazil	6,244	7,700	33,940	35,261	3,044	1,411
Mexico	2,091	2,208	221	242	9	8
Other America	825	961	41	97	8	31
Japan	3,277	3,551	12	13	-	-
Singapore	3,236	3,303	7	16	-	-
China	2,794	2,266	658	679	46	(29)
Qatar	2,014	2,543	11,439	11,276	-	-
South Korea	1,334	1,833	-	-	-	-
India	955	1,441	204	225	12	29
Thailand	896	894	-	-	-	-
Taiwan	811	881	-	-	-	-
Bahrain	645	401	512	243	535	-
Other Asia	1,850	3,585	16	47	1	2
Australia and New Zealand	600	821	636	666	49	52
Africa	368	881	-	-	-	-
Total outside Europe	64,759	68,294	59,823	60,538	5,098	2,512
Total	149,767	159,377	110,736	109,929	10,907	7,614

1) Additions to property, plant and equipment (capital expenditures) plus long-term securities, intangible assets, long-term advances and investments in equity accounted investments, including amounts recognized in business combinations. In 2018, investments were reduced with certain indirect tax charges in Brazil not completely deducted and claimed at the time of investment. A review of deductibility resulted in reduction of asset costs for Bauxite & Alumina and Primary Metal of NOK 635 million and NOK 145 million, respectively.

Note 1.5 Significant subsidiaries and changes to the group

Accounting policies for business combinations

Business combinations are accounted for using the acquisition method in accordance with IFRS 3 Business Combinations. Consideration is the sum of the fair values, as of the date of exchange, of the assets given, liabilities incurred or assumed, and equity instruments issued in exchange for control of the acquiree. The fair value of Hydro's pre-existing ownership interest in an acquiree is included in the consideration, with any gain or loss recognized in Other income, net.

The acquiree's identifiable assets, liabilities and contingent liabilities are recognized separately at the acquisition date at their fair value irrespective of any non-controlling interest, and goodwill recognized to the extent the consideration exceeds identified net assets.

The interest of non-controlling shareholders in the acquiree is initially measured as the non-controlling interests' proportion of the fair value of the net assets recognized (partial goodwill method, see note 2.3 Goodwill), or as the non-controlling interests' proportion of the fair value of the acquiree (full goodwill method, see note 2.3 Goodwill). Non-controlling interests are subsequently adjusted for changes in equity of the subsidiary after the acquisition date.

Significant judgment in accounting for business combinations

In a business combination, consideration, assets and liabilities are recognized at estimated fair value, and any excess purchase price included in goodwill. Where Hydro had an existing ownership interest in the acquiree, that interest is also reassessed to determine its acquisition date estimated fair value, resulting in an acquisition date gain or loss. In the businesses Hydro operates, fair values of individual assets and liabilities are normally not readily observable in active markets. Estimation of fair values requires the use of valuation models for acquired assets and liabilities as well as ownership interests. Such valuations are subject to numerous assumptions and are thus uncertain. The quality of fair value estimates may impact periodic depreciation and amortization of fixed assets, and assessment of possible impairment of assets and/or goodwill in future periods.

Subsidiaries with significant non-controlling interests

The Hydro group consists of about 175 companies in about 40 countries. Most subsidiaries, including the large operating units in Norway and Germany, are 100 percent owned, directly or indirectly, by Norsk Hydro ASA. A list of significant subsidiaries is included in note 7 to the separate accounts of Norsk Hydro ASA later in this report. Restrictions in the ability to transfer dividend based on reported results and/or equity in the relevant subsidiaries exist in most countries where we operate. In some countries, including Brazil, there are also legal restrictions in our ability to integrate cash holdings in subsidiaries in the group's cash pool. There are non-controlling interests in some subsidiaries. The more significant ones are described below.

Albras

Hydro holds 51 percent of the shares in the Brazilian aluminium smelter Alumínio Brasileiro S.A. (Albras), which is part of Primary Metal. The non-controlling owner has significant influence on certain decisions in the entity, including operational and investment budgets. The non-controlling interests in Albras amounted to NOK 2,171 million as of December 31, 2019 and NOK 2,721 million as of December 31, 2018. Funds held by the entity are not available to the group through cash pool arrangements. Dividends need to be approved by the shareholders jointly. The shareholder agreement supports transfer of dividend to the extent possible under statutory regulations. The smelter produces standard ingots, which are sold to its shareholders, or the entities appointed by the shareholders, in proportion to ownership interest at a price based on prevailing aluminium prices at the London Metal Exchange and product premiums. In response to the regime for sales taxes in Brazil, an increasing share of the production is sold to domestic customers rather than exported.

Slovalco

Hydro holds 55 percent of the total shares and 60 percent of the voting interest in the Slovak smelter Slovalco a.s, which is part of Primary Metal. The non-controlling owner has significant influence on certain decisions in the entity, including operational and investment budgets. The plant is curtailed 20 percent as of December 2019, reflecting weaker market conditions. The plant was partly written down as impaired at the end of 2019, see note 2.5 Impairment of non-current assets. The non-controlling interests in Slovalco amounted to NOK 1,015 million as of December 31, 2019 and NOK 1,184 million as of December 31, 2018. Funds held by the entity are not available to the group through cash pool arrangements. Dividends need to be approved by the shareholders jointly. The shareholder agreement supports transfer of dividend to the extent possible under statutory regulations. The smelter produces metal products, of which the majority is sold to Hydro at a price based on prevailing aluminium prices at the London Metal Exchange and product premiums.

Alunorte

Hydro holds about 92 percent of the shares in the Brazilian alumina refinery Alumina do Norte do Brasil S.A. (Alunorte), which is part of Bauxite & Alumina. The non-controlling owners have limited influence on the operational decisions. The non-controlling interests in Alunorte amounted to NOK 810 million as of December 31, 2019 and NOK 859 million as of December 31, 2018. Funds held by the entity are not available to the group through cash pool arrangements. Dividends need to be approved by the shareholders jointly. The shareholder agreement supports transfer of dividend to the extent possible under statutory regulations. The refinery produces alumina, which is sold to its shareholders in proportion to ownership interest at a

price based on prevailing aluminium prices at the London Metal Exchange, with a minimum price based on production cost plus a margin, and a fixed maximum price.

The table below summarizes key figures for Albras, the only subsidiary with non-controlling interests considered material, as included in the group financial statements. Fair value adjustments from Hydro's acquisition of the subsidiary are included. Intercompany transactions and balances are included, and any internal profit and loss in inventory and fixed assets purchased from group companies are not eliminated in the numbers below.

Amounts in NOK million	Albras	
	2019	2018 Restated
Internal revenue	3,098	3,090
External revenue	2,695	4,171
Earnings before financial items and tax	(1,062)	344
Net income	(720)	200
Other comprehensive income	19	35
Total comprehensive income	(701)	236
Net cash flows from operating activities	(531)	942
Net cash flows from investing activities	(641)	(361)
Net cash flows from financing activities	1,047	(407)
Cash and cash equivalents	209	334
Other current assets	1,940	1,925
Non-current assets	4,624	4,443
Current liabilities	(1,603)	(669)
Non-current liabilities	(742)	(482)
Equity attributable to Hydro	(2,257)	(2,830)
Equity attributable to non-controlling interests	(2,171)	(2,721)
Share of net income attributable to non-controlling interest	(352)	104
Dividends paid to non-controlling interests	65	66

Section 2 – Long-lived assets

Note 2.1 Property, plant and equipment

Accounting policies for property, plant and equipment

Property, plant and equipment (PP&E) is recognized at acquisition cost. The carrying value of PP&E is comprised of the historical cost less accumulated depreciation and any accumulated impairment losses. The carrying value also includes the estimated value of the asset retirement obligation upon initial recognition of the liability. Hydro uses the cost model for PP&E and investment properties.

Capitalized maintenance

Expenditures for maintenance and repairs applicable to production facilities are capitalized in accordance with IAS 16 Property, Plant and Equipment when such costs are incurred on a scheduled basis with a time interval of greater than one year. Expenditures that regularly occur at shorter intervals are expensed as incurred. Major replacements and renewals are capitalized and any assets replaced are retired.

Stripping cost

Stripping costs incurred during the mining production phase are allocated between cost of inventory produced and the existing mine asset. Stripping costs are allocated as a component of the mine asset in the event they represent significantly improved access to ore. Stripping costs include such activities as removal of vegetation as well as digging the actual pit for mining the ore.

Capitalized interest

Hydro capitalizes borrowing costs on qualifying assets in accordance with IAS 23 Borrowing Costs. Currency gains or losses related to Hydro's foreign currency denominated borrowings are not capitalized.

The main components of Hydro's property, plant and equipment is production related machinery and buildings in Hydro's more than 100 operating plants. PP&E includes leased assets, see note 2.6 Leases.

Amounts in NOK million	Land and buildings	Machinery and equipment	Plant under construction	Total
Cost				
December 31, 2017	33,752	96,414	4,363	134,529
Additions	(11)	2,422	4,614	7,025
Acquisitions through business combinations	1,167	(208)	-	959
Disposals	(126)	(1,813)	(56)	(1,995)
Transfers	683	3,229	(3,912)	-
Foreign currency translation effect	(827)	(2,355)	(125)	(3,307)
December 31, 2018	34,638	97,689	4,885	137,212
Effect of change in accounting principle	1,628	1,443	-	3,070
Additions	458	3,729	5,702	9,889
Acquisitions through business combinations	73	(17)	-	56
Disposals	(381)	(2,240)	(20)	(2,640)
Transfers ¹⁾	533	2,966	(3,616)	(117)
Foreign currency translation effect	(329)	(1,048)	(91)	(1,469)
December 31, 2019	36,619	102,522	6,859	146,001
Accumulated depreciation and impairment				
December 31, 2017	(12,629)	(48,686)	(280)	(61,596)
Depreciation for the year	(1,158)	(5,705)	-	(6,862)
Disposals	104	1,612	-	1,716
Transfers	(31)	31	-	-
Foreign currency translation effect	209	592	28	830
December 31, 2018	(13,505)	(52,155)	(252)	(65,912)
Depreciation for the year	(1,517)	(6,514)	-	(8,030)
Impairment losses	(330)	(399)	(30)	(760)
Reversal of impairment losses	9	-	-	10
Disposals	296	1,998	2	2,296
Foreign currency translation effect	120	512	8	640
December 31, 2019	(14,928)	(56,558)	(273)	(71,758)
Carrying value				
December 31, 2018	22,761	46,976	4,633	74,369
December 31, 2019	21,692	45,964	6,587	74,243

1) Transfer includes reclassification of certain undeveloped mineral rights to intangible assets.

Note 2.2 Intangible assets

Accounting policies for intangible assets

Intangible assets acquired individually or as a group are recognized at fair value when acquired. Intangible assets acquired in a business combination are recognized at fair value separately from goodwill when they arise from contractual or legal rights or can be separated from the acquired entity and sold or transferred.

Emission rights

Government granted and purchased CO₂ emission allowances expected to be used towards Hydro's own emissions are recognized as intangible assets at nominal value (cost). The amounts are not amortized, but are tested for impairment at least annually. Actual CO₂ emissions which exceed the level covered by emission rights are recognized as a liability. Any sale of excess emission rights is recognized at the time of sale at the transaction price. CO₂ emission allowances purchased for trading are measured and classified as inventory.

Research and development

Research expenditures are expensed as incurred. Development costs are capitalized as intangible assets at cost in accordance with IAS 38 Intangible Assets when the recognition criteria are met, including probable future economic benefit and that the cost can be measured reliably.

Exploration cost

Exploration cost for mineral resources are expensed as incurred. Costs related to acquired exploration rights are allocated to the relevant areas and capitalized. An area represents a unit that may be utilized based on shared infrastructure and may include several licenses. Exploration rights are transferred to mine development cost when development starts. Amortization of transferred mineral rights starts when extraction of the resources starts. Exploration rights related to undeveloped areas remain on the balance sheet as intangible assets (mineral rights) until a development is decided or a decision not to develop the area is made.

Hydro holds intangible assets mainly as complementary resources to its physical assets. Waterfall rights are fundamental for production of hydroelectrical power, however, a significant share of such rights was granted to Hydro rather than purchased. A significant share of acquired waterfall rights have indefinite life and are thus not amortized. Mineral rights are undeveloped rights related to Hydro's mining operations in Brazil. Other intangible assets include customer relations, technology and other intangible assets identified in acquisitions, in addition to proprietary technology developed internally, and certain other types of intangible assets.

Amounts in NOK million	Intangible assets under development	Mineral and waterfall rights ¹⁾	Software	Technology	Acquired sourcing contracts	Other intangibles assets	Total
Cost							
December 31, 2017	263	1,104	1,420	1,856	1,146	1,788	7,576
Additions	158	2	36	2	-	55	252
Acquisitions through business combinations	-	-	(4)	(19)	-	(95)	(118)
Disposals	-	(2)	(6)	-	-	(17)	(25)
Transfers	(274)	-	44	237	-	(6)	-
Foreign currency translation effect	2	(84)	(17)	9	(116)	30	(175)
December 31, 2018	148	1,020	1,472	2,084	1,030	1,756	7,510
Additions	169	22	77	-	-	74	341
Acquisitions through business combinations	-	-	1	-	-	499	500
Disposals	-	-	-	(79)	-	(389)	(468)
Transfers ³⁾	(102)	117	92	5	-	6	117
Foreign currency translation effect	-	(22)	(21)	(17)	(29)	(6)	(94)
December 31, 2019	215	1,137	1,621	1,993	1,001	1,940	7,906
Accumulated amortization and impairment							
December 31, 2017	-	(35)	(890)	(199)	(531)	(479)	(2,133)
Amortization for the year ²⁾	-	(4)	(208)	(186)	(63)	(108)	(569)
Disposals	-	-	2	(3)	-	6	5
Foreign currency translation effect	-	-	7	(6)	54	(10)	45
December 31, 2018	-	(39)	(1,089)	(394)	(540)	(590)	(2,652)
Amortization for the year ²⁾	-	(3)	(212)	(187)	(62)	(141)	(604)
Impairment losses	-	(145)	(4)	-	-	(12)	(161)
Disposals	-	-	4	79	-	334	417
Foreign currency translation effect	-	1	16	4	17	8	45
December 31, 2019	-	(186)	(1,285)	(498)	(585)	(401)	(2,952)
Carrying value							
December 31, 2018	148	981	383	1,691	490	1,166	4,858
December 31, 2019	215	950	336	1,495	415	1,539	4,951

1) Some assets previously included in Other intangible assets have been concluded to be closely associated with waterfall rights, and thus moved.

2) Amortization of a sourcing contract is reported as Raw material and energy expense in the income statement.

3) Transfer includes reclassification of certain undeveloped mineral rights from property, plant and equipment.

Note 2.3 Goodwill

Accounting policies for goodwill

Goodwill is recognized as a part of business combinations. Goodwill is initially measured either as the excess of the consideration over Hydro's interest in the fair value of the acquiree's identifiable net assets (partial goodwill), or as the fair value of 100 percent of the acquiree in excess of the acquiree's identifiable net assets (full goodwill). The method is elected on a transaction-by-transaction basis. Hydro has applied the partial goodwill method for all business combinations completed prior to December 31, 2019. Goodwill is not amortized, but is tested for impairment annually, and more frequently if indicators of possible impairment are observed, in accordance with IAS 36 Impairment of Assets. Goodwill is allocated to the cash generating units or groups of cash generating units expected to benefit from the synergies of the combination and that are monitored for internal management purposes.

Hydro's goodwill

Goodwill allocated to Extruded Solutions was recognized in the acquisition of Sapa AS in 2017. Goodwill allocated to Bauxite & Alumina was recognized in the acquisition of certain aluminium businesses from Vale S.A. in 2011. Goodwill allocated to Metal Markets was recognized in acquisitions undertaken more than 15 years ago.

Amounts in NOK million	Extruded Solutions	Bauxite & Alumina	Metal Markets	Total
Cost				
December 31, 2017	4,309	2,572	388	7,269
Adjusted goodwill from business combination	(539)	-	-	(539)
Foreign currency translation effect	99	(261)	16	(146)
December 31, 2018	3,869	2,312	404	6,584
Acquisitions through business combinations	16	-	-	16
Foreign currency translation effect	12	(65)	3	(50)
December 31, 2019	3,897	2,247	407	6,551

Note 2.4 Depreciation and amortization expense

Accounting policies for depreciation and amortization

Depreciation and amortization expenses are measured on a straight-line basis over the estimated useful life of the asset, commencing when the asset is ready for its intended use. Mine property and development costs in extractive activities are depreciated using the unit-of-production method, using proved and probable reserves. Tangible and intangible assets with an indefinite useful life are not depreciated. Estimated useful life by category is as follows:

- Machinery and equipment, initial investment 4-30 years, for power plants up to 75 years
- Machinery and equipment, capitalized maintenance 1-15 years
- Buildings 20-50 years
- Intangible assets with finite lives 3-10 years, for rights related to hydroelectric power production up to 50 years

A component of an item of property, plant and equipment with a significantly differing useful life and a cost that is significant in relation to the item is depreciated separately. At each financial year-end Hydro reviews the residual value and useful life of its assets, with any estimate changes accounted for prospectively over the remaining useful life of the asset.

Specification of depreciation and amortization by asset category

Amounts in NOK million	2019	2018
Buildings	1,517	1,158
Machinery and equipment	6,514	5,705
Intangible assets	542	506
Depreciation and amortization expense	8,572	7,369

Note 2.5 Impairment of non-current assets

Accounting policies for impairment of property, plant and equipment and intangible assets

Property, plant and equipment and intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable, in accordance with IAS 36 Impairment of Assets. Goodwill and intangible assets with indefinite life are required to be tested for impairment annually, in addition to any tests required when impairment indicators are determined to be present. Hydro has elected to do the annual impairment test of goodwill in the fourth quarter. Exploration cost for undeveloped mining areas are assessed for impairment under IFRS 6 Exploration for and Evaluation of Mineral Resources.

When a Cash Generating Unit (CGU) or an asset is tested for impairment, the recoverable amount is estimated as the higher of the CGU's fair value less cost of disposal, or its value in use. The carrying amount is not recoverable if it exceeds the recoverable amount. An impairment loss is recognized in the amount that the carrying value exceeds its recoverable amount. Losses are reversed in the event of a subsequent increase in the recoverable amount of an impaired asset, however, impairment of goodwill is not reversed.

Significant judgement in accounting for impairment of non-current assets

IAS 36 requires that Hydro assess conditions that could cause an asset or a CGU to become impaired. The identification of CGUs involves judgment, including assessment of where active markets exist, and the level of interdependency of cash inflows. For Hydro, the CGU is either the individual plant, a group of plants that forms an integrated value chain where no independent prices for the intermediate products exist, a group of plants that are combined and managed to serve a common market, or a group of assets where circumstances otherwise indicate significant interdependencies. Assessing which indicators that may cause a CGU to be impaired includes such conditions as Hydro's market capitalization, significant changes in Hydro's planned use of the assets or a significant adverse change in the expected sales volumes or margins, i.e. the combination of product prices, raw material cost and energy cost.

Directly observable market prices rarely exist for our assets. However, fair value may be estimated based on recent transactions on comparable assets, internal models used by Hydro for transactions involving the same type of assets or other relevant information. Calculation of value in use is a discounted cash flow calculation based on continued use of the assets in its present condition, excluding potential exploitation of improvement or expansion potential.

Determination of the recoverable amount involves management estimates on highly uncertain matters, such as commodity prices and their impact on markets and prices for upgraded products, development in demand, inflation, operating expenses and tax and legal systems. We use internal business plans, quoted market prices and our best estimate of long-term development in commodity prices, currency rates, discount rates and other relevant information. A detailed forecast is developed for a period of three to five years with projections thereafter. Hydro does not include a general growth factor to volumes for the purpose of impairment tests, however, cash flows are generally increased by expected inflation and, where market conditions are depressed, we consider whether full or partial market recovery towards previously observed volumes is justified. Estimated cash flows are discounted with a nominal risk adjusted discount rate.

Tests performed in 2019 and 2018

Tests for impairment have been performed for all CGUs with mandatory annual tests and the CGUs where impairment indicators have been identified. The recoverable amount for these units have been determined estimating the Value in Use (VIU) of the asset and/or, if appropriate, its fair value less cost of disposal (FV), and comparing the highest of the two against the carrying value of the CGUs. The calculation of VIU has been based on management's best estimate, reflecting Hydro's business planning process. The discount rates are derived as the weighted average cost of capital (WACC) for a similar business in the same business environment. For Hydro's businesses the pre-tax nominal discount rate is estimated at between 5.5 percent and 16.5 percent (2018: 6.0-17.5 percent). The higher rates are applicable for assets within the Bauxite & Alumina and Primary Metal activities in Brazil, while the lower rates are applicable for assets within Extruded Solutions and Rolled Products in Europe.

Hydro has incurred the following impairment losses during 2019 and 2018:

Amounts in NOK million	2019	2018
Classification by asset category		
<i>Impairment losses</i>		
Property, plant and equipment	751	-
Intangible assets	161	-
Total impairment of non-current assets	912	-

Classification by segment

<i>Impairment losses</i>		
Bauxite & Alumina	152	-
Primary Metal	506	-
Extruded Solutions	255	-
Total impairment of non-current assets	912	-

Goodwill is allocated to CGUs or groups of CGUs as shown in the following table:

Amounts in NOK million	2019	2018
Extrusion North America (Extruded Solutions)	2,469	2,442
Extrusion Europe (Extruded Solutions)	769	778
Building Systems (Extruded Solutions)	514	504
Precision Tubing (Extruded Solutions)	144	145
Bauxite & Alumina Operations	2,247	2,312
Remelters sector (Metal Markets)	407	404
Total goodwill	6,551	6,584

Annual mandatory impairment tests*Extruded Solutions*

Goodwill in Extruded Solutions is allocated to four groups of CGUs reflecting the way the business is managed to serve the relevant markets. The groups of CGUs are as follows:

Extrusion North America covers production plants, marketing and product development in the US and Canada. The operation consists of 21 production plants, recognized intangible assets and goodwill from Hydro's acquisition.

Extrusion Europe covers production plants, marketing and product development in Europe, mainly within the EU. The operation consists of 40 production plants, recognized intangible assets and goodwill from Hydro's acquisition.

Building Systems covers production plants, product warehouses, marketing and product development facilities, mainly in Europe, and sales and marketing offices covering a wider presence. The operation is present at 45 locations in 25 countries. The asset base consists of a limited number of production plants, several warehouses of differing size and complexity, three brands, other intangible assets and goodwill from Hydro's acquisition.

Precision Tubing covers production plants, marketing and product development on four continents. The operation consists of 15 production plants in South America, Asia, Europe and North America, recognized intangible assets and goodwill from Hydro's acquisition.

The impairment tests for all of the groups of CGUs described above are cash flow models expressed in nominal terms using forecasts for the first year based on internal business plans approved by management. Results and investment levels are kept at a reasonably stable level from that period, which is considered representative. Margins, volumes and investments are considered highly correlated, as high margin above the metal value is achieved through production of more complex products, requiring higher cost and/or more expensive equipment. We have thus not considered development in margins, cost and volume separately. Cash flows have been projected as terminal values beyond the five-year forecast period with a zero nominal growth assumed. Key assumptions are development in annual net cash flows, comprising volume and cost development in relevant market segments, as well as the discount rate.

The main assumptions and sensitivities are shown in the tables below. The sensitivities represent a stress test, identifying changes in each parameter which would result in a recoverable amount equal to the carrying amount of the CGU, while

keeping all other parameters unchanged. The changed parameter is applied for the entire period, including the terminal value. The decrease in annual cash flows does not represent a reasonably possible scenario developed by Hydro, as changes in the market resulting in significantly reduced cash flows for individual plants or the whole business unit is likely to be mitigated with measures to reduce costs, including sale or closure of production lines or plants similar to what is currently ongoing.

Amounts in NOK million	Extrusion North America	Extrusion Europe	Building Systems	Precision Tubing
Carrying value of goodwill	2,469	769	514	144
Carrying value of other assets	6,818	8,065	3,237	2,701
Carrying value of CGU	9,287	8,834	3,751	2,845
Recoverable amount	10,150	16,378	11,987	3,466
Recoverable amount in excess of carrying value	863	7,545	8,236	621

Key assumptions:

Terminal value growth	0.0%	0.0%	0.0%	0.0%
Discount rate	7.75%	5.5%	5.5%	8.25%

Stress test

Discount rate - % change	9%	83%	205%	19%
Discount rate - % point	8.5%	10.0%	16.75%	10.0%
Annual reduction in net cash flow all years	8%	46%	67%	10%

Bauxite & Alumina

Goodwill in Bauxite & Alumina is allocated to a CGU consisting of the Alunorte alumina refinery, the main bauxite source Paragominas and certain related activities.

The recoverable amount has been determined based on a VIU calculation. Alunorte is currently operating at somewhat lower capacity utilization than the design capacity due to commissioning of the press filters used to prepare residue material for depositing. Eight filters were installed in 2018 and a ninth filters was installed at the end of 2019. The commissioning phase for the press filters was significantly delayed by the embargo imposed by the authorities, the final element of which was lifted in September 2019. A return to full capacity is assumed to be reached by the end of 2020.

Recoverable amount determined as a VIU calculation amounted to about NOK 32 billion. The value significantly exceeds the carrying value of NOK 23 billion. The calculation used cash flow forecasts in BRL based on internal plans approved by management covering a five-year period. All significant price assumptions are internally derived based on external references. Cash flows have been projected for the following 35 years based on the five-year detailed forecast period using Hydro's long-term assumptions for alumina prices and key raw material prices. The CGU is expected to remain in operation for at least the 40-year period. Improvements expected from certain planned equipment replacements are included. Further improvements are not included in the cash flow forecasts. Cash flows beyond the five-year period are inflated by the expected long-term inflation levels in Brazil and the main western economies.

The main assumptions to which the test is sensitive are shown in the table below:

	Assumptions	
	2020	Long-term
Exchange rate BRL/USD	3.90	
Alumina price real terms 2019 (USD/mt)	306	340
Production volume alumina (million mt)	6.0	6.3
Discount rate nominal, pre-tax	16.5%	16.5%

Significant cash flows are denominated in US dollars. These are translated to BRL at a rate of 3.90 for 2020 with an increase to a nominal rate of 4.44 in 2026. For future periods the exchange rate is projected with a rate development reflecting the inflation difference of 1.7 to 1.8 percentage points between international inflation and the higher expected Brazil specific inflation. With the estimated cash flows, the carrying amount of the CGU is recovered during a period of about 14 years.

The parameters presented below represent a stress test, identifying changes in each parameter which would result in a recoverable amount equal to the carrying amount of the CGU, while keeping all other parameters unchanged. The changed parameter is applied for the entire period, including the terminal value. The decrease in annual cash flows does not represent a reasonably possible scenario developed by Hydro. As the key parameters are interdependent, a change in the range indicated would not be expected to continue for the entire period of operation. If one of the key parameters were changed with no changes to the other assumptions, the estimated recoverable amount for the CGU would equal the carrying amount with the following long-term real 2019 assumptions over the entire 40-year period:

	% change	Value
Exchange rate BRL/USD	10%	
Alumina price, real term 2019 (USD/mt)	(6%)	321
Discount rate (% point)	23%	20.25%

Other mandatory tests

For Metal Markets the impairment test on goodwill has been based on approved business plan for the next year, managements best estimate of cash flows for the following four years and extrapolated to a 15 years cash flow estimate, providing a VIU exceeding the carrying value.

Hydro also has indefinite life intangible assets of NOK 138 million related to the Vigeland power plant in Norway. This CGU is tested for impairment using a FV approach based on observed transaction values for power production assets in the Nordic region. The recoverable amount, estimated as a post-tax fair value, exceeds the carrying amount significantly.

Impairment tests based on indications of loss in value

One primary aluminium plant, Slovalco, was tested for possible impairment at year-end 2019. The plant was also tested in the second quarter 2019 and at year-end 2018. The profitability of the plant is expected to be challenging going forward due to the weakening market environment combined with Slovalco's relatively high cost position and uncertainty related to the renewal of its power contract expiring at the end of 2021. The plant is currently curtailed by 20 percent in response to the weakening market environment. The recoverable amount was determined as VIU based on Hydro's internal assumptions for aluminium prices, raw material prices including energy, currency exchange rates and timing of cash flows. Contract prices are used for raw materials and energy for periods covered by specific contracts with external suppliers. For periods where such consumption is not yet contracted, or where internal supply of such items as alumina is expected, estimated market prices are used. The value in use is calculated as an expected value including a full restart of curtailed capacity, or a partial or full curtailment of the plant for an extended period. The estimated recoverable amount, using a discount rate of 9.75 percent, resulted in an expected recoverable amount of about NOK 725 million, which was below the carrying value of about NOK 1,225 million. Our testing has therefore resulted in an impairment of NOK 506 million, mainly related to property, plant and equipment.

Certain undeveloped bauxite resources held by Bauxite and Alumina was reviewed for possible future development, and one area was concluded not probable to be developed and thus the carrying value of NOK 145 million was written down as impaired. In addition, impairment losses of NOK 255 million have been recognized related to announced closure and sale of production facilities in Extruded Solutions.

Note 2.6 Leases

Accounting policies for leases

Hydro implemented IFRS 16 Leases as of January 1, 2019. IFRS 16 was implemented retrospectively with the cumulative effect of applying the standard recognized at the date of implementation. Hydro utilized the practical expedient available to not reassess whether contracts are or contain leases, and to measure leased assets previously accounted for as operating leases at an amount equal to the lease liability, adjusted for any prepaid or accrued lease payments, for close to all lease contracts. Leased assets with a remaining lease period of less than 12 months at transition are excluded from lease accounting. Further, leases of assets of a low value (small asset leases), mainly such items as PCs, office equipment and similar, are excluded from lease accounting. When measuring leases, Hydro include fixed lease payments for extension periods reasonably certain to be used. As a practical expedient, non-lease components are not separated from lease contracts for most asset classes. For transportation assets, such as vessels used for transportation of material, the operating cost is a significant non-lease component, and is excluded from lease accounting. Variable lease payments, including service elements related to leases which are fully variable amounts, are recognized as operating expenses in the periods incurred.

The effects of implementation of IFRS 16 is explained in note 10.5 Changes in accounting principles and new pronouncements. Right-of-use assets are included in property, plant and equipment, see note 2.1 Property, plant and equipment. Lease liabilities are included in debt, see note 7.4 Short and long-term debt.

Accounting principles applicable for the 2018 financial statements

Under IAS 17, applied for the 2018 financial statements, leases which transfer to Hydro substantially all the risks and benefits incidental to ownership of the leased item were identified using the guidance in IAS 17 Leases and IFRIC 4 Determining whether an Arrangement contains a lease. Such arrangements were capitalized as finance leases and included under Property, plant and equipment at the fair value of the leased asset, or, if lower, the present value of the minimum lease payments as of the later of date of inception of the lease or getting access to the services of the asset. The assets were depreciated over the shorter of the estimated useful life of the asset or the lease term. The liability was included in Long-term debt and amortized by the amount of the lease payment less the effective interest expense. All other leases were classified as operating leases with lease payments recognized as an expense over the term of the lease.

Significant judgement in accounting for leasing

Significant judgment is required to determine whether some service contracts conveys the right to control an asset to Hydro, and thus is, or contains, a lease. Hydro has a limited number of such contracts; however, they do exist in some arrangements with service providers for maintenance services, transportation services, and some operational subcontractors. In assessing whether such contracts are leases, Hydro assesses both the share of the supplier's capacity for relevant assets as well as how decisions are made.

Judgment is also applied in assessing whether renewal options are reasonably certain to be utilized. In assessing such issues, Hydro considers such factors as the level of operational integration and dependency as well as historic practices for renewals.

For some contracts where all, or close to all, produced products are purchased by Hydro with no or very limited fixed payments, the contract may be deemed a lease with fully variable payments. Currently, Hydro has no significant such contracts.

Hydro's leases

Hydro uses lease contract primarily where lease or rental contracts provide operational benefits or flexibility compared to owning assets. Leased land and buildings are used for warehouses, office space and certain other arrangements where the need for such space is of a temporary nature or where land and/or buildings are not available for purchase. This is the case in some countries, and also in co-locations with certain other businesses such as in port areas. Further, Hydro has a lease arrangement for its head office in Oslo, Norway, and certain other office locations where the location is independent of production facilities. Production equipment is leased or rented where the access to the specific assets is combined with significant services, for instance seaborne transport operated by the supplier/lessor. Operational services in combination with leasing of assets is also used for such services as maintenance activities, earth-moving operations, and certain other non-core services. Leasing or rental is in some instances also used for equipment operated by Hydro, often under contracts significantly shorter than the assets' useful life.

Implementation of IFRS 16 Leases

The impact on transition is summarized in the table below.

Amounts in NOK million	January 1, 2019
Operating lease commitments at 31 Desember 2018 as disclosed under IAS 17 in the Group's consolidated financial statements	2,884
Discounted using the incremental borrowing rate at January 1, 2019	2,564
Recognition exemption for leases of low-value assets	(53)
Recognition exemption for leases with less than 12 months of lease term at transition	(28)
Extension options reasonably certain to be exercised	252
Service elements in combined contracts	298
Other	58
Lease liabilities recognised at January 1, 2019	3,092

The incremental borrowing rate used for discounting of lease liabilities as of January 1, 2019 varies from the range of 1-4 % in Europe to 9-15% in Brazil.

Right-of-use assets

Amount in NOK million	Machinery and equipment	Buildings and land	Total
Balance at implementation of IFRS 16	2,055	1,636	3,691
Depreciations and impairment loss	(666)	(284)	(951)
Additions	446	70	516
Disposals	(14)	(15)	(29)
Other	17	9	26
Currency translation	(28)	(5)	(33)
Balance at December 31	1,810	1,410	3,220

Interest expense relating to lease recognized in the income statement for 2019 was NOK 206 million.

Leases expensed in the period amounts to NOK 319 million and refers to leases of short term, low value or leases with variable payments.

Total cash outflows for leases in 2019 was NOK 1.314 million.

Hydro has a limited amount of lease contracts not accounted for as right-of-use assets and lease liabilities at the balance sheet because they are exempted as small asset leases or short-term leases. Future minimum lease payments due under non-cancellable leases are NOK 142 million.

Note 2.7 Other non-current assets

Amounts in NOK million	2019	2018
Equity securities at fair value through other comprehensive income	829	1,405
Securities at fair value through profit or loss	535	536
Employee loans	116	107
Derivative instruments	39	336
Income taxes, VAT and other sales taxes	2,535	2,576
Other receivables	764	759
Other non-current assets	4,817	5,720

Section 3 – Investments in other companies

Note 3.1 Investments in joint arrangements and associates

Accounting policies for investments in joint arrangements and associates

Investments in associates and joint ventures

A joint arrangement is an entity, asset or operation that is subject to contractually established joint control. Special voting rights may extend control beyond what is conveyed through the owners' proportional ownership interest. Such rights may take the form of a specified number of board representatives, the right of refusal for important decisions, or the requirement of a qualified majority for important decisions which effectively results in joint control with the specific ownership situation. Joint ventures are joint arrangement which represents a residual interest in the arrangement rather than an interest in assets and responsibility for liabilities.

An associate is an equity investment in which Hydro has the ability to exercise significant influence, which is the power to participate in the financial and operating policy decisions of the entity. Significant influence is assumed to exist when Hydro owns between 20 and 50 percent of the voting rights unless other terms and conditions affect Hydro's influence.

Hydro accounts for investments in associates and participation in joint ventures using the equity method. This involves recognizing Hydro's interest based on its proportional share of the entity's equity, including any excess values and goodwill. Hydro recognizes its share of net income, including depreciation and amortization of excess values and any impairment losses, in Share of the profit (loss) in equity accounted investments. Other comprehensive income derived from associates and joint ventures is included in Hydro's Other comprehensive income. Hydro's proportional share of unrealized profits resulting from transactions with associates and joint ventures, including transfer of businesses, is eliminated. Accounting policies used by associates and joint ventures may differ from the accounting policies adopted by Hydro. Differences in recognition or measurement are adjusted for prior to equity accounting.

Investments in associates and joint ventures are tested for impairment when there are indications of a possible loss in value. An impairment loss is recognized if the recoverable amount, estimated as the higher of fair value less cost of disposal or value in use, is below Hydro's carrying value. Impairment losses are reversed if circumstances change and the impairment situation is no longer deemed to exist.

Loans to associates and joint ventures are presented as part of the investment. Loans are measured under IFRS 9 Financial instruments. Loans where contractual cash flows are only payments of principal and interest on specific dates are measured at amortized cost with expected credit losses provided for. Other loan arrangements are measured at fair value. Income and expenses related to loans are included in finance income and expense.

Investments in joint operations and jointly owned assets

Joint operations are arrangements under contractually joint control where the joint operators have an interest in the assets; or benefits from the service potential of the assets; as well as have a direct obligation for the liabilities of the joint arrangement. Joint operations can result from the legal form of the arrangement or other facts and circumstances resulting in an interest in the service potential of the asset and obligation for liabilities. Jointly owned assets are arrangements where Hydro and the other partners have a direct ownership in specifically identified assets, but where joint control is not established. Hydro recognizes its share of assets, liabilities, revenues, if any, and expenses of joint operations and jointly owned assets on a line-by-line basis in the group financial statements.

Hydro is engaged in various arrangements on a joint basis with other companies. In assessing whether joint control exists for these arrangements we evaluate the legal framework and contracts governing the arrangement combined with an assessment of which decisions that significantly influence the return from the arrangement. Arrangements owned on a 50/50 basis and/or governed by unanimous decisions constitute the majority of our joint arrangements.

Most of our joint arrangements are joint production facilities supplying metal and other products for Hydro's value chain. Hydro assesses whether joint arrangements are joint operations where Hydro has a direct interest in the assets and direct liability to settle obligations, directly or indirectly, or a joint venture where we have an interest in the net assets of the joint arrangement. In this assessment we evaluate the contracts governing the arrangement and the legal framework for the type of entity in which the arrangement is operated. Hydro is engaged in both joint arrangements that are considered joint ventures, and arrangements that are concluded to be joint operations.

Hydro's joint operations

Of our joint operations, two are classified as joint operations based on the legal form of the operations. These are Tomago, an aluminium smelter in Australia, and Skafså ANS, a power producer in Norway. Another two arrangements are classified as joint operations based on the contractual arrangements whereby all output is sold to the shareholders in proportion to their ownership interest at a cost based price formula. The major or sole sources of cash inflows for the joint arrangements are the

owners, who are legally obliged to cover production costs. These are Aluminium Norf GmbH (Alunorf), a large rolling mill in Germany, and Aluminium & Chemie Rotterdam B.V., Aluchemie, an anode producer in the Netherlands.

Hydro's joint ventures

The following joint venture is considered material for Hydro:

Qatar Aluminium Ltd. (Qatalum) is a primary aluminium smelter with a dedicated power plant located in Qatar. Qatalum has an annual production capacity of about 600,000 mt of liquid metal. Qatalum is owned by Hydro and Qatar Aluminium Manufacturing Company Q.P.S.C. (50 percent each). During 2018, Qatar Petroleum, which previously held 50 percent of the shares in Qatalum, transferred its shares to the newly established Qatar Aluminium Manufacturing Company, which was listed on the Qatar Stock Exchange, but which Qatar Petroleum retains a controlling interest in. Qatalum was at the outset granted a ten-year income tax holiday, expiring in 2020. A tax reform came into effect from 2010, which introduced a generally applicable corporate income tax rate of 10 percent. A tax rate of 35 percent applies to entities with oil and gas operations or where the activities are carried out under an agreement with the government or entities owned by the government, unless such agreement specifies another tax rate. According to the Qatalum joint venture agreement, the generally applicable tax rate will apply after expiry of the tax holiday in 2020. It is Hydro's position that the generally applicable income tax rate, currently at 10 percent, shall apply to Qatalum after the expiry of the tax holiday.

Qatalum's loan agreement contains a dividend restriction on dividend payments after July 2020. Qatalum is currently in the process of refinancing this loan facility.

Hydro is committed to sell fixed quantities of alumina and purchase all products from Qatalum at market prices. Purchases of metal from Qatalum amounted to NOK 11,678 million in 2019 and NOK 11,980 million in 2018. Related payables amounted to NOK 1,199 million in 2019 and NOK 1,052 million at the end of 2018. Sales from Hydro to Qatalum amounted to NOK 2,110 million in 2019 and NOK 2,761 million in 2018, primarily alumina. Related receivables amounted to NOK 131 million and NOK 3 million at the end of the periods. Qatalum is part of Primary Metal.

The table below summarizes key figures for this joint venture for 2019 and 2018. The figures are on the same basis as used for inclusion in the group financial statements. Fair value adjustments from Hydro's contribution of assets to the joint venture are included. Intercompany transactions and balances are included, and internal profit and loss in inventory and fixed assets purchased from group companies are not eliminated in the numbers below. All amounts are for the joint venture on 100 percent basis. Balance sheet amounts are at the end of the years 2019 and 2018.

Amounts in NOK million	Qatalum	
	Year/year ended 2019	2018 restated
Revenue	11,971	12,309
Depreciation, amortization and impairment	2,142	2,139
Earnings before financial items and tax	1,094	1,929
Financial income (expense), net ¹⁾	(554)	(484)
Net income (loss)	540	1,445
Other comprehensive income	45	151
Total comprehensive income	584	1,596
Cash and cash equivalents	2,401	2,543
Other current assets	4,512	4,625
Non-current assets	30,832	32,523
Current financial liabilities	1,816	2,094
Non-current financial liabilities	11,453	13,386
Other liabilities	1,649	1,789
Net assets	22,828	22,423
Hydro's share of net assets	11,414	11,211
Accumulated elimination of internal gain in inventory	25	64
Carrying value of Hydro's equity investment	11,439	11,276
Total investment	11,439	11,276

1) Financial income (expense), net includes interest expense for Qatalum with NOK 449 million and NOK 492 million for 2019 and 2018, respectively.

Hydro held an ownership interest in Technal Middle East W.L.L, a joint venture owned 50 percent each by Hydro and Bahrain Aluminium Extrusion Company B.S.C. In May 2019, Hydro acquired the additional 50 percent in Technal Middel East, now a fully owned subsidiary.

Hydro also holds interests in certain associates accounted for using the equity method, of which the most significant is Corvus Energy Holding AS, a company producing battery solutions for ships in Canada and Norway. The following table provides a summary of changes in carrying value for Hydro's joint ventures and associates.

Amounts in NOK million	Qatalum	Other JVs	Associates	Total
December 31, 2017	10,930	240	52	11,221
Hydro's share of net income (loss)	723	54	(19)	758
Hydro's share of other comprehensive income	75	(3)		72
Dividends and other payments received by Hydro	(1,173)	(46)		(1,219)
Companies acquired/(sold), net			25	25
Amortization		(2)	(15)	(17)
Loans		10		10
Changes elimination of internal gain in inventory	150			150
Foreign currency translation and other	571		(1)	570
December 31, 2018	11,276	252	42	11,570
Hydro's share of net income (loss)	270	18	(15)	274
Hydro's share of other comprehensive income	22			22
Dividends and other payments received by Hydro	(193)	(29)		(222)
Companies acquired/(sold), net			49	49
Amortization		(1)	(14)	(14)
Changes elimination of internal gain in inventory	(39)			(39)
Derecognized at acquisition of control		(232)		(232)
Foreign currency translation and other	104	(8)	(3)	93
December 31, 2019	11,440	1	60	11,501

Section 4 – Uncertain assets and liabilities

Note 4.1 Uncertain assets and liabilities

Accounting policies for uncertain liabilities resulting in provisions, contingent liabilities

Provisions are recognized when Hydro has a present obligation (legal or constructive) as a result of a past event and it is probable (more likely than not) that Hydro will be required to settle the obligation. Uncertain outcomes are measured as the expected value of reasonably possible outcomes. The provision is measured as the present value of the cash flows estimated to settle the obligation. Expected cash flows are discounted with a risk-free interest rate, usually a government bond rate.

A contingent liability is a possible obligation that arises from a past event, with the resolution of the contingency dependent on uncertain future events, or a present obligation where no outflow is probable. Contingent liabilities are not recognized on the balances sheet, the existence of such contingent liabilities and, if estimable the approximate size, are disclosed unless the possibility of an outflow of economic resources is remote.

Asset retirement obligations

Hydro recognizes liabilities for the estimated fair value of asset retirement obligations (ARO) relating to assets where such obligations exist, in the period incurred in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets. The provision is estimated as the present value of costs relating to the restoration or rehabilitation of industrial or mining sites and/or dismantlement or removal of buildings or other assets. The liability is recognized when an asset is constructed and ready for use or when the obligation is incurred if imposed at a later date. Related asset retirement costs are capitalized and depreciated over the useful life of the asset. Accretion expense is recognized for the change in the present value of the liability and classified as part of Financial expense. Other changes to estimated fair value of ARO are recognized when identified. The increase or reduction to the liability is recognized as an increase or reduction of the value of the asset unless the asset is no longer in use, in which case the change is recognized in operating expenses. Liabilities that are conditional on a future event (e.g. the timing or method of settlement) are recognized when the value of the liability can be reasonably estimated.

Exit and disposal costs

Hydro recognizes a provision in the amount of the direct costs associated with an exit and/or disposal activity when a formal commitment to a detailed exit plan is made and communicated to those affected. A provision for termination benefits to employees is recognized as of the date of notification to individual employees or their representatives.

Accounting policies for uncertain assets

Assets where the existence of an asset or Hydro's control with the resources is less than virtually certain are contingent assets. Contingent assets are not recognized.

Significant judgment in accounting for contingent assets and liabilities, uncertain assets and liabilities

Evaluation of uncertain liabilities and contingent liabilities and assets requires judgment and assumptions regarding the probability of realization and the timing and amount, or range of amounts, that may ultimately be incurred. Such estimates may vary from the ultimate outcome as a result of differing interpretations of laws and facts.

In relation to perceived non-compliance with laws and regulations, authorities, non-governmental organizations, or others may claim that Hydro is responsible for mitigating actions and compensation. The legal basis for such claims as well as cost calculation and other aspects can be difficult to assess.

Hydro's industrial and mining activities are subject to a wide range of environmental laws and regulations, including end-of-life remediation regulations. The extent of site and off-site contamination, the remediation methods and requirements that relevant environmental authorities may impose, are uncertain. The long-term use of sites, with increasing awareness of effects of contamination in society, a generally lower acceptance of contamination in communities over time, as well as changes in remediation methods and requirements, contribute to the uncertainty in assessing and measuring such obligations. Remediation and closure activities expected to be conducted far into the future are less accurately measured than near-term planned activities. Consequently, there is significant uncertainty inherent in the estimates.

Indirect tax regimes are complex in many jurisdictions and cross-border. Basis for such taxes may differ from actual transaction prices. In some jurisdictions, including Brazil, significant credit amounts are generated for use against future indirect and/or income tax payments. Repayment in cash is made subject to a set of conditions, including availability of funds at the tax authorities, and cannot be expected on a regular basis. The value of such credits depends on future generation of taxes. Economic conditions and tax regulations may change and lead to a different conclusion regarding recoverability. Tax authorities may challenge Hydro's calculation of taxes and credits from prior periods. Such processes may lead to changes to prior periods' operating or financial expenses to be recognized in the period of change.

Provisions

Amounts in NOK million	2019			2018		
	Short-term	Long-term	Total	Short-term	Long-term	Total
Environmental clean-up and asset retirement obligations (ARO)	702	4,110	4,813	563	3,737	4,299
Employee benefits	1,142	708	1,851	1,151	762	1,913
Indirect taxes	99	379	478	202	393	595
Rationalization and closure cost	705	495	1,200	88	-	88
Other	647	822	1,470	1,278	695	1,973
Total provisions	3,296	6,515	9,811	3,281	5,588	8,868

The following table includes a specification of changes to provisions for the year ending December 31, 2019.

Amounts in NOK million	Environmental clean-up and ARO	Employee benefits	Indirect taxes	Rationalization and closure cost	Other	Total
<i>Specification of change in provisions</i>						
December 31, 2018	4,299	1,913	595	88	1,973	8,868
Additions	859	1,293	15	1,289	487	3,944
Used during the year	(529)	(1,182)	(11)	(97)	(846)	(2,665)
Reversal of unused provisions	(30)	(159)	(110)	(80)	(138)	(517)
Accretion expense and effect of change in discount rate	270	1	-	4	4	279
Foreign currency translation	(56)	(15)	(12)	(5)	(11)	(98)
December 31, 2019	4,813	1,851	478	1,200	1,470	9,811

Provisions for environmental clean-up and asset retirement obligations relate to production facilities currently in operation and facilities that are closed. The obligations relate to such actions as restoration or rehabilitation of industrial or mining sites, disposal of contaminated material and related activities. Hydro has provided for demolition of buildings and installations only where there is a legal or contractual obligation, or a specific decision to demolish, which is the case for few sites. The provision represents the present value of expected outflows at the times of expected payments. There is significant uncertainty both in the timing and amount of these remediation actions, as they are linked to future business decisions as well as decisions and approval by authorities in the jurisdictions we operate. Provisions are based on the current legal framework.

The most significant provisions relate to the following sites and issues. For Bauxite & Alumina's mine in Brazil we have obligations to remediate the tailing areas and mining sites, including reforestation of the area and monitoring and maintenance of the site after initial remediation. For Bauxite & Alumina's alumina refinery in Brazil we have obligations to remediate bauxite residue deposits, including monitoring the contamination levels and other aspects after initial remediation. Some activities related to these obligations are currently ongoing. For Primary Metal's closed Kurri Kurri smelter site in Australia we have obligations to remediate certain contaminated areas at the site as well as securing appropriate deposit of spent pot lining and certain other waste material, which is currently ongoing. The plan for remediation is under discussion with the authorities, though not yet approved. Further, Hydro has provided for various remediation obligations in Extruded Solutions related to both closed sites, whether previously operated or not, and for some currently active sites. Hydro also has obligations for remediation of contamination on site and in related areas related to historic industrial activities in Germany and Norway, reported in Other and eliminations. The more significant of these sites are the sites in Schwandorf and Hannover in Germany and the Grenland area in Norway. For many of these provisions, there are no standard remediation methods available and cost is therefore uncertain. The provision also includes remediation of spent pot lining in all active smelters, site clearance for certain leased land as well as certain liabilities related to Norwegian power plant concessions to be reverted to the Norwegian Government.

Provisions for employee benefits relate to expected short-term performance bonus payments and short and long-term provisions for expected bonus payments that are based on the number of years of service, primarily for our European operations. Such bonuses are expected to be paid in periods between 10 to 50 years of service, or upon termination of employment.

Indirect taxes include taxes not related to taxable income, such as value added taxes, duties and property taxes. Provision for indirect taxes includes a charge related to a customs case in Germany and provisions for indirect taxes in Brazil.

Rationalization and closure cost includes provisions for the improvement program in Rolled Products aiming at significant efficiency gains and cost reductions. The main costs with this project are related to employee reductions. Further, Extruded Solutions has provided for costs related to plant closures and employee reductions to reduce their footprint in response to challenging market conditions.

Other includes insurance provisions related to insurance contracts issued by Hydro's captive insurance company, Industriforsikring AS, to external parties including associates and joint arrangements, provisions for legal and other disputes, certain liabilities related to representation and warranty provisions related to sale of businesses, as well as provision for a compensation for exit of a rental contract for premises.

Hydro has also entered into agreements with authorities in Pará, Brazil, in relation to the operations of the alumina refinery, Alunorte. The contracts regulate certain technical studies and improvements of operational security, audits, fines and payments for food cards to families living in the hydrographic area of the Murucupi River. In addition, Hydro has committed to additional efforts and investments related to the social development of communities in Barcarena. About NOK 600 million was provided for in 2018, with an additional NOK 70 million provided in 2019. About NOK 140 million has been spent on activities under these agreements in 2019. In addition, Hydro has committed to provide support to local societies close to the plant, which are expensed as incurred, and to certain investments in improved water treatment facilities and certain monitoring systems which are capitalized.

Contingent liabilities and contingent assets

Hydro is involved in or threatened with various legal and tax matters arising in the ordinary course of business. Where Hydro considers an obligation to be possible, i.e. not probable yet not remote, it is disclosed as a contingent liability.

Hydro is involved in a significant number of tax cases related to various types of taxes. Hydro's businesses in Brazil have a large portfolio of cases disputed by tax authorities, of which the majority relates to indirect taxes. This includes cases in the administrative and legal dispute systems with various background and risk of loss. In total known cases amount to about NOK 4.3 billion, of which about NOK 3.2 billion is considered possible. About half of those amounts are covered by tax indemnifications from acquisition. The final outcome of these cases is not expected until several years into the future, and is highly uncertain. Additional cases may be raised by tax authorities based on tax declarations for periods not yet assessed, or when interpretation of tax regulations change. Hydro has provided for individual tax cases where the risk of loss is considered above 50 percent. Provisions for indirect taxes are included in provisions disclosed above, while provisions for income tax expenses are included in Taxes payable.

Hydro has environmental liabilities related to several sites and issues. Where remediation is acknowledged as Hydro's responsibility or a legal obligation is deemed to exist, a provision for the best estimate of costs to be incurred is established. For many of our industrial sites, in particular sites where operation is expected to continue indefinitely, remediation costs are difficult to assess. The precise need for remediation actions, their timing and cost has not yet been planned, and is thus uncertain. For some sites, the exact level of pollution may also be uncertain as ground and water are not sampled where no indication of contamination is identified. Obligations for historic contamination of sites and surrounding areas in addition to areas provided for may be identified and deemed Hydro's responsibility, whether related to currently owned or used sites, or sites we previously have owned and/or used. The cost of remediation of any additional contamination deemed Hydro's responsibility is uncertain.

Authorities and non-governmental organizations have filed several lawsuits related to the Alunorte incident, claiming a combination of mitigating actions and financial compensation. The argumentation, cost calculation and legal basis for these claims is highly uncertain. Further claims may still be received. Given the limited information about claimed physical and moral damages to be compensated, and the extent and cost of mitigating actions claimed, or the extent or content of other potential claims and lawsuits, it is not possible at this time to provide a range of possible outcomes or a reliable estimate of potential future exposure for Hydro. It is further not possible to estimate the timing of when such claims may be determined or when any payments may arise.

Hydro is also exposed to increased product warranty and product liability responsibilities, both as result of contractual commitments and caused by liability under background law. Product warranty and product liability may impose significant costs depending amongst other things on the application of the product sold.

Hydro is exposed to legal cases based on contractual or other basis, including related to contract delivery or purchase obligations or warranties and representations given in relation to sale of businesses. Where a payment is probable, a provision for the likely amount is recognized.

Section 5 – Income and expenses

Note 5.1 Revenue from contracts with customers

Accounting policies for revenue recognition

Hydro accounts for revenue in accordance with IFRS 15 Revenue from Contracts with Customers.

IFRS 15 requires us to, for each contract with a customer, identify the performance obligations, determine the transaction price, allocate the transaction price to performance obligations to the extent the contract covers more than one performance obligation, determine whether revenue should be recognized over time or at a point in time, and, finally, recognize revenue when or as performance obligations are satisfied.

A performance obligation is satisfied when or as the customer obtains control with the goods or services delivered.

Revenue from sale of physical products are recognized when control is transferred to the customer, which usually occurs at delivery.

A contract for sale of electricity is considered one performance obligation and recognized as electricity is delivered to customers through the relevant grid.

Margins related to the trading of derivative commodity instruments, including instruments used for risk management purposes, purchase or delivery of physical commodities on a commodity exchange, and physical commodity purchases and sales agreed in combination with a single counterpart, are presented on a net basis in the income statement with trading margins included in revenues.

Significant judgment in accounting for revenue

The significant judgment in applying IFRS 15 for Hydro is related to which contracts that qualify for recognition over time, versus recognition at a point in time; at delivery to customer.

Hydro's main performance obligations can be described as follows:

- sale of products, produced independent of customer orders
- sale of products, produced to customer order
- sale of products made to customer specifications and order
- sale of electricity

For products which are not made to the customer's specification, performance obligations are either the individual product, the delivery in total, or an agreed volume of products delivered in more than one delivery. Contracts covering a fixed, committed volume at fixed or determinable prices are relevant for this assessment. Delivery period for such contracts can cover a period of a few weeks, and up to one year. Some contracts cover more than one year, however, these are a declining number. Prices are usually a combination of fixed elements and market references such as the aluminium price at the London Metal Exchange or other market references, at, or prior to, delivery. Revenue related to products that are not made to the customers' specification is recognized at delivery of products to customers. Such contracts accounts for the majority of sales in the segments Bauxite & Alumina, Primary Metal, Metal Markets and Rolled Products, and a significant share of sales in Extruded Solutions. Some of these contracts includes an element of freight services, which is considered a separate performance obligation under IFRS 15, and related revenue is recognized over the time of journey.

For products made to customer specifications and orders, we have assessed whether the finished product has an alternative use to Hydro, and whether Hydro at all times has an enforceable right to payment for performance completed to date. For contracts where both of these conditions are fulfilled, revenue shall be recognized over the time from start of production of the specialized product until completion of delivery to the customer. For Hydro's products, the alternative use of customer designed products would, in most cases, be as basis for producing other products rather than for sale of the product unchanged. We have assessed whether Hydro has an enforceable right to payment for performance completed to date, including a reasonable margin, throughout the production period. The assessment is primarily related to the segment Extruded Solutions. The main assessment is related to which compensation Hydro would be entitled to in a situation where firm orders are canceled or amended by the customer. Our conclusion is that for close to all contracts we do not have enforceable right to payment as described in IFRS 15, and revenue is thus recognized at a point in time. However, as our conclusions depends both on legal assessment of a large number of contracts in many countries, and on the understanding of what constitutes an enforceable right to payment under IFRS 15, we might reach a different conclusion in the future for some contracts, or for new contracts covering similar products and customer segments entered into in the future. Also for these contracts, prices are fixed at the time of delivery.

Payment and warranty terms

Payment terms for products vary between customer segments and regions. The predominant terms vary between 30 to 60 days, and up to 180 days in some markets.

Hydro's warranty terms vary by product and business segment. Generally, Hydro provides warranty that product complies with specification, and offer repair, replacement or refund of consideration paid for breaches. Such warranties are limited in time, for most products not exceeding 12 months. Individual contracts may include more extensive warranty clauses where Hydro takes responsibility also for some consequential damages, mainly related to more complex products such as certain automotive parts. Warranty liability is to some degree influenced by legal requirements, which may extend the time period for Hydro's liability.

Other information

Sale of electricity, primarily from the Energy segment, is recognized as electricity is delivered to customers through the relevant grid. Sale of energy from other segments represent excess energy purchased under contracts exceeding the operational needs, and relate to periodic maintenance stops or curtailment. During 2019, power sale from other segments than Energy is related to the 50 percent curtailment in Primary Metal's Albras plant for parts of the year, amounting to NOK 337 million for 2019 and NOK 1,429 million for 2018. Revenue from sale of energy includes the revenue from sale of concession power, a legal requirement to deliver a certain part of volume produced in Norway to local authorities at a reduced price. Revenue from concession power amounted to NOK 73 million and NOK 78 million in 2019 and 2018, respectively.

Realized and unrealized changes in fair value of commodity derivatives are also presented as part of revenue. These amounts are measured at fair value as required by IFRS 9 Financial Instruments. The instruments are mainly aluminium and power contracts used for risk management purposes, and are included in Other revenue in the table below.

Hydro's revenue divided by segment and geographic location of the customer is shown in note 1.4 Operating and geographic segment information. Revenue divided by product type for the main product groups sold are as follows:

Amounts in NOK million	2019	2018
Extruded solutions	58,555	61,367
Rolled products	25,768	26,538
Standard ingots	9,872	8,997
Extrusion ingots	20,118	22,030
Other casthouse products	16,791	17,804
Alumina	10,037	11,322
Power	3,018	5,021
Other goods and services ¹⁾	5,170	5,333
Total revenue from contracts with customers	149,328	158,411
Other revenue	438	965
Total revenue	149,766	159,377

1) Includes sale of bauxite and revenue from allocated freight

Sales commitments

Hydro has entered into sales contracts with customers, mainly for aluminium products and alumina, either as firm commitments or as committed frame agreements where the customer decides if, and for which volume, a future sale is made. The majority of these contractual commitments are for sale of products at price terms linked to market prices at, or close to, future delivery. The commitments amount to NOK 61 billion, calculated using market prices as of the end of the year. About NOK 15 billion of this amount is expected to be delivered in 2020.

Note 5.2 Other income

Accounting policies for Other income, net

Transactions resulting in income from activities other than normal production and sales operations are classified as Other income, net. This includes gains and losses resulting from the disposal of PP&E and intangible assets, investments in subsidiaries, associates or joint ventures as well as government grants, insurance compensation, and rental revenue. Other income, net also includes revenue from utilities, which is revenue from contracts with customers accounted for in accordance with IFRS 15.

Government grants

Government grants are recognized in accordance with IAS 20 Accounting for Government Grants and Disclosure of Government Assistance. Grants are recognized when there is a reasonable assurance that Hydro will comply with relevant conditions and that the grants will be received. Government grants are deferred in other non-current liabilities until the associated activity is performed or expenses recognized. Investment grants are recognized over the period the associated asset is depreciated. All government grants are recognized in Other income, net. Investment grants are included in Investing activities in the statement of cash flows.

Amounts in NOK million	2019	2018
Gain on sale of property, plant and equipment and intangible assets	99	37
Net gain (loss) on sale of subsidiaries, associates and joint ventures	43	(6)
Revenue from utilities ¹⁾	67	58
Rental revenue	58	45
Government grants ²⁾	329	380
Other ³⁾	403	259
Other income, net	1,000	772

1) Revenue from utilities includes quay structures, pipe network, tank terminal, process water and grid rental.

2) Government grants includes export grants in Brazil, CO2 compensation and investment grants related to Hydro's pilot facility on Karmøy

3) Other includes insurance compensations.

Note 5.3 Raw material and energy expense

Amounts in NOK million	2019	2018
Raw material expense and production related cost	95,729	105,118
Change in inventories own production	1,745	(2,596)
Raw material and energy expense	97,474	102,523

Raw material expense and production related cost include effect of commodity derivative instruments. See note 8.3 Derivative instruments and hedge accounting.

Section 6 – Specification of operating capital elements

Note 6.1 Inventories

Accounting policies for inventories

Inventories are valued at the lower of cost, using the first-in, first-out method (FIFO), or net realizable value. Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and selling costs. Inventory cost includes direct materials, direct labor and a portion of production overhead (manufactured goods) or the purchase price of the inventory. Abnormal amounts of idle facility expense, freight, handling costs, and wasted materials are recognized as expense in the current period. Inventory write-downs to net realizable value occurs when the cost of the inventory is not recoverable, and is reversed in later periods if there is clear evidence of an increase in the net realizable value.

Amounts in NOK million	2019	2018
Spare parts and raw materials	5,540	6,086
Work in progress	4,257	5,710
Alumina	1,385	2,977
Aluminium casthouse products	5,776	7,394
Fabricated products	3,858	4,316
Inventories	20,816	26,483

Raw materials includes purchased raw materials such as bauxite, caustic soda, oil, coal and other input factors used in the production; however, excluding alumina and aluminium intended for use in Hydro's production of other products. All amounts are net of any write-downs.

Note 6.2 Trade and other receivables

Accounting policies for trade receivables

Trade receivables are initially recognized at transaction price, subsequently accounted for at amortized cost and are reviewed for impairment on an ongoing basis. Individual accounts are assessed for impairment taking into consideration indicators of financial difficulty and management assessment. Portfolios of trade receivables where expected losses are more than insignificant are reduced for those expected losses. Discounting generally does not have a material effect on trade receivables, however, in special cases discounting may be applied. Hydro's business model for most trade receivable is to hold the receivables to collect the contractual cash flows. For some portfolios of trade receivables, factoring is applied.

Amounts in NOK million	2019	2018
Trade receivables	15,225	17,144
VAT and other sales taxes	1,486	1,578
Other current receivables	2,642	2,170
Allowance for credit losses	(394)	(149)
Trade and other receivables	18,959	20,743

Of total trade receivables at year end 2019, about 12 percent were past due, with the majority within 30 days. The Extruded Solutions segment has the majority of overdue receivables.

Note 6.3 Trade and other payables

Amounts in NOK million	2019	2018
Accounts payable	14,432	16,361
Payroll and value added taxes	3,151	2,901
Accrued liabilities and other payables	1,109	1,120
Trade and other payables	18,692	20,381

Section 7 – Capital management and cash management

Note 7.1 Capital management

Hydro's capital management policy is to maximize value creation over time, while maintaining a strong financial position and an investment grade credit rating. During 2019 net cash provided by operating activities was close to net cash used in investing activities plus dividends paid.

Credit rating

To secure access to capital markets at attractive terms and remain financially solid, Hydro aims to maintain an investment grade credit rating from the leading agencies, Standard & Poor's (current rating BBB, stable outlook) and Moody's (current rating Baa2, negative outlook). Hydro targets, over the business cycle, a ratio of Funds from operations to average adjusted net cash (debt) of at least 40 percent, and an Adjusted net cash (debt) to Equity ratio below 55 percent.

Funding

Hydro manages its funding requirements centrally to cover group operating requirements and long-term capital needs.

Hydro has an ambition to access national and international capital markets as primary sources for external long-term funding.

Hydro has a syndicated USD 1,600 million revolving credit facility maturing in December 2024, with two one-year extension options. The facility was undrawn per year-end 2019.

Funding of subsidiaries, associates and jointly controlled entities

Normally the parent company, Norsk Hydro ASA, extends loans or equity to wholly-owned subsidiaries to fund capital requirements. All financing is executed on an arm's length basis. To the extent Hydro offers loans to part-owned subsidiaries and investments in associates and joint arrangements, the policy is to participate according to Hydro's ownership share, on equal terms with the other owners. Project financing is used for certain funding requirements mainly to mitigate risk while also considering partnership and other relevant factors.

Trade finance products such as factoring and reverse factoring are used to some extent by subsidiaries, mainly to facilitate risk mitigation in specific trade relations or markets. Hydro has internal guidelines limiting the use of such instruments to where it adds commercial value, as these instruments should not be used as a source for funding. Hydro has set a total limit for such arrangements including any type of sales of receivables. The limit is currently NOK 5 billion, but it is not fully utilized.

Shareholder return

Long-term return to shareholders should reflect the value created by Hydro, and consists of dividends and share price development. Hydro aims to provide its shareholders with a competitive return compared with alternative investments in similar companies. Our ambition is in the long term to pay out, on average, 40 percent of net income as ordinary dividend over the cycle to our shareholders. The dividend policy has a floor of an annual dividend of NOK 1.25 per share. Dividends for a particular year are based on expected future earnings and cash flow, future investment opportunities, the outlook for world markets and Hydro's current financial position. Share buybacks or extraordinary dividends may be used to supplement ordinary dividends during periods of strong financial results after considering the status of the business cycle and capital requirements for future growth.

Hydro's capital management measures

Hydro's management uses the Adjusted net cash (debt) to Equity ratio to assess the group's financial solidity and ability to absorb volatility in the markets. Net cash (debt) is defined as Hydro's cash and cash equivalents plus short-term investments, less short- and long-term interest-bearing debt. Adjusted net cash (debt) is adjusted for net cash (debt) positions regarded as unavailable for servicing debt, and includes pension liabilities and other obligations which are considered debt-like in nature. The calculation of Adjusted net cash (debt) changed when IFRS 16 Leases was implemented as of January 1, 2019. Recognized lease liabilities were included in Net cash (debt), and the adjustment for operating lease commitments, net of expected income tax benefit, was no longer relevant.

The ability to generate cash compared to financial liabilities is another important measure of risk exposure and financial solidity. Hydro's management uses Funds from operations and the ratio Funds from operations to average Adjusted net cash (debt) as capital management measures. The ratio definition has changed to use a four-quarter rolling average of Adjusted net cash (debt). The previous methodology considered the year-end value only. The updated ratio definition also reflects variations in Adjusted net cash (debt) during the year. The 2018 value has been restated accordingly. Funds from operations reflects the cash generation from Hydro's wholly and partly owned operating entities before changes in net operating capital, including the contribution from equity accounted investments, and after current tax expense.

Both financial ratio calculations include adjustments for the indebtedness of Hydro's equity accounted investments. Though Hydro has no financial obligations towards the lenders of its equity accounted investments, the adjustments are considered relevant as the debt and cash flow level in these entities affect Hydro's overall cash generation and financial risk profile.

Adjusted net cash (debt), Equity, Funds from operations and the above mentioned financial ratios are presented in the following table.

Adjusted net cash (debt) including net debt equity accounted investments (EAI)

Amounts in NOK million	Dec 31	Sep 30	Jun 30	Mar 31	Dec 31	Sep 30	Jun 30	Mar 31
	2019	2019	2019	2019	2018	2018	2018	2018
	As reported							
Cash and cash equivalents	12,286	10,581	10,590	6,099	5,995	6,846	5,682	9,371
Short-term investments	969	929	1,090	1,274	975	1,176	1,136	1,031
Bank loans and other interest-bearing short-term debt	(6,157)	(6,074)	(8,177)	(8,913)	(8,543)	(6,607)	(4,969)	(5,269)
Long-term debt	(18,858)	(19,985)	(18,620)	(10,559)	(7,080)	(7,886)	(9,377)	(8,746)
Net cash (debt)	(11,760)	(14,549)	(15,117)	(12,099)	(8,653)	(6,471)	(7,528)	(3,612)
Cash and cash equivalents and short-term investments in captive insurance company ¹⁾	(876)	(899)	(944)	(879)	(876)	(968)	(1,059)	(1,026)
Net pension obligation at fair value, net of expected income tax benefit ²⁾	(8,601)	(10,282)	(8,757)	(8,414)	(8,813)	(6,419)	(6,998)	(7,517)
Operating lease commitments, net of expected income tax benefit ³⁾					(1,708)	(1,585)	(1,585)	(1,585)
Short- and long-term provisions net of expected income tax benefit, and other liabilities ⁴⁾	(4,209)	(3,876)	(3,087)	(3,001)	(3,077)	(2,938)	(3,040)	(3,150)
Adjusted net cash (debt)	(25,447)	(29,606)	(27,905)	(24,394)	(23,127)	(18,380)	(20,209)	(16,890)
Net debt in EAI ⁵⁾	(5,537)	(5,376)	(5,386)	(5,737)	(5,584)	(5,648)	(5,658)	(5,666)
Adjusted net cash (debt) including EAI	(30,984)	(34,982)	(33,291)	(30,131)	(28,711)	(24,028)	(25,868)	(22,556)

Adjusted net cash (debt) including EAI / Equity

NOK million, except ratio	2019	2018
Total equity	(84,081)	(90,769)
Adjusted net cash (debt) including EAI / Equity	0.37	0.32

- 1) Cash and cash equivalents and short-term investments in Hydro's captive insurance company Industriforsikring AS are assumed to not be available to service or repay future Hydro debt, and are therefore excluded from the measure Adjusted net cash (debt).
- 2) The expected income tax benefit related to the net pension liability is NOK 1,821 million and NOK 1,673 million, respectively, for 2019 and 2018.
- 3) The adjustment for operating lease commitments was relevant prior to implementing IFRS 16 Leases as of January 1, 2019. The adjustment was net of expected income tax benefits and thus different from the amounts included in note 2.6. Leases
- 4) Consists of Hydro's short and long-term provisions related to asset retirement obligations, net of an expected tax benefit estimated at 30 percent, and other non-current financial liabilities.
- 5) Net debt in equity accounted investments is defined as the total of Hydro's relative ownership percentage of each equity accounted investment's short and long-term interest-bearing debt less their cash positions, reduced by total outstanding loans from Hydro to the equity accounted investment. Net debt per individual equity accounted investment is limited to a floor of zero. The adjustments are related to Qatalum.

Funds from operations / average Adjusted net cash (debt) including EAI

Amounts in NOK million, except ratio	2019	2018
Net income (loss)	(2,370)	4,323
Depreciation, amortization and impairment	9,485	7,369
Deferred taxes	(699)	(585)
Loss (gain) on sale of non-current assets	85	188
Net foreign exchange (gain) loss	1,204	1,303
Capitalized interest	(44)	(1)
Commodity derivatives	(29)	(415)
Hydro's share of depreciation, amortization and impairment in EAI	1,071	1,070
Funds from operations	8,703	13,252
Average Adjusted net cash (debt) including EAI	(32,347)	(25,291)
Funds from operations / average Adjusted net cash (debt) including EAI¹⁾	0.27	0.52

1) The definition has changed to use a four-quarter rolling average of Adjusted net cash (debt) including EAI. The previous methodology considered the year-end value only. The change means that the calculated ratio reflects varying debt levels through the year. The 2018 value has been restated accordingly

Note 7.2 Cash and cash equivalents

Accounting policies for cash and cash equivalents

Cash and cash equivalents in the balance sheet includes cash, bank deposits and all other monetary instruments with a maturity of less than three months from the date of acquisition and are measured at nominal value.

Liquidity management

Hydro manages its liquidity requirements centrally to cover group operating requirements. Hydro operates cash pools in several currencies where wholly owned subsidiaries participate, to the extent permitted by country legislation. Such cash pool arrangements facilitate netting of cash positions within the group, thereby reducing the requirement for external financing, and centralizing management of aggregated positions. At the end of 2019, NOK 4.0 billion of Hydro's cash position of NOK 12.3 billion was outside such group arrangements, mainly in Brazil.

Note 7.3 Short-term investments

Amounts in NOK million	2019	2018
Equity securities	293	253
Debt securities	529	603
Other	147	119
Total short-term investments	969	975

Note 7.4 Short and long-term debt

Amounts in NOK million	2019	2018 Restated
Bank loans and overdraft facilities	3,560	5,455
Other interest-bearing short-term debt	248	275
Current portion of long-term debt	2,349	3,643
Bank loans and other interest-bearing short-term debt	6,157	9,373

Amounts in NOK million	2019	2018 Restated
EUR	7,816	11
USD	4,723	1,458
NOK	2,998	4,497
SEK	1,885	2,915
Other	1	18
Total unsecured loans	17,423	8,900
Lease liabilities	3,784	4,085
Outstanding debt	21,207	12,985
Less: Current portion	(2,349)	(3,643)
Total long-term debt	18,858	9,342

Long-term debt includes four bonds in NOK and SEK listed on the Oslo Stock Exchange and two bonds in EUR listed on the Irish Stock Exchange (Euronext Dublin). As of December 31, 2019, the market value of these bonds is approximately NOK 350 million higher than the carrying value.

Reconciliation of liabilities arising from financing activities

Amounts in NOK million	Long-term debt	Bank loans and other interest-bearing short-term debt	Total liabilities from financing activities
December 31, 2017	9,012	8,245	17,257
Cash flows	815	(2,676)	(1,861)
Non-cash changes:			
Net change in current balance	(2,771)	2,771	-
Amortizations	6	-	6
Foreign currency effects	18	204	221
December 31, 2018	7,080	8,543	15,623
Effect of change in accounting principle	2,262	830	3,092
December 31, 2018 restated	9,342	9,373	18,716
Cash flows	11,089	(5,556)	5,533
Non-cash changes:			
Net change in current balance	(2,324)	2,324	-
New leases	519	-	519
Lease debt cancellations	(27)	-	(27)
Business combinations	11	12	23
Amortizations	13	-	13
Foreign currency effects	233	5	238
December 31, 2019	18,858	6,157	25,015

Note 7.5 Finance income and expense

Amounts in NOK million	2019	2018
Interest income (amortized cost)	295	250
Dividends received and net gain (loss) on securities	70	6
Finance income	365	255
Interest expense (amortized cost)	(893)	(699)
Capitalized interest	44	1
Net foreign exchange gain (loss)	(1,204)	(1,303)
Accretion	(309)	(260)
Other	(58)	(53)
Finance expense	(2,420)	(2,315)
Finance income (expense), net	(2,055)	(2,060)

Accretion represent the period's interest component for pension obligations, asset retirement obligations and other liabilities measured as present value of future expected payments.

Note 7.6 Shareholders' equity

Share capital

Number of shares	Ordinary shares issued	Treasury shares	Ordinary shares outstanding
December 31, 2017	2,068,998,276	(24,300,928)	2,044,697,348
Treasury shares issued to employees		1,605,449	1,605,449
December 31, 2018	2,068,998,276	(22,695,479)	2,046,302,797
Treasury shares issued to employees		1,345,993	1,345,993
December 31, 2019	2,068,998,276	(21,349,486)	2,047,648,790

The share capital of Norsk Hydro ASA as of December 31, 2019 and 2018 was NOK 2,271,760,107 consisting of 2,068,998,276 ordinary shares at par value of NOK 1.098 per share. All shares have equal rights and are freely transferable.

Treasury shares

The treasury shares may, pursuant to the decision of the General Meeting at the time these shares were acquired, be used as consideration in connection with commercial transactions or share schemes for the employees and representatives of the Corporate Assembly and the Board of Directors.

The treasury shares amount per December 31, 2019 of NOK 711 million was comprised of NOK 23 million share capital and NOK 688 million retained earnings.

Change in Other components of equity

The table below specifies the changes in Other components of equity for 2019 and 2018.

Amounts in NOK million	2019	2018
Items that will not be reclassified to income statement:		
Remeasurement postemployment benefits		
January 1	55	773
Remeasurement postemployment benefits during the year	(128)	(925)
Deferred tax offset	(315)	208
December 31	(388)	55
Unrealized gain (loss) on assets measured at FVOCI		
January 1	155	(239)
Period unrealized gain (loss) on FVOCI securities	(664)	394
December 31	(509)	155
Items that will be reclassified to income statement:		
Currency translation differences		
January 1	(3,895)	(1,864)
Currency translation differences during the year	(576)	(2,031)
December 31	(4,471)	(3,895)
Cash flow hedges - See note 8.3 Derivative instruments and hedge accounting		
January 1	(49)	(35)
Period gain recognized in Other comprehensive income	(108)	(141)
Reclassification of hedging gain (loss) to Net income	132	124
Tax expense	(5)	3
December 31	(30)	(49)
Other components of equity in equity accounted investments		
January 1	105	33
Period gain (loss) recognized in Other comprehensive income	22	72
Reclassified to Net income on divestment of equity accounted investments	9	-
December 31	137	105
Total other components of equity attributable to Hydro shareholders as of December 31	(3,496)	(1,936)
Total other components of equity attributable to non-controlling interests as of December 31	(1,765)	(1,692)

Earnings per share

Basic and diluted earnings per share is computed using Net income attributable to Hydro shareholders and the weighted average number of outstanding shares in each year. There are no significant diluting elements. The weighted average number of outstanding shares used for calculating basic and diluted earnings per share was 2,047,057,976 for 2019 and 2,045,796,971 for 2018.

Hydro's outstanding founder certificates and subscription certificates entitle the holders to participate in any share capital increase, provided that the capital increase is not made in order to allot shares to third parties as compensation for their transfer of assets to Hydro. These certificates represent dilutive elements for the earnings per share computation.

Note 7.7 Dividends

Hydro's Board of Directors normally proposes a dividend per share in connection with the fourth quarter results that are published in February each year. The Annual General Meeting considers this proposal, normally in May, and the approved dividend is then paid to the shareholders. Dividends are paid once each calendar year; generally occurring in May. For non-Norwegian shareholders, Norwegian withholding tax will be deducted at source in accordance with the applicable Norwegian tax regulations.

For fiscal year 2019 the Board of Directors has proposed a dividend of NOK 1.25 per share to be paid in May 2020. The Annual General Meeting, scheduled to be held May 11, 2020, will consider this dividend proposal. If approved, this would be a total dividend of approximately NOK 2,560 million. In accordance with IFRS, the fiscal year 2019 proposed dividend is not recognized as a liability in the 2019 financial statements.

Dividends declared and paid in 2019 and 2018 for the prior fiscal year, respectively, are as follows:

	Paid in 2019 for fiscal year 2018	Paid in 2018 for fiscal year 2017
Dividend per share paid, NOK	1.25	1.75
Total dividends paid, NOK million	2,558	3,581
Date proposed	February 7, 2019	February 15, 2018
Date approved	May 7, 2019	May 7, 2018
Dividend payment date	May 16, 2019	May 18, 2018

Dividends to non-controlling shareholders in Hydro's subsidiaries are reported as dividends in Consolidated statements of changes in equity.

Section 8 – Financial risk and financial instruments

Note 8.1 Financial and commercial risk management

Hydro is exposed to market risks from fluctuations in the price of commodities bought and sold, prices of other raw materials, currency exchange rates and interest rates. Price volatility, which may be significant, can have a substantial impact on Hydro's results. Market risk exposures are evaluated based on a holistic approach in order to take advantage of offsetting positions and to manage risk on a net exposure basis. Natural hedging positions are established where possible and economically viable. Hydro uses financial derivatives to some extent to manage financial and commercial risk exposures. Hydro's main policy to manage market volatility is to keep a strong financial position. Hydro's market risk strategy is materially unchanged in 2019 compared to previous years.

Commodity price risk exposure

Aluminium

Hydro produces primary aluminium and aluminium casthouse products, both based on primary aluminium and remelted aluminium, and fabricated aluminium products. Hydro also engages in sourcing and trading activities to procure raw materials and primary aluminium for internal use and for resale to customers. These activities serve to optimize capacity utilization, reduce logistical costs and strengthen the market positions. Hydro also participates in trading activities within strict volume and risk limits.

Hydro enters into future contracts on the London Metal Exchange (LME) mainly for two purposes. The first is to achieve an average LME aluminium price on smelter production. Second, because Hydro's downstream businesses, remelting, and the sale of third-party products are based on margins above the LME price, Hydro seeks to offset the metal price exposure when entering into customer and supplier contracts with corresponding physical or derivative future contracts at fixed prices (back-to-back hedging). Hydro manages these exposures on a portfolio basis, taking LME positions based upon net exposures within given limits. Aluminium price volatility can result in significant fluctuations in earnings as the derivative positions are marked to their market value with changes to market value recognized in the income statement, while the underlying physical metal transactions normally are not marked-to-market, except for those included in trading portfolios. The majority of Hydro's LME contracts mature within one year.

Hydro's sales of primary aluminium, aluminium casthouse products and fabricated aluminium products include a premium above the LME aluminium price. The pricing of these premiums can be volatile, and is related to physical demand and supply, with regional and product-related differences. Over the later years, these premiums have been a higher share of the revenue than historic averages. There are limited possibilities for hedging future premiums, except for standard ingot premiums, for which a forward market exists. Hydro has from time to time entered into contracts for standard ingot premiums to mitigate risk in sales contracts.

In order to secure cash flow or margins for specific projects or special circumstances, Hydro might enter into futures contracts on a longer-term basis. In these cases, hedge accounting has normally been applied.

Bauxite and alumina

Hydro's production of alumina normally exceeds the alumina consumption in its primary aluminium production. In addition, Hydro has entered into long-term agreements to purchase alumina from third parties. In 2018 and into 2019, Hydro's production at Alunorte was limited by the production embargo, leading to increased external sourcing in the spot market. The majority of purchase and sale contracts are priced with reference to alumina spot price indexes.

Hydro is a producer and consumer of bauxite. Hydro's need for bauxite is secured through own production as well as by long-term contracts. The purchasing contracts have links to the LME aluminium price and to the alumina spot price development with a certain time-lag. Hydro has a limited volume of excess bauxite from long-term sourcing contracts, which is sold under medium and short-term contracts with prices linked to an alumina price index or open price negotiations.

Electricity

Hydro is a large power consumer in several countries and with significant power production in Norway. Hydro's consumption is mainly secured through long-term contracts with power suppliers and through Hydro's own production. Hydro's own production is influenced by hydrological conditions which can vary significantly. The net power position in Norway is balanced out in the Nordic power market. In order to manage and mitigate risks related to price and volume fluctuations, Hydro utilizes physical contracts and derivatives including future contracts, forwards and options. Hydro also participates in trading activities within strict volume and risk limits.

The longer duration of fixed or linked contracts for purchase of electricity compared to other input factors and sale of products may constitute a margin risk.

A significant part of Hydro's power purchase contracts is linked to aluminium prices in order to mitigate market price risk related to the sales of its aluminium products. These contract elements are separated from their host contracts and accounted for as derivatives. Further, an increasing share of power contracts in Norway are priced in Euro. There is no consensus that the Euro is a commonly used currency in the relevant market, the euro price clauses are thus accounted for separately as currency forwards.

Other raw materials

Hydro is party to both long-term and short-term sourcing agreements for a range of raw materials and services with both fixed and variable prices. Such agreements include pitch, petroleum coke, caustic soda, natural gas, coal, fuel oil and freight. The number of purchasing agreements with prices linked to the price of other commodities such as aluminium is limited and the fair value exposure is considered to be immaterial.

Foreign currency risk exposure

The prices of Hydro's upstream products bauxite, alumina and primary aluminium, are mainly denominated in US dollars. Margins for mid- and downstream products are mainly priced in US dollars and Euro. Further, the prices of major raw materials used in Hydro's production processes, are quoted in US dollars in the international commodity markets. Hydro also incurs local costs related to the production, distribution and marketing of products in a number of different currencies, mainly Norwegian Krone, Brazilian Real, Euro and US dollar.

Hydro's primary underlying foreign currency risk is consequently linked to fluctuations in the value of the US dollar and Euro versus the currencies in which significant costs are incurred. In addition, Hydro's results and equity are influenced by value changes for the functional currencies of the individual entities and the Norwegian Krone as the Group's presentation currency.

To mitigate the impact of exchange rate fluctuations, long-term debt is mainly maintained in currencies reflecting underlying exposures and cash generation, while considering attractiveness in main financial markets. To reduce the effects of fluctuations in the US dollar and other exchange rates, Hydro also uses foreign currency swaps and forward currency contracts from time to time.

Foreign currency risk exposure in financial instruments

Short-term receivables and payables are often held in currencies other than the functional currency of the unit. Fluctuations between the functional currency and the currency in which the receivable or payable is denominated are reported in Financial expense. Borrowings and deposits may be denominated in other currencies than the functional currency of the unit. Fluctuations between the functional currency and the instrument's currencies, both short and long term, impact the recognized value of the liability or asset, and are reported in Financial expense. Embedded currency derivatives in non-financial contracts, including the Euro priced electricity contracts discussed above, contains a currency exposure with changes to the fair value of the embedded derivative included in Financial expenses. Investments in equity instruments of other entities are often impacted by changes in currency exchange rates. As such investments are carried at fair value, the currency changes are included in the changes of fair value and reported as an integral part of such changes.

Interest rate exposure

Hydro is exposed to changes in interest rates, primarily as a result of financing its business operations and managing its liquidity in different currencies. Cash and other liquid resources, as well as debt, are currently mainly held in Norwegian Krone, Swedish Krone, Euro, US dollars and Brazilian real. The corresponding interest rate exposures are consequently related to Norwegian Krone, Swedish Krone, Euro, US dollar and Brazilian real short-term rates.

Financial instruments and provisions are also exposed to changes in interest rates in connection with discounting of positions to present value.

Credit risk management

Hydro manages credit risk by setting counterparty risk limits and establishing procedures for monitoring exposures and timely settlement of customer accounts. Credit risk is further limited through use of credit insurance, and, in some markets, sale of receivables to banks. Prepayments or guarantees are required where credit risk is outside the limits set for the relevant counterpart. Hydro is also monitoring the financial performance of key suppliers in order to reduce the risk of default on operations and key projects. Our overall credit risk exposure is reduced due to a diversified customer base representing various industries and geographic areas. Enforceable netting agreements, guarantees, and credit insurance, also contribute to a lower credit risk.

Credit risk arising from derivatives is generally limited to net exposures. Exposure limits are established for financial institutions relating to current accounts, deposits and other obligations. Credit risk related to commodity derivatives is limited by settlement through commodity exchanges such as the London Metal Exchange, Nasdaq, and banks. Current counterparty risk related to the use of derivative instruments and financial operations is considered limited.

Liquidity risk

Volatile commodity prices and exchange rates as well as fluctuating business volumes and inventory levels can have a substantial effect on Hydro's cash positions and borrowing requirements.

To fund cash deficits of a more permanent nature Hydro will normally raise equity, long-term bond or bank debt in available markets. Some suppliers have access to supply chain finance facilities, which allows those suppliers to benefit from Hydro's credit profile. The use of such products is expected to decline during 2020 due to a change of Hydro's policy for use of such facilities. Further, all other financial liabilities, such as trade payables, with the exception of derivatives, have a final maturity date within one year.

A summary of Hydro's total contractual obligations and commercial commitments to make future payments is presented below:

Amounts in NOK million	Less than 1 year	1-3 years	3-5 years	Thereafter	Total
Long-term debt including interest (note 7.4)	2,820	7,840	2,921	9,543	23,123
Unconditional purchase obligations ¹⁾	44,877	57,429	49,492	187,087	338,885
Contractual commitments for PP&E	2,886	2,203	543	-	5,632
Total contractual and non-contractual obligations, undiscounted	50,582	67,472	52,956	196,630	367,640
Present value of short-term and long-term provisions (note 4.1)	3,296	3,121	553	2,841	9,811

1) Unconditional purchase obligations include long-term contracts with equity accounted investees.

Hydro has long-term contractual commitments for the purchase of aluminium, raw materials, electricity, and transportation in addition to long-term sales commitments. The future non-cancellable fixed and determinable obligations under purchase commitments as of December 31, 2019 are shown in the following table:

Amounts in NOK million	Bauxite, alumina and aluminium	Energy related	Other
2020	25,374	15,184	4,319
2021	16,914	13,206	2,411
2022	16,230	6,899	1,767
2023	16,376	7,102	1,248
2024	16,543	7,325	898
Thereafter	137,686	41,412	7,990
Total	229,125	91,128	18,633

Amounts relating to contracts which are entirely or partly linked to market prices such as LME are based on the spot price at the balance sheet date.

The following table specifies Hydro's payment obligations related to investments:

Amounts in NOK million	Total
Contract commitments for investments in property, plant and equipment	1,399
Additional authorized future investments in property, plant and equipment	4,232
Total	5,632

Additional authorized future investments include projects formally approved for development by the Board of Directors or management. General investment frames are excluded from these amounts.

An overview of estimated gross cash flows from derivatives accounted for as liabilities and assets is presented below. Many of these assets and liabilities are offset by cash flows from contracts not accounted for as derivatives.

Risk of significant cash payments or margin calls related to derivative instruments is limited due to strict volume limits, value-at-risk and tenor limits for relevant trading activities.

Expected gross cash flows from derivatives accounted for as financial liabilities and financial assets, respectively, as of end of year:

Amounts in NOK million	December 31, 2019		December 31, 2018	
	Liabilities	Assets	Liabilities	Assets
2019			(314)	580
2020	(78)	279	(45)	47
2021	(1)	1	(1)	1
Total	(79)	281	(361)	628

The cash flows above are to a large extent subject to enforceable netting agreements reducing Hydro's exposure substantially.

For additional information on contracts accounted for at fair value, see note 8.3 Derivative instruments and hedge accounting.

Note 8.2 Financial instruments

Accounting policies for financial instruments

Financial assets

Financial assets represent a contractual right by Hydro to receive cash or another financial asset in the future. Financial assets include financial derivatives and commodity derivative contracts, receivables and equity interests, as well as financial instruments used for cash-flow hedges.

Financial assets are recognized in accordance with IFRS 9 Financial Instruments. On initial recognition, a financial asset is classified as measured at amortized cost; at fair value through other comprehensive income (FVOCI) or at fair value through profit or loss (FVTPL). Classification depends on the business model and, for some instruments, the company's choice. Financial assets are derecognized when the rights to receive cash from the asset have expired or when Hydro has transferred the asset.

Trade receivables

Trade receivables are initially recognized at transaction price, subsequently accounted for at amortized cost and are reviewed for impairment on an ongoing basis. Individual accounts are assessed for impairment taking into consideration indicators of financial difficulty and management assessment. Portfolios of trade receivable where expected losses are more than insignificant are reduced for those expected losses. Discounting generally does not have a material effect on accounts receivable, however, in special cases discounting may be applied. Hydro's business model for most trade receivable is to hold the receivables to collect the contractual cash flows. For some portfolios of trade receivables, factoring is applied.

Debt instruments

Debt instruments other than trade receivables include bank deposits and all other monetary instruments with a maturity above three months at the date of purchase, investments in debt securities, and certain other receivables. These instruments are measured at amortized costs, with the exception of instruments where cash flows are not contractually fixed and thus required to be measured at FVTPL.

Short-term debt instruments are included in Short-term investments. Long-term debt instruments are included in Other non-current assets, with the exception for loans to associates and joint ventures, which are included in Investments accounted for using the equity method.

Equity instruments

Hydro's portfolio of trading securities is measured at FVTPL, and included in Short-term investments. Other equity investments that are not consolidated or accounted for using the equity method are classified as either FVTPL or FVOCI on an individual investment basis. Hydro classifies investments in other entities with strategic or operational purpose, such as getting access to raw materials or in other ways cooperating with those entities, primarily as FVOCI, as Hydro considers this classification to be more relevant. Any dividend received from such investment is recognized in Finance income. On disposal of these investments, no gain or loss will be recognized in the income statement, however, any related accumulated value change will be reclassified from Other components of equity to Retained earnings.

Financial liabilities

Financial liabilities represent a contractual obligation by Hydro to deliver cash in the future, and are classified as either short- or long-term. Financial liabilities include financial derivatives, commodity derivative contracts and other financial liabilities as well as financial instruments used for cash-flow hedges. Financial liabilities, with the exception of derivatives, are initially recognized at fair value, including transaction costs directly attributable to the transaction, and are subsequently measured at amortized cost. Financial liabilities are derecognized when the obligation is discharged through payment or when Hydro is legally released from the primary responsibility for the liability.

Derivative instruments

Derivative instruments are marked-to-market with the resulting gain or loss reflected in the income statement, except when the instruments meet the criteria for cash flow hedge accounting and are designated as hedge instruments. Derivatives, including hedging instruments and embedded derivatives with expected cash flows within twelve months from the balance sheet date, or held solely for trading, are classified as short-term. Instruments with expected cash flows more than 12 months after the balance sheet date are classified as short and long-term based on the timing of the estimated cash flows.

Derivative contracts are presented gross on the balance sheet unless contract terms include the possibility to settle the contracts on a net basis and Hydro has the intention and ability to do so. The ability to settle net is conditional on simultaneous offsetting cash-flows.

Physical contracts for commodities that are readily convertible to cash are evaluated on a portfolio basis. Portfolios are defined based on business purpose, internal mandates and internal responsibilities. If a portfolio of contracts contains contracts of a similar nature that are settled net in cash, or the underlying products are not intended for own use, the entire portfolio of contracts is recognized at fair value and classified as derivatives. Physical commodity contracts that are entered into and continue to be held for the purpose of the receipt or delivery of the commodity in accordance with Hydro's expected purchase, sale or usage requirements (own use) are not accounted for at fair value. Commodity purchase contracts are generally considered to be the primary source for usage requirements. Hydro's own production of such commodities, for instance electricity, alumina and primary aluminium, is considered to be available for use or sale at Hydro's discretion unless relevant concessions contains restrictions for use.

Derivative commodity instruments are marked-to-market with their fair value recorded in the balance sheet as either assets or liabilities. Adjustments for changes in the fair value of the instruments are reflected in revenue and/or raw material cost. Forward currency contracts and currency options are recognized in the balance sheet and measured at fair value at each balance sheet date with the resulting gain or loss recorded in Finance expense. Interest income and expense relating to swaps are netted and recognized as income or expense over the life of the contract.

Hedge accounting is applied when specific hedge criteria are met, including documentation of the hedge relationship. The changes in fair value of the hedging instruments are offset in part or in full by the corresponding changes in the fair value or cash flows of the underlying hedged exposures. Gains and losses on cash flow hedging instruments are recognized in Other comprehensive income and deferred in the Hedging reserve in Other components of equity until the underlying transaction is recognized in the income statement. Deferred gains and losses relating to forecasted hedged transactions that are no longer expected to occur are immediately recognized in the income statement. Any amounts resulting from hedge ineffectiveness are recognized in the current period's income statement.

An embedded derivative is accounted for as a separate financial instrument, provided that the economic characteristics and risks of the embedded derivative are not closely related to those of the host contract, a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative, and the host contract is not accounted for at fair value. Embedded derivatives are classified both in the income statement and on the balance sheet based on the risks in the derivatives' underlying.

Financial instruments

Certain commodity contracts are deemed to be financial instruments under IFRS 9 or to contain embedded derivatives which are required to be recognized at fair value, with subsequent changes in fair value impacting the income statement. Determining whether contracts qualify as financial instruments at fair value involves evaluation of markets, Hydro's use of those instruments and historic or planned use of physically delivered products under such contracts. Determining whether embedded derivatives are required to be separated and accounted for at fair value involves assessing price correlations and normal market pricing mechanisms for relevant products and marketplaces. Where no directly observable market prices exist, fair value is estimated through valuation models which rely on internal assumptions as well as observable market information such as forward curves, yield curves and interest rates. Market stability impacts the reliability of observed prices and other market information, and consequently, the extent of judgment necessary to estimate appropriate market prices for valuation purposes. Volatility also impacts the magnitude of changes in estimated fair value, which can be substantial, in particular on long-term contracts. Historically, financial and commodity markets have been highly volatile.

Financial instruments, and contracts accounted for as such, are in the balance sheet included in several line items and classified in categories for accounting treatment.

The below specification relates to financial statement line items containing financial instruments. Information is classified and measured in accordance with IFRS 9.

Amounts in NOK million	Derivatives at FVTPL ¹⁾	Derivatives identified as hedging instruments	Debt instruments at amortized cost	Financial instruments at FVTPL ²⁾	Equity instruments at FVOCI	Financial liabilities at amortized cost	Non-financial assets and liabilities ³⁾	Total
2019								
Assets - current								
Cash and cash equivalents	-	-	12,286	-	-	-	-	12,286
Short-term investments	-	-	147	822	-	-	-	969
Trade and other receivables	-	-	15,804	-	-	-	3,155	18,959
Other current financial assets	444	-	-	-	-	-	190	634
Assets - non-current								
Investments accounted for using the equity method	-	-	3	-	-	-	11,497	11,501
Other non-current assets	39	-	880	535	829	-	2,535	4,817
Liabilities - current								
Bank loans and other interest-bearing short-term debt	-	-	-	-	-	6,157	-	6,157
Trade and other payables	-	-	-	-	-	10,740	7,952	18,692
Other current financial liabilities	196	38	-	-	-	1	-	235
Liabilities - non-current								
Long-term debt	-	-	-	-	-	18,858	-	18,858
Other non-current financial liabilities	2,992	-	-	-	-	-	-	2,992
2018								
Assets - current								
Cash and cash equivalents	-	-	5,995	-	-	-	-	5,995
Short-term investments	-	-	119	856	-	-	-	975
Trade and other receivables	-	-	17,860	-	-	-	2,884	20,743
Other current financial assets	605	-	-	-	-	-	196	801
Assets - non-current								
Investments accounted for using the equity method	-	-	11	-	-	-	11,559	11,570
Other non-current assets	333	3	867	535	1,405	-	2,576	5,720
Liabilities - current								
Bank loans and other interest-bearing short-term debt	-	-	-	-	-	8,543	-	8,543
Trade and other payables	-	-	-	-	-	12,830	7,551	20,381
Other current financial liabilities	445	66	-	-	-	5	-	515
Liabilities - non-current								
Long-term debt	-	-	-	-	-	7,080	-	7,080
Other non-current financial liabilities	2,429	-	-	-	-	-	-	2,429

1) FVTPL is financial instruments at fair value through profit or loss. FVOCI is financial instruments at fair value through other comprehensive income.

2) Financial Instruments at Fair Value Through Profit or Loss (FVTPL) are instruments required by IFRS 9 to be at FVTPL.

3) Includes items that are excluded from the scope of IFRS 7, such as investments accounted for using the equity method, except loans to such entities.

Financial assets, classified as current and non-current, represent the maximum exposure Hydro has towards credit risk as at the reporting date.

Collateral or margin calls are required for some financial liabilities, primarily related to derivative transactions. Such collaterals for financial instruments are reported as part of Short-term investments.

Impairment of receivables are disclosed in note 6.2 Trade and other receivables. No other financial assets are currently impaired based on credit losses.

Gains and losses

Realized and unrealized gains and losses from financial instruments and contracts accounted for as financial instruments are included in several line items in the income statement. Below is a reconciliation of the effects from Hydro's financial instruments in the income statements:

Amounts in NOK million	Derivatives at FVTPL	Derivatives identified as hedging instruments	Debt instruments at amortized cost	Financial instruments at FVTPL	Equity instruments at FVOCI	Financial liabilities at amortized cost	Non-financial assets and liabilities	Total ¹⁾
2019								
<i>Income statement line item</i>								
Revenue	(402)	-	-	-	-	-	-	(402)
Raw material and energy expense	10	(91)	-	-	-	-	-	(82)
Financial income	-	-	-	(70)	-	-	-	(70)
Financial expense	808	-	-	-	-	-	-	808
<i>Gain/loss in Other comprehensive income</i>								
Recognized in Other comprehensive income (before tax)					664			
Removed from Other components of equity and recognized in the income statement					-			
2018								
<i>Income statement line item</i>								
Revenue	(983)	-	-	-	-	-	-	(983)
Raw material and energy expense	(135)	163	-	-	-	-	-	28
Financial income	-	-	-	(3)	-	-	-	(3)
Financial expense	574	-	-	-	-	-	-	574
<i>Gain/loss in Other comprehensive income</i>								
Recognized in Other comprehensive income (before tax)					(394)			
Removed from Other components of equity and recognized in the income statement					-			

1) Amounts indicates the total gains and losses to financial instruments for each specific income statement line.

Currency effects, with the exception of currency derivatives, are not included above. Negative amounts indicate a gain.

Sensitivity analysis

In accordance with IFRS, Hydro has chosen to provide information about market risk and potential exposure to hypothetical loss from its use of derivative financial instruments and other financial instruments and derivative commodity instruments through sensitivity analysis disclosures. The sensitivity analysis depicted in the tables below reflects the hypothetical gain/loss in fair values that would occur assuming a 10 percent increase in rates or prices and no changes in the portfolio of instruments as of December 31, 2019 and December 31, 2018. Effects shown below are largely also representative of reductions in rates or prices by 10 percent but with the opposite sign convention. Only effects that would ultimately be accounted for in the income statement, or equity, as a result of a change in rates or prices, are included. All changes are before tax.

Amounts in NOK million	Fair value as of December 31 ¹⁾	Gain (loss) from 10 percent increase in Foreign currency exchange rates			Commodity prices		Interest-rates	
		USD	EUR	Other	Aluminium	Other	Interest-rates	Other
2019								
Derivative financial instruments ²⁾	(2,957)	-	(2,659)	-	-	-	85	-
Other financial instruments ³⁾	(5,277)	(575)	(485)	(80)	-	-	2	29
Derivative commodity instruments ⁴⁾	246	18	12	-	(347)	27	(1)	(2)
Financial instruments at FVOCI ⁵⁾	791	-	(4)	1	-	9	(85)	78
2018								
Derivative financial instruments ²⁾	(2,149)	-	(2,542)	-	-	-	33	-
Other financial instruments ³⁾	(2,399)	(537)	303	(191)	-	-	-	24
Derivative commodity instruments ⁴⁾	214	5	18	-	(298)	81	(3)	(1)
Financial instruments at FVOCI ⁵⁾	1,343	256	(6)	1	-	19	(123)	137

1) The change in fair value due to price changes is calculated based on pricing formulas for certain derivatives, the Black-Scholes/Turnbull-Wakeman models for options and the net present value of cash flows for certain financial instruments or derivatives. Discount rates vary as appropriate for the individual instruments.

2) Includes forward currency contracts and embedded currency derivatives.

3) Includes cash and cash equivalents, investments in securities, bank loans and other interest-bearing short-term debt and long-term debt. Trade payables and trade receivables are also included.

4) Includes all contracts with commodities as underlying, both financial and physical contracts, such as LME contracts and NASDAQ Nordic Power contracts, which are accounted for at fair value.

5) Includes hedging derivatives.

The above sensitivity analysis reflects sensitivities for the instruments held at the balance sheet dates only. Related offsetting physical positions, contracts, and anticipated transactions are not reflected. The calculations do not take into consideration any adjustments for potential correlations between the risk exposure categories, such as the effect of a change in a foreign exchange rate on a commodity price.

The above discussion about Hydro's risk management policies and the estimated amounts included in the sensitivity analysis relates to the balance sheet position as of December 31. Outcomes at other dates could differ materially based on actual developments in the global markets and Hydro's positions. The methods used by Hydro to analyze risks discussed above should not be considered as projections of future events, gains or losses.

The following is an overview of fair value measurements categorized on the basis of observability of significant measurement inputs. Certain items are valued on the basis of quoted prices in active markets for identical assets or liabilities (level 1 inputs), others are valued on the basis of inputs that are derived from observable prices (level 2 inputs), while certain positions are valued on the basis of judgmental assumptions that are to a limited degree or not at all based on observable market data (level 3 inputs). The level in this fair value hierarchy within which measurements are categorized is determined on the basis of the lowest level input that is significant to the fair value measurement.

Amounts in NOK million	2019	Level 1	Level 2	Level 3	2018	Level 1	Level 2	Level 3
Assets								
Commodity derivatives	462	223	70	170	921	376	275	270
Currency derivatives	21	21	-	-	17	2	14	-
Cash flow hedges	-	-	-	-	3	-	-	3
Financial assets at FVTPL	1,357	293	529	535	1,391	253	603	535
Financial assets at FVOCI	829	-	-	829	1,405	-	-	1,405
Total	2,669	536	599	1,534	3,738	631	892	2,213
Liabilities								
Commodity derivatives	(211)	(43)	(55)	(112)	(708)	(146)	(236)	(325)
Currency derivatives	(2,977)	(81)	(2,897)	-	(2,165)	(4)	(2,161)	-
Cash flow hedges	(38)	-	-	(38)	(66)	-	-	(66)
Total	(3,227)	(124)	(2,952)	(151)	(2,939)	(150)	(2,397)	(391)

The following is an overview in which changes in level 3 measurements are specified:

Amounts in NOK million	Commodity derivatives		Currency derivatives	Cash flow hedges	Financial instruments at FVTPL	Equity instruments at FVOCI
	Assets	Liabilities	Liabilities			
December 31, 2017	195	(473)	-	(45)	-	969
Total gains (losses)						
in Income statement	(119)	177	-	-	-	-
in Other comprehensive income	-	-	-	(141)	-	395
Purchases	195	(39)	-	-	-	-
Reclassified on transition to IFRS 9	-	-	-	-	535	-
Settlements	-	16	-	124	-	-
Currency translation difference	-	(5)	-	-	-	40
December 31, 2018	270	(325)	-	(62)	535	1,405
Total gains (losses)						
in Income statement	(104)	134	-	-	-	-
in Other comprehensive income	-	-	-	(108)	-	(664)
Purchases	-	-	-	-	-	97
Settlements	-	82	-	132	-	-
Currency translation difference	2	(3)	-	-	-	(8)
December 31, 2019	169	(111)	-	(38)	535	830
Total gains (losses) for the period	(104)	134	-	(108)	-	(664)
Total gains (losses) for the period included in the income statement for assets held at the end of the reporting period	(104)	134	-	-	-	-

Gains or losses relating to level 3 commodity derivatives appearing in the table above are included in the income statement in Raw material and energy expense. Changes in fair value for embedded derivatives are reported as gains or losses for the period. Changes in fair value for hedge instruments are reported in Other comprehensive income. Dividends received for equity instruments at fair value through other comprehensive income are included in Financial income.

Exposure to level 3 commodity derivatives is decreasing and the sensitivities relating to commodity derivatives are insignificant as of December 31, 2019.

Note 8.3 Derivative instruments and hedge accounting

Derivative instruments, whether physically or financially settled, are accounted for under IFRS 9. All derivative instruments are accounted for at fair value with changes in the fair value recognized in the income statement, unless the instrument is designated as a hedge instrument. Some of Hydro's commodity contracts are deemed to be derivatives under IFRS.

Embedded derivatives

Some contracts contain pricing links that affect cash flows in a manner different than the underlying commodity or financial instrument in the contract. For accounting purposes, these embedded derivatives are in some circumstances separated from the host contract and recognized at fair value. Hydro has separated and recognized at fair value embedded derivatives related to currency, aluminium, inflation and coal links from the underlying contracts.

Commodity derivatives

The following types of commodity derivatives were recorded at fair value on the balance sheet as of December 31, 2019 and December 31, 2018. Contracts that are designated as hedge instruments in cash flow hedges are not included. The presentation of fair values for electricity and aluminium contracts shown in the table below includes the fair value of traditional derivative instruments such as futures, forwards and swaps, physical contracts accounted for at fair value, as well as embedded derivatives.

Amounts in NOK million	2019	2018
Assets		
Electricity contracts	222	520
Aluminium futures, forwards and options	253	437
Other	51	95
Netting	(64)	(130)
Total	462	921
Liabilities		
Electricity contracts	(52)	(293)
Coal forwards	(140)	(302)
Aluminium futures, forwards and options	(82)	(243)
Netting	64	130
Total	(211)	(708)

Embedded derivatives are classified based on the underlying in the contract feature constituting a separable embedded derivative in the table above. Where there are more than one embedded derivative in the same host contract, those embedded derivatives are offset in settlement and thus presented net on the balance sheet.

Changes in the fair value of commodity derivatives are included in operating revenues or cost of goods sold based on classification of host contract for embedded derivatives and on the purpose of the instrument for freestanding derivatives.

Cash flow hedges

Hydro has to a limited extent used cash flow hedge accounting for its risk management positions. Gains and losses on the hedge derivatives are recognized in Other comprehensive income, and accumulated in the hedging reserve in equity and reclassified into operating revenues or cost when the corresponding forecasted sale or consumption is recognized. In 2012 Hydro entered into a hedge arrangement for parts of the power consumption in the Rheinwerk smelter in Germany. The price differential between the German and the Nordic power market was secured through derivative contracts for 150 MW for the period 2013 to 2020.

No ineffectiveness was recognized in the income statement in 2019 or 2018.

The table below gives aggregated numbers related to the cash flow hedges for the 2019 and 2018.

Amounts in NOK million	2020	2019	2018
Expected to be reclassified to the income statement during the year (NOK million)	(38)	(65)	(8)
Reclassified to the income statement from Other components of equity (NOK million) ¹⁾		(132)	(124)

1) Deviates from expected reclassifications due to change in market prices throughout the year. Negative amounts indicate a loss.

Liabilities of NOK 38 million and NOK 62 million were recognized as the fair value of cash flow hedging instruments for December 31, 2019 and 2018, respectively.

Hydro performs trading operations to reduce currency exposures on commodity positions. The effect of such operations is recognized as a part of Financial expense in the income statement.

For the after tax movement in Hydro's equity relating to cash-flow hedges for 2019 and 2018, please see note 7.6 Shareholders' equity.

Fair Value of Derivative Instruments

The fair value of derivative financial instruments such as currency forwards and swaps are based on quoted market prices. The fair market value of aluminium and electricity futures/forwards and option contracts is based on quoted market prices obtained from the London Metals Exchange and NASDAQ Nordic Power/EEX (European Energy Exchange) respectively. The fair value of other commodity over-the-counter contracts and swaps is based on quoted market prices, estimates obtained from brokers and other appropriate valuation techniques. Where long-term physical delivery commodity contracts are recognized at fair value in accordance with IFRS 9, such fair market values are based on quoted forward prices in the market, and assumptions of forward prices and margins where market prices are not available. Hydro takes credit-spread into consideration when valuating positions when necessary.

For further information on fair values, see note 1.2 Measurement of fair value. See note 8.2 Financial instruments for a specification of the classification of derivative positions according to a fair value hierarchy.

Section 9 – Related parties and remuneration

Note 9.1 Board of Directors' statement on executive management remuneration

Board of Directors' statement on executive management remuneration

The statement on the remuneration of the company's chief executive officer (CEO) and other members of the Corporate Management Board has been prepared in accordance with the provisions of the Norwegian Public Limited Companies Act, the Norwegian Accounting Act and the Norwegian Code of Practice for Corporate Governance.

Guidelines for executive management remuneration

Hydro's guidelines for the remuneration of the company's CEO and other members of the Corporate Management Board reflect Hydro's global human resources policy, whereby *"Hydro shall offer its employees an overall compensation package that is competitive and in line with generally accepted industry standards in the country in question. Where appropriate this package should, in addition to the base salary, comprise a performance-based incentive, which combined, should reflect individual performance."*

Process for determination of remuneration

The Board of Directors has appointed a separate compensation committee. The committee currently includes the board chair, deputy chair and one employee-elected board member. The CEO normally participates in the committee's meetings unless the committee is considering issues regarding the CEO. Other representatives of senior management may attend meetings if requested to do so.

The committee functions as an advisory body to the Board of Directors and the CEO, and is primarily responsible for:

- Making recommendations to the Board of Directors based on the committee's evaluation of the principles and systems underlying the remuneration of the CEO and other members of the Corporate Management Board.
- Making recommendations to the Board of Directors based on the committee's evaluation of the overall remuneration of the CEO, including the annual basis for bonus payments and bonus payments actually made.
- Assisting the CEO by consulting on the remuneration of the other members of the Corporate Management Board.
- Advising the Board of Directors and the CEO in remuneration matters which the committee finds to be of material or principal importance for Hydro.
- Overseeing the company's process for succession planning.

The following statement regarding the remuneration of members of the Corporate Management Board will be presented for an indicative vote to the annual general meeting to be held in May 2020.

Key principles for determination of remuneration in the coming financial year

The Board of Directors proposes that the principles set forth below shall apply for 2020 and up until the Annual General Meeting in 2021.

The remuneration of members of the Corporate Management Board shall reflect at all times the responsibility of the CEO and the other members of the Corporate Management Board for the management of Hydro, taking into account the complexity and breadth of the company's operations, as well as the growth and sustainability of the company. The total remuneration will be rooted in the company's objective of being competitive, but not a remuneration leader, within the relevant labor markets, while at the same time reflecting Hydro's international focus and presence.

Hydro attaches importance to transparency and to ensuring that remuneration arrangements are developed and implemented in accordance with principles for good corporate governance. The Board of Directors will continue to ensure moderation in executive management remuneration.

The total remuneration of the CEO and other members of the Corporate Management Board consists of a fixed compensation, variable compensation (short-term and long-term incentives), employee share plan, pension and insurance arrangements and, in certain cases, a severance agreement.

Fixed compensation

The fixed compensation provided to members of the Corporate Management Board includes a base salary and benefits in kind such as a car allowance, telephone, newspapers and other similar benefits. The company car plan was closed in 2019 and existing cars will not be replaced.

The base salaries of individual members of the Corporate Management Board are evaluated annually in light of the complexity and responsibility of the relevant employee's role and his or her contribution, qualifications and experience, together with general salary trends in applicable markets. In the annual evaluation of the basic salary for the members of the Corporate Management Board, consideration is also given to the results of the wage negotiations between the company and its Norwegian employee organizations. In addition, the company's administration, at the request of the Board's compensation

committee, carries out every two years a benchmarking of the remuneration of senior management in comparable Norwegian companies to ensure that the compensation offered by Hydro is market-adapted, but not market-leading.

Variable compensation

The Board's assessment is that target-based variable compensation helps to focus on elements that are important for promoting profitability and creating the basis for long-term value creation, both through the targets themselves and through a shared responsibility for achieving them.

The company has two plans for variable compensation for members of the Corporate Management Board: a short-term incentive (STI) and a share-based, long-term incentive (LTI). Both plans are evaluated and determined annually by the Board of Directors. Payments under both plans are dependent on Hydro achieving positive underlying earnings before interest and tax (Underlying EBIT) for the previous financial year. Payments are not taken into account when determining the basis for pensionable salary.

Short-term Incentive (STI)

The maximum potential payment under the plan is 50 percent of the annual base salary for the CEO and 40 percent of the annual base salary for other members of the Corporate Management Board.

The compensation is determined based on overall achievement of the following components, where (a) and (b) are established in the annual business planning process, and must be ambitious and balanced, and objective and measurable, and must reflect the varied nature of Hydro's operations.

(a) Return on capital employed (RoaCE), measured against the company's internal return target (weighted 35 percent). All members of the Corporate Management Board are fully measured on this goal.

(b) Strategic, operational, financial and organizational goals (weighted 40 percent combined).

At the corporate level, the following 10 targets have been set for 2020 for all members of the Corporate Management Board. The aim is to create a greater degree of collectivity and shared responsibility for the overall corporate targets. In addition, specific targets have been set for the executive vice presidents responsible for the business areas, pertaining to their respective business areas.

Name of goal	Description
Hydro's improvement program	Meet identified improvement targets accumulated for 2020
Net operating capital	Net operating capital days within the set upper limit
Robust 100	Meet identified potential for improvement in Rolled Products
Customer satisfaction	Customer satisfaction index above the set lower limit
Safety	Zero fatalities, and meet goal of completing HRI actions
Compliance	Hydro Monitor Integrity index above the set lower limit
Climate	Emissions of CO ₂ equivalents per tonne of aluminium equivalent produced within the identified upper limit
Greener products	Meet target for volume growth for external sales of CIRCAL
Corporate social responsibility	Meet the improvement target for Hydro's reputation in Pará (measured by external stakeholder surveys)
Employees	Hydro Monitor Employee Engagement Index above the set lower limit

The company has a goal that is expressed in the phrases "lifting profitability" and "driving sustainability." The first four goals in the table above are considered to support the profitability goal, while the remaining six are considered to support the sustainability target.

(c) Contribution to the company's development, compliance and promotion of Hydro's core values (The Hydro Way), achievement of individual goals, as well as a comprehensive, discretionary assessment based on individual and group-oriented attitude and behavior throughout the year (weighted 25 percent combined).

Long-term incentive (LTI)

The maximum potential payment under the LTI plan is 30 percent of annual base salary (the same for the CEO and other members of the Corporate Management Board). Payment is determined on the basis of overall achievement of the following elements:

(a) Average of the past three years' return on capital employed (RoACE), measured against the company's internal return target. This goal also supports the company's emphasis on profitability, though with a more long-term perspective than the RoACE goal in the STI plan.

(b) The company's total shareholder return (TSR) measured against a weighted average of TSR for comparable companies. TSR is an alternative way of expressing profitability and here in combination with market positioning.

Recipients of LTI payments are required to invest the net payment amount (after tax) in Hydro shares with a lock-in period of three years. This approach helps create a long-term commonality of interest between the company's management and owners. Any holder of such shares who voluntarily terminates his or her employment during such a three-year period must pay to the company an amount equal to the after-tax value of the relevant shares at or around the last day of employment.

The company does not offer options or other similar arrangements.

Other share-based compensation

The CEO and other members of the Corporate Management Board appointed on Norwegian employment terms are eligible to participate in Hydro's discounted employee share purchase plan on the same terms as all other eligible employees (as described in note 9.3 Employee remuneration).

Pensions

Company pension plans

Hydro has two pension plans in Norway: defined benefit (closed to new members in 2010) and defined contribution. As of January 1, 2020, 608 employees in Norway, including the CEO and one member of the Corporate Management Board, are members of the defined benefit plan. Other employees in Norway, including eight members of the Corporate Management Board, are members of the defined contribution plan.

The defined contribution plan stipulates a contribution to the plan of amounts equal to 6 percent of salary between 0 and 7.1G (G = the Norwegian National Insurance basic amount) and 20 percent of salary between 7.1G and 12G. The defined benefit plan implies a pension right of approximately 65 percent of pensionable salary subject to the full service period (minimum 30 years). A compensation plan has been established for employees who have been transferred from the defined benefit plan to the defined contribution plan and for whom a deficit in pension capital resulting from the transfer has been estimated.

With effect from January 1, 2020, the contribution rates in the defined contribution pension plan for Hydro Extruded Solutions AS (formerly Sapa AS) are coordinated with Hydro's contribution rates.

12G plan

Hydro closed the 12G plan funded through operations for earning pension on the portion of any salary exceeding 12G effective December 31, 2016. Employees with a salary above 12G on that date, including the CEO and four other members of the Corporate Management Board, remain in the plan.

For employees with a defined contribution plan, the 12G plan stipulates that an amount equivalent to 20 percent of the portion of salary exceeding 12G is allocated as a vested (pension) right. For employees with a defined benefit plan, the 12G plan stipulates that the portion of salary exceeding 12G is included in the final salary that forms the basis for calculating pension. New employees after December 31, 2016, including new members of the Corporate Management Board (recruited internally or externally), have not been included in the 12G plan. As of January 1, 2020, there are five members of the Corporate Management Board who do not earn pension on the portion of salary exceeding 12G, and an agreement has been entered into with each of them regarding payment of an annual cash amount in compensation for the loss of such earnings.

With effect from January 1, 2020, Hydro Extruded Solutions AS coordinated its pension plan for the portion of salary over 12G funded through operations, with Hydro's corresponding plan, and also closed its 12G plan for new members on the same date.

Early retirement plans

The company's early retirement plans are closed to new members. Employees who were included in the plans at the time of closing, including members of the Corporate Management Board, are still covered by the plans (see below).

The CEO and one member of the Corporate Management Board have the right to retire at the age of 62, although the CEO's right is limited to medical reasons. From the age of 62, defined pension benefits consist of 60 percent of pensionable salary. From the age of 65, the entitlement is 65 percent of pensionable salary up until the age of 67. Five other members of the Corporate Management Board have the same right to retire at the age of 65. The Board may request the CEO to retire at the age of 65.

The pensionable salary for the CEO and two members of the Corporate Management Board (Moss and Kallevik) is limited (with annual adjustment on January 1 corresponding to the adjustment of the National Insurance basic amount).

Age limit

The upper age limit for employment with Hydro in Norway is 70 years.

Insurance

The CEO and other members of the Corporate Management Board are covered by insurance arrangements applicable to Hydro employees with the rank of vice president or higher.

Termination agreement

Severance pay

Should Hydro terminate its employment relationship with the CEO or other members of the Corporate Management Board (with one exception), they have a right to six months of severance pay. One member of the Corporate Management Board has a right to severance pay for 12 months.

None of the Corporate Management Board's employment contracts give the right to severance pay if the employee has initiated the termination of employment.

Loss of severance pay

For all members of the Corporate Management Board, severance pay is forfeited in the event of gross breach of duty and/or other material breaches.

Reduction of severance pay

The CEO and seven members of the Corporate Management Board will have their severance pay reduced in whole or in part by other income, while two members of the Corporate Management Board have contracts which state that other income will not reduce their severance pay.

Notice period

All members of the Corporate Management Board have a six-month notice period.

General

The company has no specific guidelines for severance packages, but when recruiting to corporate management in recent times, it has followed a practice whereby the total of salary during the notice period and severance pay shall not exceed 12 months' salary.

Members of the Corporate Management Board outside Norway

For members of the Corporate Management Board outside Norway, base salary and other employment conditions are determined in accordance with Hydro's global human resources policy and local industry standards, and will generally follow the remuneration principles applicable to the other members of the Corporate Management Board.

Currently, all members of the Corporate Management Board have Norwegian employment contracts that follow the principles stated above. The executive vice president of the Bauxite & Alumina business area in Brazil also has a "retention bonus" attached to the position.

Executive remuneration policy in 2019

The remuneration policy has been implemented in accordance with the guidelines adopted in 2019, with the following additions and remarks:

The Corporate Management Board underwent extensive changes in the previous financial year:

- Chief Executive Officer: Hilde M. Aasheim succeeded Svein Richard Brandtzæg
- Chief Financial Officer: Pål Kildemo succeeded Eivind Kallevik
- Executive vice president Primary Metal: Eivind Kallevik succeeded Hilde M. Aasheim
- Executive vice president Rolled Products: Einar Glomnes succeeded Kjetil Ebbesberg
- Executive vice president People & HSE Hilde V. Nordh succeeded Katarina Nilsson
- New staff area: Corporate Development (until a new executive vice president is hired, Arvid Moss will serve in this role in addition to his duties as executive vice president Energy, and will receive special compensation for this additional responsibility).

Pål Kildemo, Einar Glomnes and Hilde V. Nordh all held previous positions in the group.

When Hilde M. Aasheim was hired as the new CEO and Eivind Kallevik as the new executive vice president for Primary Metal, they both retained the right to earn pension on the portion of the pensionable salary exceeding 12G. However, the basis for their pensionable income has been limited to the basis that applied on May 8, 2019 (based on previous salary). Aasheim and Kallevik have been executive vice presidents with agreements to earn pension on the full salary that were signed prior to the current "Guidelines on remuneration of executive management in entities in which the state has an ownership interest" entering into force. Removal of the plan for earning pension on the portion of a salary exceeding 12G through issuance of a paid-up policy in the defined benefit plan for Aasheim and a pension capital certificate in the defined contribution plan for Kallevik would in practice have made recruitment impossible and hindered the desired internal mobility.

Compensation for other members of the Corporate Management Board for the financial year 2019, including the new executive vice presidents, is in line with the guidelines adopted for 2019.

When the new CEO was hired with effect from May 8, 2019, the basic salary was set at NOK 6 710 000, the same as the previous CEO's basic salary. The salaries of the other members of the Corporate Management Board increased on average 2.15 percent from 2018 to 2019.

Bonus and LTI payments to the Corporate Management Board for 2018 were determined and paid in 2019. The annual bonuses for 2019 were determined and paid in March 2020. Annual bonuses and LTI payments are determined according to the principles stated above. See also Note 9.2 – Management remuneration.

Note 9.2 Management remuneration

Corporate management board members' salaries and other benefits, number of LTI-shares allocated, as well as Hydro share ownership as of December 31, 2019 and 2018 are presented in the table below. Amounts presented for individuals appointed to, or stepping down from, a position in the Corporate Management Board from or to another position in Hydro, includes fixed compensation for the whole year. Unless otherwise stated, Hydro did not have any loans to or guarantees made on behalf of any of the corporate management board members in 2019 and 2018.

Name	Base salary ^(1), 2)	Maximum bonus potential ^(1), 2)	Salary paid ^(1), 3)	Other benefits paid ^(1), 3)	Compensation pension paid ^(1), 3)	Bonus earned ^(1), 3)	Long-term incentive (LTI) earned ^(1), 3)	Pension benefits ^(1), 4)	LTI-shares allocated ⁽³⁾	Hydro share ownership ⁽⁵⁾
2019										
Hilde Merete Aasheim ⁶⁾	6,710	2,664	5,699	224	-	1,589	407	(6,869)	4,711	94,161
Svein Richard Brandtzæg ⁷⁾	6,710	1,188	6,838	261	-	562	-	581	9,198	253,323
Pål Kildemo ⁸⁾	2,900	435	2,319	219	150	280	79	245	-	2,202
John Thuestad ⁹⁾	6,384	2,115	7,738	1,220	511	1,351	370	395	4,398	25,202
Eivind Kallevik	3,685	1,449	3,816	275	50	801	264	1,708	4,811	62,644
Einar Glomnes ¹⁰⁾	4,047	908	3,828	481	343	553	155	1,567	-	4,456
Egil Hogna	5,533	2,213	5,689	286	1,112	1,361	404	609	7,430	50,742
Arvid Moss ¹¹⁾	3,267	1,307	3,457	253	-	772	238	3,268	4,384	158,308
Anne-Lene Midseim	2,614	1,046	2,668	273	112	548	191	1,095	3,506	29,862
Inger Sethov	2,397	959	2,458	273	149	502	175	1,057	3,214	27,538
Hilde Vestheim Nordh ¹²⁾	2,400	897	2,292	273	130	459	66	1,389	-	16,753
Kjetil Ebbesberg ¹³⁾	3,866	490	2,938	544	111	-	-	1,410	4,311	58,437
2018										
Svein Richard Brandtzæg	6,710	3,355	6,807	267	-	1,707	593	5,836	12,207	244,125
Eivind Kallevik ¹⁴⁾	3,506	1,402	4,369	270	48	729	310	888	6,494	57,472
John Thuestad ⁹⁾	6,087	1,166	7,025	542	298	793	251	374	-	20,443
Hilde Merete Aasheim	3,433	1,373	3,547	219	-	787	304	2,434	6,359	89,089
Kjetil Ebbesberg	3,991	1,561	4,112	636	150	733	322	940	5,826	54,126
Egil Hogna ¹⁵⁾	5,416	2,166	9,094	275	1,084	1,411	479	(58)	2,508	42,951
Arvid Moss	3,194	1,278	3,255	252	-	912	283	2,979	5,917	153,563
Anne-Lene Midseim ¹⁶⁾	2,554	1,022	2,615	563	110	531	226	759	4,731	26,395
Inger Sethov ¹⁶⁾	2,341	936	2,419	566	146	487	207	725	4,336	23,963
Katarina Nilsson ^{16) 17)}	2,680	1,072	3,291	769	236	591	237	135	1,242	1,685
Silvio Porto ¹⁸⁾	3,291	483	1,874	516	-	411	-	111	8,869	-

1) Amounts in NOK thousand. Amounts paid by subsidiaries outside Norway have been translated to NOK at average rates for each year.

2) Annual base salary per December 31, or per the date of stepping down from the Corporate Management Board. Maximum bonus potential is for the year presented, and for the period as corporate management board member.

3) Salary is the amount paid to the individual during the year presented, and includes vacation pay. Other benefits is the total of all other cash and non-cash related benefits received by the individual during the year presented and includes such items as the taxable portion of insurance premiums, car and mileage allowances and electronic communication items. For most individuals, compensation pension is the amount paid to compensate for future pension shortfall estimated at the time of transition from Hydro's defined benefit pension plans to the defined contribution plan in line with an arrangement applicable to all affected employees in Norway. For John Thuestad, Egil Hogna and Katarina Nilsson, compensation pension is the amount paid to compensate for lower pension benefits in Hydro compared to those of former employer Sapa AS (now Hydro Extruded Solutions AS). Bonus is the amount earned in the year presented, including vacation pay, based on performance achieved as corporate management board member. The LTI plan benefit reflects gross (pre-tax) amounts earned in the year presented, and results in LTI shares allocated in the following year. For corporate management board members on net salary employment contracts, benefits have been converted to estimated gross (pre-tax) amounts.

4) Pension benefits include the estimated change in the value of defined pension benefits, and reflects both the effect of earning an additional year's pension benefit and the adjustment to present value of previously earned pension rights (interest element). It is calculated as the increase in the Defined Benefit Obligations (DBO) calculated with stable assumptions. Pension benefits also include contributions to defined contribution plans.

5) Hydro share ownership is the number of shares held directly by the corporate management board member and any shares held by close family members and controlled entities. Hydro share ownership is as of December 31, or per the date of stepping down from the Corporate Management Board.

6) Effective May 8, 2019, Hilde Merete Aasheim superceded Svein Richard Brandtzæg as President and CEO. Amended terms for Aasheim's early retirement agreement in the age interval 62-65 have resulted in a net negative change in pension benefits for 2019.

7) Effective May 8, 2019, Svein Richard Brandtzæg resigned as President and CEO and stepped down from the Corporate Management Board. Brandtzæg retired at the end of 2019. In addition to the benefits included in the table above, Brandtzæg will receive vacation pay in 2020 amounting to NOK 862 thousand.

8) Pål Kildemo became member of the Corporate Management Board as of August 15, 2019. From May 8 until August 15, 2019, Kildemo was appointed interim EVP and Head of Primary Metal business area, for which he received an extra remuneration of NOK 323 thousand that is included in column Salary paid in the table above.

9) John Thuestad became member of the Corporate Management Board as of June 1, 2018. From this date, Thuestad has a retention agreement that vests progressively over a 60-month period. Thuestad earned an estimated NOK 1,354 thousand and NOK 739 thousand under this agreement in 2019 and 2018, respectively. Thuestad also had a retention agreement from 2017, as former member of Sapa's corporate management team, that vested after 6 months in April 2018. Thuestad earned NOK 873 thousand under this agreement in 2018. These amounts are included in column Salary paid in the table above.

10) Einar Glomnes became member of the Corporate Management Board as of May 8, 2019.

11) From November 1, 2019, Arvid Moss was appointed interim EVP and Head of Corporate Development, for which he received an extra remuneration of NOK 150 thousand that is included in column Salary paid in the table above. Moss remains in his position as EVP and Head of Energy business area.

- 12) Hilde Vestheim Nordh became member of the Corporate Management Board as of August 15, 2019. From January 8 until August 15, 2019, Nordh was appointed interim EVP and Head of People and HSE.
- 13) Kjetil Ebbesberg stepped down from the Corporate Management Board as of May 8, 2019, and left Hydro as of September 30, 2019. In addition to the benefits included in the table above, Ebbesberg received salary and other benefits during a 6 month notice period that started October 1, 2019, amounting to NOK 2,027 thousand. Ebbesberg has no work obligations or permissions in Hydro during this period. Further, from April 1, 2020, Ebbesberg will receive severance pay for a period of 6 months, estimated to NOK 1,731 thousand. In addition, Ebbesberg will receive vacation pay in 2020 amounting to NOK 139 thousand. Ebbesberg was not required to make any payments to Hydro for non-vested LTI shares at termination of employment.
- 14) From March 5 until June 1, 2018, Eivind Kallevik was appointed interim EVP and Head of Bauxite & Alumina business area, for which he received an extra remuneration of NOK 750 thousand that is included in column Salary paid in the table above. During this period, Kallevik remained in his position as CFO.
- 15) Egil Hogna became member of the Corporate Management Board as of October 2, 2017. From this date, and as former member of Sapa's corporate management team, Hogna had a retention agreement that vested after 12 months. Hogna earned NOK 3,940 thousand under this agreement in 2018. This amount is included in column Salary paid in the table above.
- 16) For work regarding the Alunorte situation in Brazil, Anne-Lene Midseim, Inger Sethov and Katarina Nilsson received an extra compensation of NOK 300 thousand, NOK 300 thousand and NOK 200 thousand, respectively. These amounts are included in column Other benefits paid in the table above.
- 17) Katarina Nilsson became member of the Corporate Management Board as of October 2, 2017. From this date, and as former member of Sapa's corporate management team, Nilsson had a retention agreement that vested after 6 months. Nilsson earned NOK 494 thousand under this agreement in 2018. This amount is included in column Salary paid in the table above. Katarina Nilsson stepped down from the Corporate Management Board as of January 7, 2019, and left Hydro as of August 31, 2019. Under the long-term incentive for 2018 settled in 2019, Nilsson received 3,679 shares. In addition to the benefits included in the table above, Nilsson received salary and other benefits during a 6 month notice period that started September 1, 2019, amounting to NOK 1,998 thousand. Nilsson had no work obligations or permissions in Hydro during this period. Further, from March 1, 2020, Nilsson will receive severance pay for a period of 6 months, estimated to NOK 795 thousand. Nilsson was not required to make any payments to Hydro for non-vested LTI shares at termination of employment.
- 18) Silvio Porto stepped down from the Corporate Management Board as of March 5, 2018, and left Hydro as of July 31, 2018. In addition to the benefits included in the table above, Porto received certain benefits at termination, including statutory benefits, amounting to NOK 1,649 thousand. Porto was not required to make any payments to Hydro for non-vested LTI shares at termination of employment. In addition to the performance related pay arrangement for all members of the Corporate Management Board, Porto had a cash-paid long-term incentive which was payable over three years with payments partly dependent on salary levels and business results in the following two years, included in bonus. The reported bonus amount is final.

Note 9.3 Employee remuneration

Accounting policies for employee remuneration

Share-based compensation

Hydro accounts for share-based compensation in accordance with IFRS 2 Share-based Payment. Share-based compensation expense is measured at fair value over the service period and includes social security taxes that will be paid by Hydro at the settlement date. All changes in fair value are recognized in the income statement.

Employee benefits

Payments to employees, such as wages, salaries, social security contributions, paid annual leave and bonus agreements are accrued in the period in which the associated services are rendered by the employee.

Employee share purchase plan

Hydro has established a share purchase plan for employees in Norway. The plan payout is based on whether the share price (adjusted for dividend paid) increases with at least 12 percent or not during the performance period. Employees are eligible to receive an offer to purchase shares under this plan if they were 1) employed by Norsk Hydro ASA or a more than 90 percent owned Norwegian subsidiary, and 2) employed as of December 31 through the final acceptance date of the share purchase offer. Employees are invited to purchase shares with a rebate of 50 percent for a value of NOK 12,500 or NOK 25,000, depending on shareholder return. The share purchase is financed through a non-interest bearing loan from the company with a repayment period of 12 months.

Compensation expense related to the 2018 performance measurement period was accrued and recognized over the service period of December 31, 2018 through May 31, 2019, the final acceptance date of the offer. In 2019 and 2018 the participation rates of eligible employees in the employee share purchase plan were 89 and 88 percent, respectively. Details related to the employee share purchase plan are provided in the table below.

Performance measurement period	2019	2018	2017
Total shareholder return performance target achieved	<12%	<12%	≥12%
Employee rebate offered, NOK	6,250	6,250	12,500
Share purchase plan compensation			
Award share price, NOK	30.92	51.54	
Number of shares issued, per employee	361	443	
Total number of shares issued to employees	1,296,351	1,543,412	
Compensation expense related to the award, NOK thousand	17,682	36,023	

Employee benefit expense

The average number of employees in Hydro for 2019 and 2018 was 36,487 and 35,731, respectively. As of year end 2019 and 2018, Hydro employed 36,310 and 36,236 people, respectively. Employees in joint operations are not included. The specification of employee benefit expenses, including employee benefits in joint operations, is given in the table below.

Amounts in NOK million	2019	2018
Salary	19,802	18,090
Social security costs	2,936	2,910
Other benefits	1,086	1,023
Pension expense (note 9.5)	1,047	1,153
Total	24,871	23,176

Note 9.4 Board of Directors and Corporate Assembly

Board of Directors' remuneration and share ownership

Total board fees and individual board member fees for 2019 and 2018, and outstanding loans and board member share ownership as of December 31, 2019 and 2018, are presented in the tables below.

Amounts in NOK thousand	2019	2018
Fees and other remuneration - normal board activities	4,423	3,521
Fees - audit committee	617	599
Fees - compensation committee	302	293
Total fees for board services provided to Hydro during the year	5,342	4,413

Board member / observer	Board fees ¹⁾		Outstanding loans ^{1) 2)}		Number of shares ³⁾	
	2019	2018	2019	2018	2019	2018
Dag Mejdell ⁴⁾	807	780	-	-	35,000	35,000
Irene Rummelhoff ⁵⁾	504	489	-	-	5,000	5,000
Finn Jebsen ⁶⁾	571	554	-	-	53,406	53,406
Thomas Schulz	477	351	-	-	-	-
Liselott Kilaas ⁷⁾	498	282	-	-	-	-
Marianne Wiinholt ⁸⁾	613	483	-	-	-	-
Peter Kukielski ⁹⁾	326	-	-	-	-	-
Roelof Ijsbrand Baan ¹⁰⁾	234	-	-	-	-	-
Arve Baade ^{11) 12)}	362	88	-	-	4,708	4,347
Sten Roar Martinsen ^{12) 13)}	453	439	-	-	6,447	6,086
Svein Kåre Sund ^{12) 14)}	498	384	-	5	6,012	5,651
Tor Egil Skulstad ^{12) 15)}	-	-	-	-	804	443
Liv Monica Stubholt ¹⁶⁾	-	201	-	-	-	-
Billy Fredagsvik ^{12) 17)}	-	362	-	21	-	5,030
Total	5,342	4,413	-	26	111,377	114,963

1) Amounts in NOK thousand.

2) Loans are extended to board members who are also Hydro employees under an employee benefit scheme available to all employees in Norway. Loans as of December 31, 2019 and 2018 for board members as of December 31, 2019 and 2018; otherwise loans are as of the date the individual stepped down from the Board of Directors. At the end of 2018, the loan to Svein Kåre Sund had an interest of 5.9 percent, and was repaid in January 2019. As of the date of stepping down from the Board of Directors, the loan to Billy Fredagsvik had an interest rate of 5.9 percent, and the loan was repaid by the end of 2018. All payments have been made in a timely fashion and in accordance with the agreed payment schedule. Loans have not been extended to close members of family and controlled entities.

3) Number of shares owned as of December 31, 2019 and 2018 for board members as of December 31, 2019 and 2018; otherwise it is the number of shares owned as of the date the individual stepped down from the Board of Directors. Shareholdings disclosed include shares held by close members of family and controlled entities, in addition to shares held directly by the board member.

4) Chairperson of the board and chairperson of the board compensation committee.

5) Deputy chairperson of the board and member of the board compensation committee.

6) Chairperson of the board audit committee.

7) Member of the board as of May 23, 2018. Member of the board audit committee as of June 12, 2018.

8) Member of the board audit committee.

9) Member of the board as of May 29, 2019.

10) Member of the board as of May 29, 2019 until February 5, 2020.

11) Member of the board as of October 1, 2018.

12) Employee representative on the board elected by the employees in accordance with Norwegian Company Laws. As such, these individuals are also paid regular salary, remuneration in kind and pension benefits that are not included in the table above.

13) Member of the board compensation committee.

14) Member of the board audit committee as of October 23, 2018.

15) Observer on the board.

16) Member of the board and the board audit committee until May 23, 2018.

17) Member of the board and the board audit committee until September 30, 2018.

The remuneration to the Board of Directors consists of the payment of fees and travel compensation. Travel compensation is paid to members living outside Norway (2018: Scandinavia) who attend meetings in person, with an amount of NOK 23,000 (2018: NOK 10,300) per meeting. Board members do not have any incentive or share-based compensation. Hydro has not made any guarantees on behalf of any of the board members. The only board members with loans from Hydro are the employee-elected members of the board.

Fees are based on the position of the board members and board committee assignments. Annual fees for 2019 for the chairperson of the board, deputy chairperson and directors are NOK 686,000 (2018: NOK 663,000), NOK 413,000 (2018: NOK 401,000) and NOK 362,000 (2018: NOK 351,000), respectively. The chairperson of the audit committee and the chairperson of the compensation committee receive an additional NOK 209,000 (2018: NOK 203,000) and NOK 120,500 (2018: NOK 117,000) annually in fees, respectively, and audit and compensation committee members receive NOK 136,000 (2018: NOK 132,000) and NOK 90,500 (2018: NOK 88,000) annually, respectively, for their participation on these committees. No fees are paid to the board observer.

Corporate Assembly

Corporate Assembly members owned 41,423 shares as of December 31, 2019. Loans to employees who are members of the Corporate Assembly were extended under an employee benefit scheme that is available to all employees in Norway. Loans outstanding to Corporate Assembly members who are also Hydro employees totaled NOK 383 thousand as of December 31, 2019. The interest rates on these loans are 2.50 percent and 5.90 percent, with a repayment period between two and 12 years.

Note 9.5 Employee retirement plans

Accounting policies for post-employment benefits

Post-employment benefits are recognized in accordance with IAS 19 Employee Benefits. The cost of providing pension benefits under a defined benefit plan is determined separately for each plan using the projected unit credit method. Past service costs are recognized immediately in the income statement. The interest component of the periodic cost is included in Finance expense. Remeasurement gains and losses are recognized in Other comprehensive income.

Contributions to defined contribution plans are recognized in the income statement in the period in which they accrue. Multiemployer defined benefit plans where available information is insufficient to use defined benefit accounting are accounted for as if the plan were a defined contribution plan.

Significant judgement in accounting for post-employment benefits

Measurement of pension expense and obligations under defined benefit plans requires numerous assumptions and estimates that can have a significant impact on the recognized pension cost and obligation, such as discount rates, turnover rate and mortality, as well as future pension increases and salary levels.

Employee retirement plans in Hydro

Hydro provides post-employment benefits covering a substantial portion of employees. Plans and benefit levels vary between companies and countries. In recent years, there has been a shift from traditional final salary defined benefit plans to defined contribution and contribution-oriented plans. Many defined benefit plans have been closed for new entrants, and in some defined benefit plans, large groups of employees have converted to defined contribution arrangements. Still, a number of employees continues to earn benefits under defined benefit plans, but many of these plans are heavily impacted by deferred members and pensioners.

Pension expense

Amounts in NOK million	2019				2018			
	Norway	Germany	Other	Total	Norway	Germany	Other	Total
Defined benefit plans	129	198	(11)	317	133	194	87	414
Defined contribution plans	196	-	278	474	175	-	292	467
Multiemployer plans	53	-	2	55	55	-	2	57
Termination benefits and other	62	(1)	56	117	63	11	62	136
Social security cost	63	-	21	84	53	-	26	78
Pension expense	503	197	347	1,047	478	205	470	1,153
Interest expense (income)	3	164	12	180	(20)	146	12	138
Remeasurement (gain) loss in other comprehensive income	(1,340)	1,234	233	128	1,065	(76)	(63)	925

Recognized defined benefit asset and liability

Amounts in NOK million	2019				2018			
	Norway	Germany	Other	Total	Norway	Germany	Other	Total
Defined benefit obligation major plans	(12,689)	(10,401)	(5,176)	(28,265)	(12,904)	(9,240)	(5,165)	(27,310)
Plan assets	14,161	-	4,904	19,066	12,899	-	4,950	17,849
Reimbursement rights	301	-	-	301	310	-	-	310
Liability other plans	(54)	(131)	(661)	(845)	(29)	(134)	(528)	(691)
Social security cost	(602)	-	(77)	(679)	(598)	-	(45)	(644)
Net defined benefit asset (liability)	1,118	(10,531)	(1,009)	(10,423)	(322)	(9,375)	(789)	(10,486)
Recognized prepaid pension	5,997	45	635	6,676	4,523	45	594	5,162
Recognized pension liability	(4,879)	(10,576)	(1,644)	(17,099)	(4,845)	(9,420)	(1,383)	(15,648)
Net amount recognized	1,118	(10,531)	(1,009)	(10,423)	(322)	(9,375)	(789)	(10,486)

Other plans include some minor plans in various entities and countries. These plans may be funded or unfunded. None of these plans are considered material, neither individually nor combined.

Change in defined benefit obligation (DBO)

Amounts in NOK million	2019				2018			
	Norway	Germany	Other	Total	Norway	Germany	Other	Total
Opening Balance	(12,904)	(9,240)	(5,165)	(27,310)	(12,247)	(9,173)	(5,512)	(26,932)
Current service cost	(124)	(199)	(28)	(351)	(128)	(194)	(29)	(351)
Past service cost and curtailment gain (loss)	-	-	-	-	-	-	(42)	(42)
Interest expense	(315)	(162)	(144)	(621)	(287)	(145)	(144)	(575)
Actuarial gain (loss) demographic assumptions	-	-	4	4	-	(73)	57	(17)
Actuarial gain (loss) economic assumptions	99	(1,257)	(682)	(1,840)	(588)	249	280	(59)
Experience gain (loss)	(16)	39	(41)	(19)	(200)	(93)	13	(280)
Benefit payments	609	285	252	1,146	590	281	219	1,090
Termination benefits	(36)	-	-	(36)	(44)	-	-	(44)
Settlements	-	-	789	789	-	-	36	36
Foreign currency translation	-	134	(161)	(27)	-	(92)	(43)	(135)
Closing Balance	(12,689)	(10,401)	(5,176)	(28,265)	(12,904)	(9,240)	(5,165)	(27,310)

Change in pension plan assets

Amounts in NOK million	2019				2018			
	Norway	Germany	Other	Total	Norway	Germany	Other	Total
Opening Balance	12,899	-	4,950	17,849	13,189	-	5,343	18,532
Interest income	319	-	149	468	313	-	147	460
Return on plan assets above (below) interest income	1,244	-	552	1,796	(265)	-	(352)	(617)
Company contributions	135	-	7	142	93	-	9	102
Benefit payments	(435)	-	(228)	(663)	(432)	-	(201)	(632)
Settlements	-	-	(727)	(727)	-	-	(40)	(40)
Foreign currency translation	-	-	201	201	-	-	43	43
Closing Balance	14,161	-	4,904	19,066	12,899	-	4,950	17,849

Analysis of the defined benefit obligation (DBO)

Amounts in NOK million	2019				2018			
	Norway	Germany	Other	Total	Norway	Germany	Other	Total
Active members	(3,250)	(5,389)	(697)	(9,336)	(3,487)	(4,643)	(613)	(8,744)
Deferred members	(814)	(870)	(2,195)	(3,879)	(794)	(722)	(1,889)	(3,405)
Pensioners	(8,625)	(4,142)	(2,283)	(15,051)	(8,623)	(3,874)	(2,664)	(15,161)
Defined benefit obligation	(12,689)	(10,401)	(5,176)	(28,265)	(12,904)	(9,240)	(5,165)	(27,310)
Weighted average duration (years)	12.6	19.5			13.0	18.4		

Contributions to pension plans, benefit payments from unfunded pension plans, and social security tax imposed on such contributions and payments amounted to a cash outflow of about NOK 1,250 million for 2019 and about NOK 1,200 million for 2018. Hydro's cash impact is expected to be at the same level in the coming year.

Hydro's main pension plans are offered in Norway and Germany. The plans are described below:

Norway

Hydro has closed the main defined benefit plans for new members, and the majority of employees are now covered by defined contribution plans. The defined benefit plans are both funded and unfunded. The main funded plan is managed by Norsk Hydros Pensjonskasse, a separate, regulated legal entity. Hydro's pension plans complement the public pension schemes in Norway.

Hydro participates in a tariff-based pension plan that entitles the majority of its Norwegian employees life-long supplementary benefits. The benefits are financed through a pooled arrangement by private sector employers (avtalefestet pensjon, AFP) where also the Norwegian state contributes. The plan is a defined benefit plan with limited funding and where plan assets are not segregated. The information required to calculate the share of the plan and account for the plan as a defined benefit plan is not available from the plan administrator. Hydro therefore accounts for the plan as if it were a defined contribution plan. The annual contributions have increased since inception and are expected to increase further. The employer contributions are included in Multiemployer plans.

Significant actuarial assumptions for the main Norwegian defined benefit plans include:

Assumptions	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
	2019	2019	2018	2018
Discount rate	2.3%	2.5%	2.5%	2.4%
Expected salary increase	2.0%	2.5%	2.5%	2.25%
Expected pension increase	1.25%	1.5%	1.5%	1.0%
Mortality basis	K2013	K2013	K2013	K2013

The discount rate is based on the yield on covered bonds (debt securities backed by cash flows from mortgages) issued in Norway. The market for covered bonds has developed in size and liquidity, and we deem this market to be sufficiently deep to serve as reference for the discount rate for our post-employment benefit plans in Norway.

The sensitivities shown in the table below have been calculated for the main Norwegian plans illustrating the effects of changing one assumption while keeping the other assumptions unchanged. Possible correlation between assumptions is not reflected in the calculations.

Sensitivities decrease (increase) benefit obligation year end

Amounts in NOK million, except percent

Discount rate increase 0.5% point			6.0%	760
Salary increase 0.5% point			(0.9%)	(111)
Pension increase 0.5% point			(5.8%)	(739)
One year longer life all members			(4.5%)	(569)

The plan assets in the funded plans provided through Norsk Hydros Pensjonskasse were invested as follows at the end of 2019 and 2018:

Amounts in NOK million, except percent	2019	2019	2018	2018
Cash and cash equivalents	4.7%	654	2.6%	329
Equity instruments Norway	21.9%	3,052	20.5%	2,589
Equity instruments other countries	20.6%	2,865	18.9%	2,395
Debt instruments	29.3%	4,073	33.4%	4,220
Investment funds	6.1%	844	5.6%	705
Real estate	17.5%	2,432	19.0%	2,405
Total	100.0%	13,920	100.0%	12,644

Real estate consists of office buildings in the Oslo area. A share of the buildings are leased and occupied by Hydro. Investment funds are primarily private equity funds investing in unlisted companies across various industries in Europe, the US and Asia, and infrastructure funds investing in the UK, continental Europe and the US. Equity instruments are held through liquid funds

invested in listed companies in Norway and globally. Debt instruments are mainly bond issues with maturities up to 10 years and investment grade rating.

Germany

In Germany, the majority of plan members are covered by defined benefit plans that offer benefits based on final salary level and the number of years in service. The main plans are unfunded. Hydro's main plans are closed for new entrants, and all new employees are now offered benefits under new defined contribution-oriented plans. These plans are unfunded and treated as defined benefit plans for financial reporting purposes.

Significant actuarial assumptions for the main German plans include:

Weighted-average assumptions	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
	2019	2019	2018	2018
Discount rate	1.1%	1.8%	1.8%	1.6%
Expected salary increase	2.4%	2.4%	2.4%	2.4%
Expected pension increase	1.5%	1.5%	1.5%	1.5%
Mortality basis	RT 2018 G	RT 2018 G	RT 2018 G	RT 2005 G

The sensitivities shown in the table below have been calculated for the main German plans illustrating the effects of changing one assumption while keeping the other assumptions unchanged. Possible correlation between assumptions is not reflected in the calculations.

Sensitivities decrease (increase) benefit obligation year end

Amounts in NOK million, except percent

Discount rate increase 0.5% point	8.9%	929
Salary increase 0.5% point	(2.3%)	(238)
Pension increase 0.5% point	(7.0%)	(732)
One year longer life all members	(5.5%)	(577)

Other

Other includes Hydro's post-employment benefits outside Norway and Germany. Most employees affected are covered by defined contribution plans. Defined benefit plans relate largely to the UK and the US, where the majority of the benefit obligation is financed and administered through independent pension trusts. Pension expense for 2019 includes a gain of NOK 62 million resulting from settlements of certain benefit obligations in the US. These settlements reduced defined benefit obligations and plan assets with NOK 789 million and NOK 727 million, respectively. Pension expense for 2018 includes a past service cost of NOK 40 million related to a judgment by the High Court of England and Wales requiring all employers who offered guaranteed minimum pensions in the period 1990 to 1997 to perform gender equalization, increasing the estimated liability for such benefits.

Note 9.6 Other related party information

As of December 31, 2019, The Norwegian state had ownership interests of 34.6 percent of total shares outstanding (2018:34.6 percent) in Hydro through the Ministry of Trade, Industry and Fisheries. In addition, Folketrygdfondet, which manages the Government Pension Fund – Norway¹² held 5.4 percent (2018: 6.8 percent). There are no preferential voting rights associated with the shares held by the Norwegian State. Hydro has concluded that the Norwegian state's shareholding represents a significant interest in Hydro, and that the State thus is a related party.

The Norwegian state has ownership interests in a substantial number of companies. The ownership interests in 73 companies are managed by the ministries and covered by public information from the Ministry of Trade, Industry and Fisheries¹³. We have not assessed which of these companies that are controlled by the State. Hydro has business transactions with a number of these companies, including purchase of power from Statkraft SF and bank services from DNB ASA. Generally, transactions are agreed independently of the possible control exercised by the State.

The public enterprise Enova, which supports new energy and climate-related technology development in Norway, decided in June 2014 to contribute up to NOK 1.56 billion to Hydro's pilot project for new electrolysis technology at Karmøy, Norway. The contribution was approved by the European Free Trade Association, EFTA, in February 2015 with the first payment in

¹² Shareholding is based on information from the Norwegian Central Securities Depository (VPS) as of December 31, 2019 and 2018. Due to lending of shares, an investor's holdings registered in its VPS account may vary.

¹³ According to information on the Government web site www.regjeringen.no, state ownership.

July 2015. The grant has been paid over the preparation, building and commissioning period ending in 2018. A total of NOK 1.56 million was received, representing the full grant.

A significant share of Hydro's defined benefit post-employment plans is managed by the independent pension trust, Norsk Hydro Pensjonskasse. Employees managing and operating the pension trust are employees of Norsk Hydro ASA. Their salaries and other benefits are reimbursed by the pension trust on a monthly basis, in total NOK 9 million for 2019 and NOK 8 million for 2018. Further, the pension trust is located in Hydro's head office. Office costs, including heating and administrative services and other administrative services, are charged with a total of NOK 1 million for 2019 and NOK 6 million for 2018.

The pension trust owns some of the office buildings rented by Hydro. The current rental arrangement was entered into in 2015 representing a partial continuation of a rental agreement from 2006, and priced based on market price benchmarks at the time of the agreement in 2006. Hydro has paid a rental of NOK 71 million and NOK 68 million for 2019 and 2018, respectively. The initial term of the rental contract expires in February 2022 after exercise of a one-year extension option. The contract includes an extension option for an additional five-year period. In addition, compensation related to cancellation of a previous contract was paid with NOK 86 million and NOK 82 million for 2019 and 2018, respectively. The compensation arrangement expires in 2021. The remaining provision for the compensation arrangement as of December 31, 2019 was NOK 112 million. As of the end of 2019, Hydro's outstanding balance towards Norsk Hydros Pensjonskasse was NOK 22 million, all settled when due during January 2020.

The members of Hydro's board of directors during 2019 and 2018 are stated in note 9.4 Board of Directors and Corporate Assembly, where their remuneration and share ownership is outlined. Some of the board members or their close members of family serve as board members or executive directors in other companies. In addition, some members of Hydro's corporate management board or their close members of family serve as board members in other companies. Hydro has transactions with some of those companies; however, have not identified any transactions where the relationship is known to have influenced the transaction. Liv Monica Stubholt, a Board member until May 2018, is partner in the Norwegian law firm Advokatfirmaet Selmer DA. Selmer has had assignments for Hydro resulting in fees of NOK 0.5 million in the period January to May, 2018. Stubholt has not been involved in these services to Hydro. Some close family members of members of Hydro's management are employed in non-executive positions in Hydro.

Hydro's significant joint arrangements and transactions with those entities are described in note 3.1 Investments in joint arrangements and associates. Hydro's relationship with partners in joint arrangements are generally limited to a combined effort within a limited area. Hydro considers the joint venture partners as competitors in other business transactions, and do not see these relationships as related party relationships.

Transactions with related parties are at arm's length principles.

Section 10 – Other information

Note 10.1 Income taxes

Accounting policies for income taxes, current and deferred

Taxes payable is based on taxable profit for the year, which excludes items of income or expense that are taxable or deductible in other years. Taxable profit also excludes items that are never taxable or deductible. Hydro's liability for current tax is calculated using tax rates that have been enacted or substantively enacted as of the balance sheet date.

Deferred income tax expense is calculated using the liability method in accordance with IAS 12 Income Taxes. Deferred tax assets and liabilities are classified as non-current in the balance sheet and are measured based on the difference between the carrying value of assets and liabilities for financial reporting and their tax basis when such differences are considered temporary in nature. For items recognized as an asset and a liability at inception, such as an asset retirement obligation or a lease, temporary differences related to the asset and liability are considered in combination, and deferred tax assets and liabilities are recognized on changes to the temporary differences through the life of the items. Temporary differences related to intercompany profits are deferred using the buyer's tax rate. Deferred tax assets are reviewed for recoverability every balance sheet date, and the amount probable of recovery is recognized.

Deferred income tax expense represents the change in deferred tax asset and liability balances during the year, except for the deferred tax related to items recognized in Other comprehensive income or resulting from a business combination or disposal. Changes resulting from amendments and revisions in tax laws and tax rates are recognized when the new tax laws or rates become effective or are substantively enacted. Uncertain tax positions are recognized in the financial statements based on management's expectations.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities, when they relate to income taxes levied by the same taxation authority, and when the Group intends to settle its current tax assets and liabilities on a net basis.

Deferred taxes are not provided on undistributed earnings of subsidiaries when the timing of the reversal of this temporary difference is controlled by Hydro and is not expected to happen in the foreseeable future. This is applicable for the majority of Hydro's subsidiaries.

Significant judgment in accounting for income taxes

Hydro is involved in a significant number of tax cases related to various types of taxes. Hydro's widespread business operations expose us to several tax regimes and their interaction. We see that tax authorities challenge transfer prices to an increasing degree. Although Hydro currently has no significant transfer price disputes with tax authorities, the long value chain with a large number of internal transactions and business operations covering multiple tax jurisdictions expose us to such disputes, both related to prior and future transactions.

Valuation of deferred tax assets is dependent on management's assessment of future recoverability of the deferred benefit. Expected recoverability may result from expected taxable income in the future, planned transactions or planned tax optimizing measures, all of which may be uncertain. Economic conditions may change and lead to a different conclusion regarding recoverability. Tax authorities in different jurisdictions may challenge Hydro's calculation of taxes payable from prior periods. Such processes may lead to changes to prior periods' taxable income, resulting in changes to income tax expense in the period of change, as well as interest and fines.

Amounts in NOK million	2019	2018
<i>Income (loss) before tax</i>		
Norway	(1,471)	4,327
Other countries	(85)	2,135
Total	(1,556)	6,462
<i>Current taxes</i>		
Norway	665	1,770
Other countries	848	954
Current income tax expense	1,512	2,724
<i>Deferred taxes</i>		
Norway	(57)	272
Other countries	(642)	(857)
Deferred tax expense (benefit)	(699)	(585)
Total income tax expense (benefit)	813	2,139

Components of deferred taxes

Amounts in NOK million	2019	2018
Origination and reversal of temporary differences	(770)	(409)
Change in deferred tax asset from tax loss carryforwards	(430)	115
Effect of tax rate changes	(41)	(11)
Net change in unrecognized deferred tax assets	863	(492)
Tax (expense) benefit allocated to Other comprehensive income	(320)	211
Deferred tax expense (benefit)	(699)	(585)

Reconciliation of tax expense to Norwegian nominal statutory tax rate

Amounts in NOK million	2019	2018
Expected income taxes at statutory tax rate ¹⁾	(342)	1,486
Hydro-electric power surtax ²⁾	749	943
Equity accounted investments	(57)	(170)
Foreign tax rate differences	(91)	(417)
Tax free income	(33)	(44)
Deferred tax asset not recognized and expired tax loss carryforwards ³⁾	409	2
Withholding tax and capital taxes	45	108
Other tax benefits and deductions with no tax benefits, net ⁴⁾	134	231
Income tax expense (benefit)	813	2,139

1) Norwegian nominal statutory tax rate is 22 percent. In 2018 it was 23 percent.

2) A surtax of 37 percent is applied to taxable income, with certain adjustments, for Norwegian hydro-electric power plants. The surtax comes in addition to the normal corporate taxation. In 2018 the surtax rate was 35.7 percent.

3) Deferred tax asset not recognized and expired tax loss carryforwards in 2019, includes write off of deferred tax asset in Germany amounting to NOK 239 million.

4) A substantial part of the provision related to the Alunorte agreements with the Government of Pará and Ministério Público Federal made on September 5, 2018 (the TAC and TC agreements), is considered not deductible for tax purposes. The tax effect is included in the line Other tax benefits and deductions with no tax benefits, net.

Tax effects of temporary differences and tax loss carryforwards giving rise to deferred tax assets and liabilities

	Assets	Liabilities	Assets	Liabilities
	2019	2019	2018	2018
Amounts in NOK million			Restated	Restated
Inventory valuation	411	(441)	442	(639)
Accrued expenses	1,761	(344)	1,549	(311)
Property, plant and equipment	10,174	(16,369)	10,076	(16,843)
Intangible assets	1,550	(2,319)	1,549	(2,314)
Pensions	3,233	(1,412)	2,761	(1,088)
Derivatives	707	(106)	639	(209)
Other	955	(1,115)	1,324	(980)
Tax loss carryforwards	5,502		5,230	
Subtotal	24,291	(22,105)	23,570	(22,384)
Of which not recognized as tax asset	(3,320)		(2,553)	
Gross deferred tax assets (liabilities)	20,971	(22,105)	21,017	(22,384)
Net deferred tax assets (liabilities)		(1,134)		(1,366)
Reconciliation to balance sheets		2019		2018
Deferred tax assets		1,998		1,664
Deferred tax liabilities		3,132		3,031
Net deferred tax assets (liabilities)		(1,134)		(1,366)

Recognition of net deferred tax asset is based on expected taxable income in the future.

At the end of 2019, Hydro had tax loss carryforwards of NOK 18,684 million, mainly in Brazil, Spain, Australia, Italy and Germany. Of the total, NOK 16,066 million is without expiration. The majority of the tax loss carryforwards with an expiry date expire after 2024. Tax assets are recognized for about 53 percent of the tax losses.

Note 10.2 Research and development

Accounting principles for research and development

Research expenditures are expensed as incurred. Development costs are capitalized as intangible assets at cost in accordance with IAS 38 Intangible Assets when the recognition criteria are met, including probable future economic benefit and that the cost can be measured reliably.

To the extent development costs are directly contributing to the construction of a fixed asset, the development costs are capitalized as part of the asset provided all criteria for capitalizing the cost are met. Costs incurred during the preliminary project stage, as well as maintenance costs, are expensed as incurred.

Research and development in 2019 and 2018

Total expensed research and development cost was NOK 625 million in 2019 and NOK 594 million in 2018. Research and development activities are aiming at making production of aluminium more efficient including further improving the operational and environmental performance of Hydro's electrolysis technology. A significant proportion of the research and development means are also used for further developing the production processes and products within casting and alloy technology as well as extruded solutions, rolled products and alumina.

The capitalized development costs were NOK 19 million in 2019 and NOK 21 million in 2018.

Note 10.3 Cash flow information

Cash disbursements and receipts included in cash from operations

Amounts in NOK million	2019	2018
Income taxes paid	2,981	3,231
Interest paid	829	653
Interest received	295	250

In 2019 and 2018, non-cash investing activities for asset retirement costs amounted to NOK 580 million and NOK 59 million, respectively.

Note 10.4 Auditor's remuneration

KPMG is the Group auditor of Norsk Hydro ASA. The following table shows fees to the appointed auditors for 2019 and 2018. For all categories the reported fee is the recognized expense for the year.

Amounts in NOK million	Audit ¹⁾	Audit related services ²⁾	Other services ³⁾	Tax related services	Total
2019					
Norway	10	1	2	-	14
Outside Norway	39	1	1	5	47
Sum	49	3	3	5	60
2018					
Norway	14	-	11	-	25
Outside Norway	36	-	-	3	39
Total	51	1	11	3	66

1) Audit fees of NOK 49 million (2018: NOK 51 million) consist of fees to KPMG of NOK 45 million (2018: NOK 36 million)

2) Audit related fees of NOK 3 million in 2019 were fees to KPMG.

3) Other services in 2019 mainly include KPMG's review of viability performance. Fees for other services of NOK 11 million in 2018 consist of fees to KPMG of NOK 3 million, and fees to EY of NOK 9 million.

Note 10.5 Changes in accounting principles and new pronouncements

Changes in accounting principles

Hydro implemented IFRS 16 as of January 1, 2019.

Hydro has implemented IFRS 16 retrospectively with the cumulative effect of initially applying the standard recognized at the date of implementation, i.e. January 1, 2019. The implementation of IFRS 16 impacted contracts previously accounted for as operating leases. Hydro did not make any changes related to finance leases. The effects of the implementation of IFRS 16 is summarized in the table below. Further information about which policies Hydro has adopted and the implementation are included in note 2.6 Leases.

In addition, Hydro has adopted IFRIC 23 Uncertainty over Income Tax Treatment; effective date January 1, 2019. The interpretation clarifies how to assess tax positions when there is uncertainty about what the correct understanding of tax laws and regulations is. IFRIC 23 did not have any impact for Hydro at the time of transition.

Change of accounting principles, amounts in NOK million	Effect of implementing IFRS 16
Property, plant and equipment	3,070
Deferred tax asset	6
Other assets	2
Total assets	3,079
Bank loans and other interest-bearing short-term debt	830
Long-term debt	2,262
Equity attributable to Hydro shareholders	(13)
Total liabilities and equity	3,079

New pronouncements

None of the issued, not yet effective, accounting standards or amendments to such standards are expected to have significant effects for Hydro's financial reporting.

Financial statements Norsk Hydro ASA

Income statements

Amounts in NOK million	Notes	2019	2018
Revenue		227	232
Gain (loss) on sale of subsidiaries, net		-	(3)
Total operating income		227	229
Employee benefit expense	2, 3	739	603
Depreciation	4	71	21
Other		98	251
Total operating expenses		908	875
Operating loss		(681)	(647)
Financial income, net	5	5,369	1,938
Income before tax		4,688	1,292
Income taxes	6	(19)	(276)
Net income		4,668	1,015
Appropriation of net income and equity transfers			
Dividend proposed		2,560	2,558
Retained earnings		2,109	(1,543)
Total appropriation		4,668	1,015

Statements of comprehensive income

Amounts in NOK million. Years ended December 31	Notes	2019	2018
Net income		4,668	1,015
Other comprehensive income			
Items that will not be reclassified to income statement			
Remeasurement postemployment benefits, net of tax		478	(353)
Other comprehensive income		478	(353)
Total comprehensive income	13	5,146	662

Balance sheets

Amounts in NOK million, December 31	Notes	2019	2018 Restated
Assets			
Property, plant and equipment and intangible assets	4	565	608
Shares in subsidiaries	7	57,052	57,052
Receivables from subsidiaries	8, 10	15,813	13,908
Prepaid pension, investments and other non-current assets	2, 9	5,527	4,733
Total financial non-current assets		78,392	75,692
Receivables from subsidiaries		6,305	9,465
Prepaid expenses and other current assets	10	253	62
Cash and cash equivalents		8,355	2,984
Total current assets		14,914	12,512
Total assets		93,870	88,812
Equity and liabilities			
Paid-in capital			
Share capital	13	2,272	2,272
Treasury shares	13	(23)	(25)
Paid-in premium	13	28,987	28,987
Other paid-in capital	13	136	139
Retained earnings			
Retained earnings	13	31,209	28,622
Treasury shares	13	(688)	(731)
Equity	13	61,893	59,265
Long-term provisions	2, 9	3,478	3,373
Long-term debt	12	12,027	5,554
Other long-term liabilities		12,027	5,554
Bank loans and other interest-bearing short-term debt		1,538	3,104
Dividends payable		2,560	2,558
Payables to subsidiaries		11,843	14,379
Other current liabilities		531	580
Total current liabilities		16,472	20,621
Total equity and liabilities		93,870	88,812

Statements of cash flows

Amounts in NOK million	2019	2018
Net income	4,668	1,015
Depreciation	71	21
Net foreign exchange (gain) loss	42	(453)
Changes in receivables and payables, and other items	586	(794)
Net cash provided by (used in) operating activities	5,367	(211)
Net purchases of other investments	(28)	(46)
Net cash used in investing activities	(28)	(46)
Dividends paid	(2,558)	(3,581)
Proceeds from shares issued	24	44
Other financing activities, net	2,463	(1,103)
Net cash used in financing activities	(71)	(4,640)
Foreign currency effects on cash	103	(8)
Net increase (decrease) in cash and cash equivalents	5,371	(4,905)
Cash and cash equivalents at beginning of year	2,984	7,889
Cash and cash equivalents at end of year	8,355	2,984

Notes to the financial statements Norsk Hydro ASA

Note 1 Summary of significant accounting policies

The financial statements of Norsk Hydro ASA are prepared in accordance with the Norwegian accounting act and regulation on simplified application of international accounting standards (forskrift om forenklet anvendelse av internasjonale regnskapsstandarder – simplified IFRS).

Financial statement preparation requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses as well as disclosures of contingencies. Actual results may differ from estimates. Interest rates used for calculating net present values are rounded to the nearest 10 basis points for post employment benefits, to the nearest 25 basis points for other non-financial assets and liabilities. As a result of rounding adjustments, the figures in one or more columns included in the financial statements may not add up to the total of that column.

Transition from accounting principles generally accepted in Norway to simplified IFRS

Norsk Hydro ASA has elected to implement simplified IFRS as of the fiscal year 2019. The change is a response to increased differences between IFRS as applied in the consolidated financial statements, and accounting principles generally accepted in Norway which were applied by Norsk Hydro ASA in prior years. The transition is applied retrospectively, i.e. comparable information for 2018 has been reviewed for possible differences. No measurement differences have been identified in the comparable period.

Changes in accounting principles in 2019

Norsk Hydro ASA implemented IFRS 16 Leases in 2019. The standard is, as allowed in the transition regulation of the standard, implemented retrospectively with the cumulative effect of initially applying the standard recognized as at the date of implementation, January 1, 2019. Norsk Hydro ASA has further elected to utilize the practical expedient available for measuring leased assets currently accounted for as operating leases at an amount equal to the lease liability, adjusted for any prepaid or accrued lease payments. Leased assets with a remaining lease period of less than 12 months at transition were excluded from lease accounting. Further, leases of assets of a low value, mainly such items as PCs, office equipment and similar, are excluded from lease accounting. When measuring leases, fixed lease payments for extension periods reasonably certain to be used are included. As a practical expedient, non-lease components are not separated from lease contracts.

Leased assets

Leases are, for the fiscal year 2018, assessed under IAS 17 Leases. Lease arrangements that transferred the majority of risks and control to Hydro were considered financial lease and recognized as asset and liability. Payments under other leases and rental arrangements were expensed over the lease term.

Shares in subsidiaries, associates and jointly controlled entities

Shares in subsidiaries, associates and jointly controlled entities are presented according to the cost method. Group relief received is included in dividends from subsidiaries. Dividend from subsidiaries is recognized in the year for which it is proposed by the subsidiary to the extent Norsk Hydro ASA can control the decision of the subsidiary through its share holdings. Shares in subsidiaries, associates and jointly controlled entities are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may exceed the fair value of the investment. An impairment loss is reversed if the impairment situation is deemed to no longer exist.

Employee retirement plans

Norsk Hydro ASA accounts for employee retirement plans are measured in accordance with IAS 19, see note 9.5 Employee retirement plans to the consolidated financial statements for additional information.

Foreign currency

The functional currency of the company is the Norwegian krone, NOK. Realized and unrealized currency gains or losses on transactions denominated in other currencies than NOK, as well as currency gains or losses on assets and liabilities denominated in a currency other than NOK, are included in Financial income, net.

Cash and cash equivalents

Cash and cash equivalents include cash, bank deposits and all other monetary instruments with a maturity of less than three months at the date of purchase.

Short-term investments

Short-term investments include bank deposits and all other monetary instruments with a maturity between three and twelve months at the date of purchase and current listed equity and debt securities held for trading and valued at fair value. The resulting unrealized holding gains and losses are included in Financial income, net. Investment income is recognized when earned.

Property, plant and equipment

Property, plant and equipment is carried at historical cost less accumulated depreciation and impairment losses. According to IAS 36 Impairment of Assets, such assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment of long-lived assets is recognized when the recoverable amount determined as the higher of fair value less cost to sell or value in use of the asset or group of assets is less than the carrying value. The amount of the impairment is the difference between the carrying value and the recoverable amount. An impairment loss is reversed if the impairment situation is deemed to no longer exist.

Intangible assets

Intangible assets acquired individually or as a group are recognized at fair value when acquired, in accordance with IAS 38 Intangible Assets. Intangible assets are amortized on a straight-line basis over their useful life and tested for impairment whenever indications of impairment are present.

Norsk Hydro ASA accounts for CO₂ emission allowances at cost as an intangible asset. The emission rights are not amortized, impairment testing is done on an annual basis. Sale of CO₂ emission rights is recognized at the time of sale at the transaction price.

Derivative instruments

Forward contracts and options for purchase or sale of currency or commodities that are considered readily convertible to cash are recognized in the financial statements and measured at fair value at each balance sheet date with the resulting unrealized gain or loss recorded in Financial income, net.

Norsk Hydro ASA has decided to utilize the option in the regulation to exclude embedded derivatives and contracts deemed to be derivatives based on the underlying product being readily convertible to cash and not for own use when the contract is with a subsidiary.

Provisions

Provisions are recognized when Norsk Hydro ASA has a present obligation (legal or constructive) as a result of a past event, it is probable (more likely than not) that Norsk Hydro ASA will be required to settle the obligation, and a reliable estimate can be made of the amount, taking into account the risks and uncertainties. The provision is measured at the present value of the cash flows estimated to settle the obligation. Uncertain outcomes are measured as the expected value of reasonably possible outcomes.

Contingencies and guarantees

Norsk Hydro ASA recognizes a liability for the fair value of obligations it has undertaken in issuing guarantees. Contingencies are recognized in the financial statements when probable of occurrence and reliably estimable.

Share-based compensation

Norsk Hydro ASA accounts for share-based payment in accordance with IFRS 2 Share-Based Payment. See note 9.3 Employee remuneration to the consolidated financial statements for additional information.

Risk management

For information about risk management in Norsk Hydro ASA see note 8.1 Financial and commercial risk management to the consolidated financial statements.

Income taxes

Deferred income tax expense is calculated using the liability method in accordance with IAS 12 Income Taxes. Under the liability method, deferred tax assets and liabilities are measured based on the differences between the carrying values of assets and liabilities for financial reporting and their tax basis which are considered temporary in nature. Deferred income tax related to remeasurements of pension obligations are recognized through Other comprehensive income. The tax effect of equity transactions, excluded transfers to owners, is recognized as a part of the equity transaction and do not affect the income tax expense. Other changes in deferred income tax asset and liability balances during the year represent the deferred income tax expense. Changes resulting from amendments and revisions in tax laws and tax rates are recognized when the new tax laws or rates are enacted.

Note 2 Employee retirement plans

Norsk Hydro ASA has closed the main defined benefit plans for new members, and the majority of employees are now covered by a defined contribution plan that is based on salaries up to a maximum level subject to tax deduction. For additional salaries, employees earn retirement benefits in an unfunded contribution based plan. The remaining employees are covered by defined benefit plans that offer benefits based on final salary level and the number of years in service, and include benefits for dependents. The plan providing benefits based on salaries up to a maximum level is funded; all vested benefits are required by law to be funded for such plans. Benefits based on salaries above this level are covered by unfunded plans. The main funded

plan is managed by Norsk Hydros Pensjonskasse, an independent pension trust. Hydro's pension plans supplement the public pension schemes in Norway. The plans comply with legal requirements for pension plans in Norway. Plans providing benefits for salary levels above the tax deductible level have been closed for new members from January 1, 2017.

Norsk Hydro ASA participates in a pension plan that entitles the majority of its employees life-long benefits in addition to other pension benefits. The benefits are financed through a pooled arrangement by private sector employers (avtalefestet pensjon, AFP) where also the Norwegian state contributes. The plan is a defined benefit plan with limited funding and where plan assets are not segregated. The information required to calculate the share of the plan and account for the plan as a defined benefit plan is not available from the plan administrator. Hydro therefore accounts for the plan as if it were a defined contribution plan. The annual contributions have increased since inception and are expected to increase further. The employer contributions are included in Multiemployer plans.

Pension cost

Amounts in NOK million	2019	2018
Defined benefit plans	36	37
Defined contribution plans	24	20
Multiemployer plans	4	4
Termination benefits and other	1	6
Social security cost	11	8
Pension expense	76	73
Interest expense (income)	(36)	(43)
Remeasurement (gain) loss in other comprehensive income	(613)	445

Recognized defined benefit assets and liability

Amounts in NOK million	2019	2018
Defined benefit obligation major plans	(5,230)	(5,306)
Plan assets	7,373	6,699
Reimbursement rights	301	310
Liability other plans	(3)	(3)
Social security cost	(336)	(330)
Net defined benefit asset	2,105	1,371
Recognized prepaid pension	4,826	4,046
Recognized pension liability	(2,721)	(2,675)
Net amount recognized	2,105	1,371

Change in defined benefit obligation (DBO)

Amounts in NOK million	2019	2018
Opening Balance	(5,306)	(5,103)
Current service cost	(35)	(36)
Interest expense	(129)	(119)
Actuarial gain (loss) economic assumptions	33	(231)
Experience gain (loss)	(94)	(108)
Benefit payments	302	296
Terminations benefits	(1)	(6)
Closing Balance	(5,230)	(5,306)

Change in pension plan assets

Amounts in NOK million	2019	2018
Opening Balance	6,699	6,832
Interest income	166	162
Return on plan assets above (below) interest income	676	(105)
Contributions to plans	25	5
Benefit payments	(193)	(196)
Closing Balance	7,373	6,699

Analysis of the defined benefit obligation (DBO)

Amounts in NOK million	2019	2018
Active members	(1,129)	(1,115)
Deferred members	(476)	(468)
Pensioners	(3,625)	(3,722)
Defined benefit obligation	(5,230)	(5,306)

	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
Assumptions	2019	2019	2018	2018
Discount rate	2.30%	2.50%	2.50%	2.40%
Expected salary increase	2.00%	2.50%	2.50%	2.25%
Expected pension increase	1.25%	1.50%	1.50%	1.00%
Mortality basis	K2013	K2013	K2013	K2013

See note 9.5 Employee retirement plans in notes to the consolidated financial statements for information about sensitivities.

Note 3 Management remuneration, employee costs and auditor fees

See note 9.2 Management remuneration in the notes to the consolidated financial statements for information and details related to the Corporate Management Board remuneration. Costs for some corporate management board members employed by subsidiaries are charged to Norsk Hydro ASA for services rendered as members of the Corporate Management Board.

See note 9.4 Board of Directors and Corporate Assembly in the notes to the consolidated financial statements for information and details related to the Board of Directors' remuneration.

See note 9.3 Employee remuneration in the notes to the consolidated financial statements for information on the employee share purchase plan.

Partners and employees of Hydro's appointed auditors, KPMG, own no shares in Norsk Hydro ASA or any of its subsidiaries. Audit fees were NOK 6 million and NOK 8 million in 2019 and 2018, respectively. Fees for other services were NOK 2 million in both 2019 and 2018.

The average number of employees in Norsk Hydro ASA was 303 in 2019 as compared to 282 in 2018. As of year end 2019 and 2018, Norsk Hydro ASA employed 319 and 286 employees, respectively.

Total loans given by Norsk Hydro ASA to Norwegian employees as of December 31, 2019 were NOK 106 million. Loans to employees consist of NOK 65 million secured loans (home and car loans) with the remainder unsecured. The unsecured loan balance as of December 31, 2019 related to the employee share purchase plan was NOK 9 million.

Payroll related expenses are presented in the table below.

Amounts in NOK million	2019	2018
Employee benefit expense:		
Salaries	593	467
Social security costs	65	59
Other benefits	5	3
Pension expense (note 2)	76	73
Total	739	603

Note 4 Property, plant and equipment and intangible asset

Leases expensed in the period amounts to NOK 30 million and refers to leases of short term, low value or leases with variable payments.

Amounts in NOK million	Property, plant and equipment	Intangible assets	Total
Cost December 31, 2018	375	66	441
Effect of change in accounting principle	383	-	383
Additions at cost	21	6	27
Accumulated depreciation and impairment December 31, 2019	(245)	(42)	(286)
Carrying value December 31, 2019	535	30	565
Depreciation and impairment in 2019	(60)	(11)	(71)

Intangible assets mainly consist of software.

Note 5 Finance income and expense

Amounts in NOK million	2019	2018
Dividends from subsidiaries	5,158	1,218
Interest from group companies	549	475
Other interest income	87	47
Interest paid to group companies	(136)	(102)
Other interest expense	(290)	(213)
Net foreign exchange gain (loss)	(42)	453
Other, net	43	61
Financial income (expense), net	5,369	1,938

Note 6 Income taxes

The tax effect of temporary differences resulting in deferred tax assets (liabilities) are:

Amounts in NOK million	Temporary differences	
	2019	2018
		Restated
Short-term items	10	6
Long-term receivables from subsidiaries	(143)	(158)
Pensions ¹⁾	(463)	(302)
Long-term debt	132	133
Other long-term items	(65)	(73)
Deferred tax assets (liabilities)	(529)	(394)

1) Includes NOK (135) million and NOK 92 million of tax benefit (expense) allocated to equity in 2019 and 2018 respectively.

Taxable temporary differences and deductible temporary differences, which reverse or may reverse in the same period, are netted.

Reconciliation of tax expense

Amounts in NOK million	2019	2018
Income (loss) before taxes	4,688	1,292
Expected income taxes at statutory tax rate	1,031	297
Dividend exclusion	(1,034)	(30)
Effect of tax rate change	-	(16)
Permanent differences and other, net	22	25
Income taxes	19	276

Components of income taxes

Current income taxes	19	156
Change in deferred taxes	-	121
Income taxes	19	276

See note 10.1 Income taxes in the consolidated financial statements for further information.

Taxes payable were NOK 46 million per December 31, 2019 and NOK 164 million per December 31, 2018.

Note 7 Shares in subsidiaries

The following shares in subsidiaries are directly owned by Norsk Hydro ASA.

Company name	Country	Location	Percentage of shares owned by Norsk Hydro ASA	Book value (NOK million)
Hydro Aluminium AS	Norway	Oslo	100.00	51,293
Hydro Energi AS	Norway	Oslo	100.00	5,643
Hydro Aluminium Deutschland GmbH ¹⁾	Germany	Grevenbroich	25.04	92
Industriforsikring AS	Norway	Oslo	100.00	20
Hydro Kapitalforvaltning AS	Norway	Oslo	100.00	4
Total				57,052

1) The company is owned 74.96 percent by Hydro Aluminium AS, and 25.04 percent by Norsk Hydro ASA.

Percentage of shares owned equals percentage of voting shares owned. Several of the above-mentioned companies also own shares in other companies.

In addition to the directly owned subsidiaries listed above, Norsk Hydro ASA has the following subsidiaries with significant operational activities. Sales offices, companies mainly serving as holding companies, and dormant companies, as well as companies holding smaller operational activities are not included in the list below. A full list of subsidiaries is available in Hydro's country by country reporting and at www.hydro.com. The companies are listed by the business area in which the majority of their activities are managed.

Company name	Country	Ownership
Bauxite & Alumina		
ALNORTE - Alumina do Norte do Brasil S.A.	Brazil	92.13%
Mineração Paragominas SA	Brazil	100.00%
Rolled Products		
Hydro Aluminium Rolled Products GmbH	Germany	100.00%
Hydro Aluminium Rolled Products AS	Norway	100.00%
Primary Metal		
Hydro Aluminium Australia Pty Limited	Australia	100.00%
ALBRAS - Alumínio Brasileiro SA	Brazil	51.00%
Sør-Norge Aluminium AS	Norway	100.00%
Slovalco a.s.	Slovakia	55.30%
Metal Markets		
Extrusion Services S.a.r.l	France	100.00%
Hydro Aluminium Gießerei Rackwitz GmbH	Germany	100.00%
Hydro Aluminium Clervaux S.A.	Luxembourg	100.00%
Hydro Aluminium Iberia S.A.U	Spain	100.00%
Hydro Aluminium Deeside Ltd.	United Kingdom	100.00%
Hydro Aluminium Metals USA, LLC	United States	100.00%
Extruded Solutions		
Hydro Extrusion Nenzing GmbH	Austria	100.00%
Hydro Building Systems Belgium NV	Belgium	100.00%
Hydro Extrusion Lichtervelde NV	Belgium	100.00%
Hydro Extrusion Raeren SA	Belgium	100.00%
Hydro Precision Tubing Lichtervelde NV	Belgium	100.00%
Hydro Extrusion Brasil S.A.	Brazil	100.00%
Hydro Extrusion Canada Inc.	Canada	100.00%
Hydro Precision Tubing (Suzhou) Co. Ltd.	China	100.00%
Hydro Extrusion Denmark A/S	Denmark	100.00%
Hydro Precision Tubing Tønder A/S	Denmark	100.00%
Hydro Building Systems France Sarl	France	100.00%
Hydro Extrusion Albi SAS	France	100.00%
Hydro Extrusion Lucé/Chateauroux SAS	France	100.00%
Hydro Extrusion Puget SAS	France	100.00%
Hydro Building Systems Germany GmbH	Germany	100.00%
Hydro Extrusion Deutschland GmbH	Germany	100.00%
Hydro Extrusion Offenburg GmbH	Germany	100.00%
Hydro Extrusion Hungary Kft	Hungary	100.00%
Sapa Extrusion India Pvt. Ltd.	India	100.00%
Hydro Building Systems Italy S.P.A.	Italy	100.00%
Hydro Extrusion Italy S.r.l.	Italy	100.00%
Hydro Extrusion Drunen B.V.	Netherlands	100.00%
Hydro Extrusion Hoogezand B.V.	Netherlands	100.00%
Hydro Extrusion Poland Sp. z.o.o	Poland	100.00%
Hydro Extrusion Slovakia a.s.	Slovakia	100.00%
Hydro Building Systems Spain S.L.U.	Spain	100.00%
Hydro Extrusion Spain S.A.U.	Spain	100.00%
Hydro Extrusion Sweden AB	Sweden	100.00%
Hydro Components UK Ltd.	United Kingdom	100.00%
Hydro Extrusion UK Ltd.	United Kingdom	100.00%
Hydro Extruder LLC	United States	100.00%
Hydro Extrusion Delhi LLC	United States	100.00%
Hydro Extrusion North America LLC	United States	100.00%
Hydro Extrusion Portland Inc	United States	100.00%
Hydro Extrusion USA LLC	United States	100.00%
Hydro Precision Tubing USA LLC	United States	100.00%
Energy		
Røldal Suldal Kraft as	Norway	91.26%

Note 8 Related party information

Norsk Hydro ASA operates the cash pooling arrangements in Hydro. Further, Norsk Hydro ASA extends loans to subsidiaries, associates and jointly controlled entities at terms and conditions reflecting prevailing market conditions for corresponding services, allowing for a margin to cover administration and risk. See note 5 Financial income and expense for information on interest paid to and received from group companies.

Norsk Hydro ASA allocates costs for corporate staff services and shared services to subsidiaries. The total amount allocated was NOK 138 million in 2019 and NOK 122 million in 2018. Receivables related to such costs amounted to NOK 107 million and NOK 122 million per December 31, 2019 and 2018, respectively.

For information on transactions with employees and management, see Note 3 Management remuneration, employee costs and auditor fees and note 9.2 Management remuneration in the notes to the consolidated financial statements. For information on transactions with Board of Directors and Corporate Assembly see note 9.4 Board of Directors and Corporate Assembly. See note 9.6 Other related party information in the notes to the consolidated financial statements for identification of related parties and primary relationships with those parties. See note 11 for information on guarantees provided on behalf of subsidiaries and jointly controlled entities.

Note 9 Specification of balance sheet items

Amounts in NOK million	2019	2018
Securities	535	535
Prepaid pension	4,826	4,046
Other non-current assets	165	152
Total prepaid pension, investments and other non-current assets	5,527	4,733
Pension liability	2,721	2,675
Deferred tax liabilities	529	394
Other long-term provisions	229	304
Total long-term provisions	3,478	3,373

Other long-term provisions include an onerous contract of office space, see note 9.6 Other related party information in the notes to the consolidated financial statements.

Note 10 Financial instruments

Norsk Hydro ASA offers currency derivatives to subsidiaries using such instruments for risk management. Contracts are recognized at estimated market value, determined by calculating the contractual cash flows using currency rates at the balance sheet date and discounting those cash flows to a present value. At the end of 2019 and 2018, the value of currency forward contracts outstanding with subsidiaries were as follows:

Amounts in NOK million	2019	2018
Currency forward contracts, short-term	(5)	10
Currency forward contracts, long-term	34	91
Financial income, net	29	100

The contracts represent exposure mainly in Euro. In addition, there are some contracts with exposure to US dollars, British pounds, Swiss franc, Danish krone, Swedish krone, Japanese yen and Turkish lira, representing lower amounts. The contracts mature no later than 2024.

Note 11 Guarantees

Norsk Hydro ASA provides guarantees arising in the ordinary course of business including stand-by letters of credit, performance bonds and various payment or financial guarantees. All commercial guarantees are on behalf of subsidiaries.

Amounts in NOK million	2019	2018
Guarantees related to jointly controlled entities	-	348
Commercial guarantees	3,390	3,585
Total guarantees not recognized	3,390	3,934

Note 12 Long-term debt

Amounts in NOK million	2019	2018
		Restated
EUR	7,801	-
NOK	2,998	4,497
SEK	1,885	2,915
USD	298	588
Total unsecured loans	12,982	8,000
Lease liabilities	337	383
Outstanding debt	13,319	8,383
Less: Current portion	(1,292)	(2,829)
Total long-term debt	12,027	5,554

As of December 31, 2019, long-term debt that falls due after 2024 amounted to NOK 7,988 million. See note 7.4 Short and long-term debt in notes to the consolidated financial statements for further information.

Note 13 Number of shares outstanding, shareholders and equity reconciliation

The share capital of Norsk Hydro ASA as of December 31, 2019 was NOK 2,271,760,107 consisting of 2,068,998,276 ordinary shares at NOK 1.098 per share. As of December 31, 2019, Norsk Hydro ASA had purchased 21,349,486 treasury shares at a cost of NOK 711 million. See Consolidated statements of changes in equity and note 7.6 Shareholders' equity for additional information.

The table shows shareholders holding one percent or more of the total 2,047,648,790 shares outstanding as of December 31, 2019, according to information in the Norwegian securities' registry system (Verdipapirsentralen).

Name	Number of shares
The Ministry of Trade, Industry and Fisheries of Norway	708,865,253
State Street Bank and Trust Comp ¹⁾	130,324,785
Folketrygdfondet	110,114,072
Clearstream Banking S.A. ¹⁾	55,088,438
JPMorgan Chase Bank, N.A., London ¹⁾	47,394,849
Vanguard International Growth FD	38,345,698
Verdipapirfondet Dnb Norge (IV)	37,015,334
Banque Pictet & Cie SA ¹⁾	33,603,606
HSBC Bank PLC ¹⁾	27,085,596
JPMorgan Chase Bank, N.A., London ¹⁾	22,313,227
State Street Bank and Trust Comp ¹⁾	21,220,272

1) Nominee accounts.

Changes in equity

Amounts in NOK million	Paid-in capital	Retained earnings	Total equity
December 31, 2018	31,373	27,891	59,265
Total Comprehensive Income		5,146	5,146
Dividend proposed		(2,560)	(2,560)
Treasury shares	(2)	43	42
December 31, 2019	31,372	30,521	61,893

Note 14 Changes in accounting principles

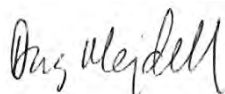
Norsk Hydro ASA implemented IFRS 16 Leases in 2019. The implementation in the parent company financial statements was done at the same time and the same method as described in note 10.5 Changes in accounting principles and new pronouncements to the consolidated financial statements. The effects of the implementation of IFRS 16 relate to the rental contract for Hydro's headquarters in Oslo, Norway. The effects on the opening balance is summarized in the table below.

Change of accounting policies, amounts in NOK million	Effect of implementing IFRS 16
Property, plant and equipment	383
Long-term debt	321
Bank loans and other interest-bearing short-term debt	61
Total equity and liabilities	383

Responsibility statement

We confirm to the best of our knowledge that the consolidated financial statements for 2019 have been prepared in accordance with IFRS as adopted by the European Union, as well as additional information requirements in accordance with the Norwegian Accounting Act, that the financial statements for the parent company for 2019 have been prepared in accordance with the Norwegian Accounting Act and generally accepted accounting practice in Norway, and that the information presented in the financial statements gives a true and fair view of the assets, liabilities, financial position and result of Norsk Hydro ASA and the Hydro Group for the period. We also confirm to the best of our knowledge that the Board of Directors' Report includes a true and fair review of the development, performance and financial position of Norsk Hydro ASA and the Hydro Group, together with a description of the principal risks and uncertainties that they face, and that the country by country report for 2019 has been prepared in accordance with the Norwegian Accounting Act §3-3d and the Norwegian Security Trading Act §5-5a.

Oslo, March 10, 2020




Dag Mejdell
Chair



Irene Rummelhoff
Deputy chair



Arve Baade
Board member



Finn Jebsen
Board member



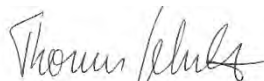
Liselott Kilaas
Board member



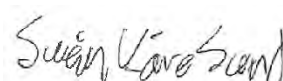
Peter Kukielski
Board member



Sten Roar Martinsen
Board member



Thomas Schulz
Board member



Svein Kåre Sund
Board member



Marianne Wiinholt
Board member



Hilde Merete Aasheim
President and CEO

Independent auditor's report



To the Annual Shareholders' Meeting of Norsk Hydro ASA

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of Norsk Hydro ASA. The financial statements comprise:

- The financial statements of the parent company Norsk Hydro ASA (the Company), which comprise the balance sheet as at 31 December 2019, the income statement, statement of comprehensive income and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and
- The consolidated financial statements of Norsk Hydro ASA and its subsidiaries (the Group), which comprise the balance sheet as at 31 December 2019, the income statement, statement of comprehensive income, statement of changes in equity, statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion:

- The financial statements are prepared in accordance with the law and regulations.
- The accompanying financial statements give a true and fair view of the financial position of the Company as at 31 December 2019, and its financial performance and its cash flows for the year then ended in accordance with simplified application of international accounting standards according to section 3-9 of the Norwegian Accounting Act ("Simplified IFRS").
- The accompanying consolidated financial statements give a true and fair view of the financial position of the Group as at 31 December 2019, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the EU ("IFRS").

Basis for Opinion

We conducted our audit in accordance with laws, regulations, and auditing standards and practices generally accepted in Norway, including International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company and the Group as required by laws and regulations, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Provisions for environmental clean-up cost and asset retirement obligations

Refer to Note 1.1 Reporting entity, basis of preparation and significant accounting policies, and Note 4.1 Uncertain assets and liabilities.

The key audit matter

The Group is involved in operations such as bauxite mining, alumina refining, primary aluminium production and extrusion activities.

There is an inherent risk that these operations may generate significant obligations related to site restoration, reforestation and other remediation work. Such potential obligations are dependent on the jurisdictions in which the company operates and changes in the relevant political and legislative environments.

Management decisions to expand, curtail or terminate operations in specific locations can impact obligations as described above.

Estimating and calculating such environmental obligations requires significant management judgement. The risk of inaccurate estimates is increased due to the uncertainty of scope and timing of such obligations and the limited amount of historical data available

The Group has recognized environmental clean-up provisions and asset retirement obligations of NOK 4,110 million as explained in note 4.1 Uncertain assets and liabilities.

Impairment assessment of goodwill, intangible and non-current assets

Refer to Note 1.1 Reporting entity, basis of preparation and significant accounting policies, Note 2.1. Property, plant and equipment, Note 2.2 Intangible assets, Note 2.3 Goodwill, 2.4 Depreciation and amortization expense, and 2.5 Impairment of non-current assets.

The key audit matter

The Group's operations are sensitive to certain commodity prices and other factors, including aluminum and alumina prices, energy prices, inflation rates, relevant foreign exchange rates and production volumes which impact key assumptions in cash flow forecasts and can give rise to impairment indicators.

Management exercise judgement related to expected timing of future cash flows and key assumptions

The economic environment and volatility of long-term assumptions indicate that impairment could be a risk related to specific assets and cash generating units and can also impact the assessment of impairment of goodwill.

Certain plants are also sensitive to the uncertainty related to renewal of power contracts expiring within 2 to 5 years.

Impairment charges of 912 were recognized in 2019 that consists of;

- NOK 506 million in relation to the Svalco primary aluminium plant
- NOK 145 related to undeveloped bauxite resources that were concluded not probable for development
- NOK 255 million related to announced closure and sale of production facilities in Extruded Solutions.

As at 31 December 2019, the Group has goodwill of NOK 6,551 million, Property, plant and equipment of NOK 74,243 million and intangible assets of NOK 4,951million.

How the matter was addressed in our audit

Our audit procedures in this area included:

- Assessing the estimated cost and timing of activities applied in the calculations by comparing management forecasts with prior year estimates
- Comparing management's assumptions to relevant market data to test the reasonableness of discount rates, inflation rates, foreign exchange rates, HR data and other key assumptions used in the calculations
- Assessing the accounting treatment for compliance with IFRS and consistency of application, in particular related to the extent to which obligations are capitalized or expensed and the amortization period for capitalized assets
- Testing, with assistance from our valuation specialists, the mathematical accuracy of the models used to calculate provisions and asset retirement obligations
- Assessing the adequacy of the disclosures pertaining to estimation uncertainty, provisions and contingent liabilities.

How the matter was addressed in our audit

Our audit procedures in this area included:

- Assessing management's process and results for identification and classification of CGU's and assessing whether they were appropriate and in accordance with relevant accounting standards
- Evaluating management's assessment of impairment indicators
- Performing retrospective reviews of the accuracy of management's estimates in terms of timing of cash outflows and other assumptions such as long-term pricing where historical data is available
- Evaluating and challenging the forecasted cash flows including timing of future cash flows applied in the models with reference to historical accuracy and approved business plans
- Testing the sensitivity of movements in key assumptions
- Evaluating, with assistance from our valuation specialists, key assumptions such as aluminium and alumina prices, inflation rates, energy and fuel prices, relevant foreign exchange rates and discount rates by reference to external sources and relevant benchmarks
- Testing the mathematical accuracy of the models used to calculate value in use
- Assessing the adequacy of the disclosures related to impairment

Other information

Management is responsible for the other information. The other information comprises the information included in the Annual Report, except the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and the President and CEO ("Management") for the Financial Statements

The Board of Directors and the President and CEO ("Management") are responsible for the preparation in accordance with law and regulations, including fair presentation of the financial statements of the Company in accordance with simplified IFRS, and for the preparation and fair presentation of the financial statements of the Group in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's and the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with laws, regulations, and auditing standards and practices generally accepted in Norway, including ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with laws, regulations, and auditing standards and practices generally accepted in Norway, including ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error. We design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's or the Group's internal control.
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company and the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company and the Group to cease to continue as a going concern.
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Board of Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Board of Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Report on Other Legal and Regulatory Requirements

Opinion on the Board of Directors' report

Based on our audit of the financial statements as described above, it is our opinion that the information presented in the Board of Directors' report and in the statements on Corporate Social Responsibility concerning the financial statements and the going concern assumption is consistent with the financial statements and complies with the law and regulations.

Opinion on Registration and Documentation

Based on our audit of the financial statements as described above, and control procedures we have considered necessary in accordance with the International Standard on Assurance Engagements (ISAE) 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, it is our opinion that management has fulfilled its duty to produce a proper and clearly set out registration and documentation of the Company's accounting information in accordance with the law and bookkeeping standards and practices generally accepted in Norway.

Oslo, 10 March 2020
KPMG AS

Lars Inge Pettersen
State Authorised Public Accountant

Note: This translation from Norwegian has been prepared for information purposes only.

Statement of the Corporate Assembly to the Annual general meeting of Norsk Hydro ASA

The Board of Directors' proposal for the financial statements for the financial year 2019 and the Auditors' report have been submitted to the corporate assembly.

The Corporate Assembly recommends that the directors' proposal regarding the financial statements for 2019 for the parent company, Norsk Hydro ASA, and for Norsk Hydro ASA and its subsidiaries be approved by the annual general meeting, and that the net income for 2019 of Norsk Hydro ASA be appropriated as recommended by the directors.

Oslo, March 10, 2020

Terje Venold

Viability performance statements

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About the reporting

Principles for reporting on viability performance

The purpose of Hydro's reporting is to provide stakeholders with a fair and balanced picture of relevant aspects, engagements, practices and results for 2019 at a corporate level. We believe that the reporting in total satisfies this purpose. Our reporting on viability performance is aligned with the main reporting principles of the GRI Standards, core option, and the requirements of the International Council on Mining and Metals (ICMM). The selection of elements reported is based on extensive dialogue with stakeholders. In addition, the reporting builds on processes that are part of our daily operations. Important stakeholders include authorities, investors and financial analysts, employees and their representatives, potential employees, customers, non-governmental organizations and local communities affected by major development projects or restructuring processes. Reporting is not necessarily the target of the dialogue process, but when relevant, we use the outcome to improve our reporting, see page 88.

We have endeavored to provide information that is in accordance with the principles of sound reporting practice. The absence of generally accepted reporting standards and practices in certain areas may nevertheless make it difficult to compare results with reports compiled by other companies, without the availability of further data, analyzes and interpretations.

For more information about the Alunorte situation, please see Hydro's Annual Report 2018.

Reporting scope and limitation

The scope of Viability performance as included on page 78 in Hydro's Annual Report 2019, is Hydro's global organization for the period January 1 to December 31, 2019. Operations sold or demerged during the year have in general not been included. Health and safety data for all previously consolidated operations are, however, included in the historical data for the period the unit was owned by Hydro. Regarding environmental data (emissions, energy consumption etc.), operations acquired during the reporting year are included for the complete year. Data from operations that have been closed down, are included for the part of the reporting period it was under operation unless otherwise stated. Minority-owned operations are not included in the reported data except from data based on ownership equity (certain greenhouse gas emissions data), certain qualitative information as well as additional data for 50/50-owned companies, see note E8 and S14.

Environmental data relating to acquired operations are included in our statistics, and historical data have been recalculated to reflect current operations. Correspondingly, historical data of divested activities are taken out of our reported data. Employee, safety and work environment data

are included from/to the closing date of acquisitions/divestments unless otherwise stated.

Data have been prepared from individual reports in accordance with corporate procedures. Data compiled at each operational unit according to local management systems applicable at the respective operational units are typically based on process data systems, measurements, calculations and/or purchasing data. The data are then aggregated at corporate level, and is not intended to include detailed information that is primarily of significance for individual sites, processes, activities and products.

The reporting is based on input from many units and sources of data. Emphasis has been placed on ensuring that the information is neither incomplete nor misleading. However, the scope of the reporting, and varying certainty of data may result in some inherent uncertainties. Please see "Reporting principles" for the specific note to the environmental or social statements for more details.

Main reporting changes

The main changes to the Viability performance reporting in Hydro's Annual Report 2019 compared to 2018, mainly relates to further aligning the reporting on data from Extruded Solution to the other business areas in Hydro. The underlying dataset to calculate emissions from electricity consumption, IEA CO2 emissions from fuel combustion, has been updated, and the historical figures are updated accordingly. The result is a decrease in scope 2 emissions.

Remaining differences

Extruded Solutions was integrated in Hydro's environmental reporting system in 2018. Due to a difference in conversion factors, adjustments in definitions, and other categories, the data may in some cases deviate from the data reported in Hydro's Annual Report 2018.

Historical figures for the Dalles cast house, Bedwas, Utinga and Tubarao are not available.

Where information is reported separately for Extruded Solutions and the rest of Hydro, this is marked either in headlines, the text itself or as footnote. Where there is no such marking, the information relates to Hydro as of 31 December 2019.

Assurance principle and scope

We have requested our company auditor to review the Viability performance 2019 in accordance with the international audit standard ISAE 3000 – Assurance Engagements other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board (IAASB). For the underlying systems, the reader is referred to Hydro's steering documents as described under Corporate Governance, see page 122 in Hydro's Annual Report 2019. The auditor's limited assurance report is found on page 264.

Environmental statements

The table below shows Hydro's main quantitative indicators related to its environmental performance. More detailed information is, when indicated, available in the notes to the environmental statements.

Environmental performance

	Notes	%-change 2018-2019	2019	2018	2017	2016	2015	GRI Standards reference ⁸⁾
GHG emissions								
Direct GHG emissions from consolidated operations (Million tons CO ₂ e) (equal to scope 1)	E1.1	7%	6.98 ⁷⁾	6.55 ⁷⁾	8.23	8.18	7.84	305-1
Indirect GHG emissions from consolidated operations (Million tons CO ₂ e) (equal to scope 2)	E1.1	-1%	2.70 ⁷⁾	2.72 ⁷⁾	2.96	3.17	3.32	305-2
Direct GHG emissions from Hydro's ownership equity (Million tons CO ₂ e) (equal to scope 1) ¹⁾	E1.4	5%	7.41 ⁷⁾	7.05 ⁷⁾	8.48	8.49	8.17	305-1
Indirect GHG emissions from Hydro's ownership equity (Million tons CO ₂ e) (equal to scope 2) ¹⁾	E1.4	-1%	5.33 ⁷⁾	5.37 ⁷⁾	5.31	5.51	5.57	305-2
GHG intensity								
Alumina refining (mt CO ₂ e per mt alumina)	E1.6	-10%	0.71 ⁷⁾	0.79 ⁷⁾	0.69	0.69	0.69	305-4
Electrolysis in Primary Metal (mt CO ₂ e per mt aluminium) ²⁾	E1.7	0%	1.60 ⁷⁾	1.60 ⁷⁾	1.59	1.61	1.60	305-4
Energy production and consumption								
Energy production (TWh)	E3.1	-1%	9.15	10.69	10.83	11.30	10.90	
Energy consumption (TWh)	E3.1	4%	48.20 ⁷⁾	46.23 ⁷⁾	53.13	53.33	51.54	302-1/302-4
Energy intensity								
Alumina refining (GJ per mt alumina)	E3.2	-9%	8.16 ⁷⁾	8.95 ⁷⁾	7.94	8.07	8.01	302-3
Electrolysis process (MWh per mt aluminum)	E3.2	2%	14.19 ⁹⁾	13.90	13.92	13.89	13.90	302-3
Other resource use								
Alumina (Thousand mt)	E4.1	2%	3,230	3,161	3,353	3,331	3,256	301-1
Total water withdrawal from water stressed areas (million m ³) ³⁾	E4.2	n/a	1.08	0.33	0.38	2.19	2.28	303-1/303-2
Recycling								
Recycled post-consumer scrap (Thousand mt) ⁴⁾	E4.3	9%	175	161	152	138	134	301-2
Total recycled metal (Thousand mt) ⁴⁾	E4.3	-3%	1,259	1,303	1,257	1,215	1,123	301-2
Waste (Thousand mt)								
Bauxite tailings	E5.1	36%	2,871 ⁷⁾	2,116 ⁷⁾	4,067	4,117	4,128	MM3
Bauxite residue (red mud)	E5.1	21%	3,871 ⁷⁾	3,191 ⁷⁾	5,979	6,426	5,973	MM3
Hazardous waste ³⁾	E5.2	4%	277	268	303	282	284	306-4
Other waste ³⁾	E5.2	26%	415	329	403	354	365	306-2
Hazardous waste to landfill (percent) ³⁾	E5.3	-1 pp ⁵⁾	27%	28%	33%	33%	33%	306-2
Biodiversity in mining								
Accumulated area disturbed (hectares) ⁶⁾	E6.2	1%	7,955	7,879	6,613	6,442	6,076	MM1
Accumulated area rehabilitated (hectares)	E6.2	6%	2,339	2,203	1,872	1,689	1,509	MM1
Accumulated endangered species observed ³⁾	E6.3	4%	93	89	75	65	57	102-11

Figures in brackets indicate a decrease.

- 1) Combined numbers based on ownership equity
- 2) Includes fully-owned smelters
- 3) 2019 figures are not comparable to historical figures due to change in methodology
- 4) Excluding Extruded Solutions
- 5) Values are given as percentage points
- 6) Accumulated area disturbed since construction of the mining area started. The mine started its production in 2006
- 7) Results impacted by the embargo on Alunorte, and curtailment of Albras and Paragominas
- 8) All GRI references below refers to the GRI Standards (2016) except MM1 and MM3 which refer to the GRI G4 Mining and Metals Sector Supplement

Notes to the environmental statements

General reporting standards and principles

Environment, energy and resource data are reported through the corporate data reporting tool HERE on an annual basis covering all consolidated operational units (defined as Hydro's ownership share exceeding 50 percent). Data reported to HERE should be based on specific environmental, energy and resource data reporting processes that have been established for management purposes at site, business unit, business area, and corporate level within Hydro. Data are reported on a 100 percent basis for all consolidated operational units if not otherwise stated. All environmental emissions include historical emissions from current operations and are recalculated annually to reflect Hydro's current portfolio, and secure comparability.

Data reported in HERE are in accordance with Hydro's corporate procedure "Registration of environment, resource and energy data". The procedure provides definitions and factors for estimating emission values. Data are compiled at each operational unit according to local environmental management systems and typically based on process data, measurements, calculations and/or purchasing data.

During 2018, Extruded Solutions' historical environmental data has been imported into HERE. We continuously strive to improve data quality and harmonize the reporting between Extruded Solutions and the other business areas in Hydro, and some figures have been updated accordingly. During 2019, we enhanced the waste reporting for sites not currently using the EU Waste Catalog.

Where applicable, we have indicated to which GRI Standards disclosure the different notes or parts of the notes are relevant.

Note E1 – Greenhouse gas emissions

Reporting principles

GHG emissions have been calculated based on the principles of the WRI/WBCSD GHG Protocol. Direct emissions from production in Bauxite & Alumina, metal production and downstream operations as well as from the remelters, are comparable to Scope 1 emissions as defined by the WRI/WBCSD GHG Protocol.

Indirect emissions, emissions from electricity generation, are calculated based on electricity consumption and emissions factors from the IEA CO₂ Emissions from Fuel Combustion (2019) and are comparable to scope 2 emissions from purchased electricity. For Hydro's Annual Report 2019 we have updated the factors back to 2015, and historical figures have been updated accordingly.

We report indirect emissions according to the location-based method in the revised GHG Protocol Scope 2 Guidance. However, we have chosen not to report indirect emissions according to the market-based approach, as this method does not give the correct picture of physical realities.

As Hydro is an integrated company, with ownership along the whole aluminium value chain, the majority of Hydro's emissions are covered within scope 1 and 2 emissions.

Hydro has a long position in alumina, but due to the production embargo at Alunorte in 2018 and 2019, we have sourced more alumina from external sources. Sourced alumina was 2.8 million metric tons in 2019 and 4.0 million mt in 2018, this compares to 2.5 million tons in 2017. As Alunorte's greenhouse gas emissions performance level is quite close to the global average, we have assumed that purchased alumina during 2018 and 2019 has a similar GHG intensity as Alunorte.

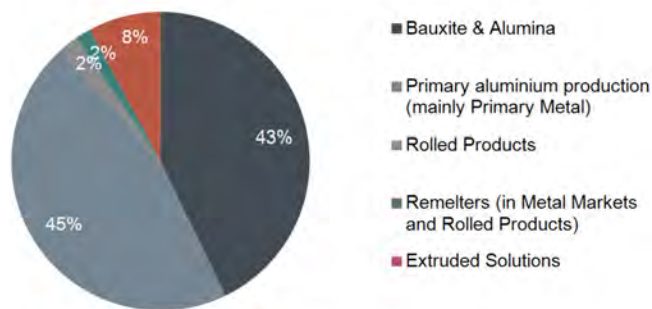
Scope 3 emissions cover other greenhouse gas emissions from e.g. external transport, purchasing of cold metal and other input materials. As part of Hydro's new climate strategy we are evaluating the size of our scope 3 emissions in order to establish targets on greener sourcing.

E1.1 Total greenhouse gas emissions in consolidated activities

Reporting principles

Greenhouse gas emissions are reported per process step. For information purposes we have indicated in which business area (financial segment) the emissions mainly take place.

Hydro's consolidated direct greenhouse gas emissions per business area



Greenhouse gas emissions - consolidated activities

Million tons CO ₂ e	2019	2018	2017	2016	2015
Direct GHG emissions	6.98	6.55	8.23	8.18	7.84
Bauxite & Alumina	2.99	2.64	4.14	4.16	3.94
Primary aluminium production (mainly Primary Metal)	3.18	3.07	3.25	3.19	3.06
Rolled Products	0.14	0.15	0.16	0.17	0.16
Remelters (in Metal Markets and Rolled Products)	0.12	0.12	0.13	0.12	0.12
Extruded Solutions ¹⁾	0.55	0.57	0.55	0.54	0.55
Indirect GHG emissions	2.70	2.72	2.96	3.17	3.32
From electricity generation (mainly primary aluminium production)	2.70	2.72	2.96	3.17	3.32
Total GHG emissions	9.68	9.27	11.19	11.35	11.16

1) Extruded Solutions has some remelters

GRI-reference: GRI Standards 305-1 (2016) and GRI Standards 305-2 (2016)

Hydro's direct and indirect emissions decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

E1.2 Total greenhouse gas emissions per country in consolidated activities

Reporting principles

Total greenhouse gas emissions per country in Hydro's consolidated activities (based on 100 percent).

Greenhouse gas emissions per country - consolidated activities

Million tons CO ₂ e	2019	2018	2017	2016	2015
Brazil	4.41	3.92	5.90	6.03	5.89
Direct	3.73	3.29	5.03	5.00	4.75
Indirect	0.69	0.63	0.88	1.04	1.14
Germany	1.52	1.68	1.67	1.71	1.72
Direct	0.44	0.50	0.49	0.50	0.48
Indirect	1.08	1.18	1.18	1.22	1.25
Norway	2.01	1.93	1.87	1.87	1.79
Direct	1.89	1.81	1.75	1.75	1.66
Indirect	0.12	0.12	0.12	0.13	0.13
Slovakia	0.73	0.72	0.72	0.73	0.74
Direct	0.31	0.32	0.32	0.32	0.32
Indirect	0.42	0.40	0.40	0.41	0.42
Other¹⁾	1.01	1.03	1.02	1.01	1.02
Direct	0.62	0.64	0.64	0.62	0.63
Indirect	0.39	0.39	0.38	0.39	0.39
Total GHG emissions	9.68	9.27	11.19	11.35	11.16

1) Including Extruded Solutions

GRI-reference: GRI Standards 305-1 (2016) and GRI Standards 305-2 (2016)

Hydro's direct and indirect emissions decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

E1.3 Direct GHG emissions per GHG type in consolidated activities

Reporting principles

CO₂ emissions are calculated based on anode consumption during the electrolysis process and use of fossil fuels. PFC (perfluorocarbon) emissions consist of the two greenhouse gases CF₄ and C₂F₆ which are formed during anode effect situations in the aluminium electrolytic cells. Anode effect is mainly a result of production instability, e.g. in connection to power outages. Emissions are calculated based on automatic process measurements.

Direct GHG emissions per GHG type - consolidated activities

Million tons CO ₂ e	2019	2018	2017	2016	2015
CO₂	6.74	6.32	8.02	7.95	7.63
PFC	0.24	0.23	0.21	0.23	0.21
Total GHG emissions	6.98	6.55	8.23	8.18	7.84

Hydro's emissions decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions. The increase in PFC emissions is mainly related to a different alumina quality due to reduced supply of alumina from Alunorte.

E1.4 Total greenhouse gas emissions based on ownership equity

Reporting principles

In addition to the GHG emissions referred to above, we also report GHG emissions based on our ownership equity as per year end. This data includes Hydro's share of emissions from all operations including non-consolidated operations where Hydro has a minority interest. This figure is comparable to scope 1 according to the GHG protocol. Electricity generation covers indirect GHG emissions from purchased electricity and emissions from Hydro's ownership share in the gas-fired power plant at Qatalum. This figure is comparable to scope 2 according to the GHG protocol. Emissions from electricity generation are based on electricity consumption and IEA CO₂ emissions from Fuel Combustion 2019 factors for indirect emissions.

Greenhouse gas emissions - ownership equity

Million tons CO ₂ e	2019	2018	2017	2016	2015
Direct GHG emissions	7.41	7.05	8.48	8.49	8.17
Bauxite & Alumina	2.75	2.43	3.81	3.83	3.62
Primary aluminium production (mainly Primary Metal)	3.72	3.64	3.70	3.69	3.58
Rolled Products	0.28	0.29	0.30	0.31	0.30
Remelters (mostly Metal Markets)	0.12	0.12	0.13	0.12	0.12
Extruded Solutions	0.55	0.57	0.55	0.54	0.55
Indirect GHG emissions	5.33	5.37	5.31	5.51	5.59
Electricity generation (mainly primary metal production)	5.33	5.37	5.31	5.51	5.59
Total GHG emissions	12.74	12.42	13.80	14.01	13.76

GRI-reference: GRI Standards 305-1 (2016) and GRI Standards 305-2 (2016)

Hydro's production based on ownership equity can be found in Hydro's results for fourth quarter 2019.

Hydro's direct and indirect emissions decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

E1.5 Total greenhouse gas emissions per country based on ownership equity

Reporting principles

Total greenhouse gases per country based on Hydro's ownership equity (see note E1.4 for more information on reporting principles).

Greenhouse gas emissions per country - ownership equity

Million tons CO ₂ e	2019	2018	2017	2016	2015
Australia	0.92	0.92	0.90	0.91	0.91
Direct	0.15	0.15	0.14	0.14	0.15
From electricity generation	0.77	0.78	0.76	0.77	0.76
Brazil	3.53	3.13	4.75	4.85	4.68
Direct	3.14	2.77	4.26	4.27	4.04
From electricity generation	0.39	0.36	0.49	0.59	0.64
Canada	0.51	0.49	0.50	0.50	0.52
Direct	0.25	0.25	0.26	0.25	0.26
From electricity generation	0.26	0.24	0.24	0.25	0.26
Germany	1.78	1.95	1.95	1.99	2.00
Direct	0.57	0.64	0.63	0.63	0.61
From electricity generation	1.21	1.31	1.31	1.35	1.39
Norway	2.01	1.93	1.87	1.87	1.79
Direct	1.89	1.81	1.75	1.75	1.66
From electricity generation	0.12	0.12	0.12	0.13	0.13
Qatar¹⁾	2.55	2.53	2.37	2.43	2.40
Direct	0.58	0.59	0.59	0.62	0.61
From electricity generation	1.96	1.94	1.78	1.81	1.79
Slovakia	0.41	0.40	0.40	0.40	0.41
Direct	0.17	0.18	0.18	0.18	0.18
From electricity generation	0.23	0.22	0.22	0.23	0.23
Other	1.04	1.07	1.06	1.06	1.05
Direct	0.66	0.67	0.67	0.67	0.65
From electricity generation	0.38	0.39	0.39	0.39	0.39
Total GHG emissions	12.74	12.42	13.80	14.01	13.76

1) Most electricity at Qatalum is generated by Qatalum's fully-owned gas power plant. 0.075 million tons CO₂e came from net purchased electricity from the national grid in 2019

GRI-reference: GRI Standards 305-1 (2016) and GRI Standards 305-2 (2016)

Hydro's direct and indirect emissions decreased significantly in 2018 due to the embargo at Alunorte and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

E1.6 GHG intensity – Alunorte alumina refinery

Reporting principles

The GHG intensity is calculated based on total greenhouse gas emissions from Alunorte divided by total alumina production. All alumina refining in Hydro is included.

E1.7 GHG intensity – Electrolysis

Reporting principles

The GHG intensity is calculated based on greenhouse gas emissions from the electrolysis process from Hydro's smelters in the business area Primary Metal. This is an operational target that excludes extraordinary emissions, e.g. during start-up of curtailed capacity. The methodology for calculation is site specific, and historical figures may be subject to change. Emissions from the primary aluminium smelter Neuss in Germany, organized in the business area Rolled Products, are not included. As the GHG emissions from Neuss are at the average, they will not have a significant impact on the overall figure.

Note E2 – Other emission related indicators

E2.1 Other emissions

Reporting principles

Dust and particles include measured and estimated stack emissions and roof emissions from electrolysis. Other diffuse emissions are not included.

Fluorides cover emissions to air of gaseous and particulate fluorides from production of primary aluminium.

NM VOC (non-methane volatile organic compounds) emissions to air stem primarily from Rolled Products and Extruded Solutions.

PAH (poly-aromatic hydrocarbons) to air is primarily from anode production. Emissions are monitored according to PAH-16 US EPA or NS 16 PAH to air and water.

Sulfur dioxide to air is primarily from the use of coal as an energy source in Alunorte, Brazil, and from the aluminium electrolysis process where the majority of the total emissions come from Albras in Brazil, Neuss in Germany and Slovalco in Slovakia. SO₂ emissions from the Norwegian smelters are considerably lower due to different waste gas treatment techniques used at these plants.

Other Emissions					
Metric tons	2019	2018	2017	2016	2015
Dust and particles	3,263	2,864	4,783	4,347	5,101
Fluorides to air	824	663	700	684	742
NM VOC	426	430	475	472	524
Nitrogen oxide	8,299	7,753	9,792	9,671	9,387
PAH to air ¹⁾	16	14 ²⁾	8	8	8
PAH to water ¹⁾	2	3 ²⁾	-	1	1
Sulphur dioxide (SO ₂)	24,788	18,494	32,968	33,343	30,177

GRI-reference: GRI Standards 305-7 (2016)

1) Excluding PAH emissions from Albras

2) Significant change due to Sunndal changing from NS 16 PAH and Borneff 6 PAH to US EPA PAH-16

Hydro's emissions of dust and particles, nitrogen oxides and sulphur dioxide decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

The increase in emissions of fluorides to air is due to the ramp-up of production at Albras, and is consistent with the process.

Hydro uses ozone depleting substances in certain applications in its Brazilian operations, and to some extent also in Extruded Solutions. In 2019, Hydro used in total 6.2 metric tons of such substances in its operations. The reported value corresponds to the purchased amount of such substances and can vary significantly according to the need of refilling existing cooling devices. In Brazil, such substances are registered and reported according to Brazilian legal requirements (GRI 305-6). In Extruded Solutions, hydrochlorofluorocarbon (HCFC) accounts for around one third of ozone depleting substances.

Methane (CH₄) and N₂O emissions from Hydro's operations are negligible compared to the other GHG emissions. The emissions of mercury to air has been calculated to be around 3 metric tons at full production.

E2.2 Spillages and leakages

Reporting principles

Spillages and leakages to the external environment (ground, water or air) are registered in Synergi and in IMS, the reporting tools for incidents regarding health, safety, security and environment. According to Hydro's definition, any incident resulting in a spill or leak shall be reported, including significant spillages with short-term reversible damage. Leakages categorized as high severity, i.e. uncontained but reversible impact or uncontained and irreversible impact, and emissions to external environment categorized as high severity, i.e. unintended and sustained, are reported in the table below. A spillage or leakage can be reclassified according to changes in the actual consequence of the spillage or leakage, and historical figures are updated. Several reported incidents can be closely related and therefore classified as the same spillage.

Following a harmonization of reporting on environmental incidents and permit breaches between Extruded Solutions and other business areas in Hydro, we identified a difference in the severity of cases being included. This has been adjusted for in the reporting for 2019.

Spillages and leakages to the external environment

	2019	2018	2017	2016	2015
Spillages, leakages	1	7 ¹⁾	1	3	-

1) The reported incidents mainly relate to leakages to air in Norway

One is an onsite leakage of inert tailings (400m³) at Paragominas, between the beneficiation area and tailings storage facility. The impact was reversible. There was an accident at the port area in Barcarena, where the caustic soda pipeline was damaged by a truck driver working for a different company. The pipeline was not in use, but the residual caustic soda in the pipe was released into the Para River. Alunorte performed an investigation, in coordination with the authorities, and found no lasting impact on the river. This incident was not our responsibility and we acted beyond our legal obligation to assist the authorities, and thus not included in the statistics above.

Ibama (Brazilian Institute of the Environment and Renewable Natural Resources) and Semas (the Secretary of State for Environment and Sustainability in Pará) concluded there were no overflow or leaks from Alunorte's bauxite residue deposits following the heavy rainfall in February 2018. For more information see the section "The Alunorte situation" in Hydro's Annual Report 2018.

E2.3 Permit breaches

Reporting principles

Permit breaches are based on monthly monitoring, and reported in Synergi and IMS. Hydro's definition of permit breaches, any incident that in any way relates to an environmental permit, is in certain cases more strict than the legal definition. Permit breaches categorized as high severity, requiring regulator contact or permit breaches with possible fine or suspension, are included in the table below. The reported permit breaches may be related to spillages and leakages covered in the table above. Several reported incidents can be related to the same permit and will be reported as one breach. Historical figures may be subject to change due to time lag in administrative procedures.

Following a harmonization of reporting on environmental incidents and permit breaches between Extruded Solutions and other business areas in Hydro, we identified a difference in the severity of cases being included in the report. This has been adjusted for in the reporting for 2019.

Permit breaches

	2019	2018	2017	2016	2015
Permit breaches	1 ¹⁾	23	25 ²⁾	1	-

1) Figures for 2019 are not comparable to previous years due to harmonization of definitions between Extruded Solutions and the other business areas in Hydro.

2) Figures from Extruded Solutions, acquired 2 October 2017, are included for the full year.

In January 2020, the Oregon Department of Environmental Quality (ODEQ) issued a 1.3 MUSD civil penalty against Hydro for air permit violations at Extruded Solution's The Dalles, Oregon cast house. The allegations include the processing of "unclean" scrap, failing to monitor/inspect scrap, using improper calculations, exceeding emission limits for flux additions, and improper recordkeeping. Hydro has commenced an externally-supported investigation, which remains underway, and has begun remedial actions.

The 2018 figure also includes in total four permit breaches in Bauxite & Alumina of which three at Alunorte: the use of Canal Velho; rainwater from the roof of a coal shed; and the leakage through a disused pipe. For more information see the section "The Alunorte situation" in Hydro's Annual Report 2018.

E2.4 Provisions for environmental clean-up and future asset retirement obligations

Reporting principles

When Hydro, at acquisition of an asset or start of a business activity, has an obligation to remove, dismantle or remediate the asset or site used, that obligation is included in the cost of the asset with the present value of estimated remediation costs. The same treatment is applied if an obligation to remove, dismantle or remediate the asset is introduced at a later date, through new legislation or other means. For Hydro's accounting policy for provisions and asset retirement obligations, see note 4.1 Uncertain assets and liabilities to the consolidated financial statements.

Note E3 – Energy

E3.1 Energy consumption and energy production

Reporting principles

Energy consumption includes Hydro produced as well as purchased energy in Hydro's consolidated activities. Hydro has a nominal production of 10 TWh hydroelectric power. Hydro's business areas, except from Extruded Solutions, does not purchase heating, cooling or steam, which is produced internally and is reported as "other" energy consumptions. Extruded Solutions purchases steam and heat, but the volumes are minimal. Energy consumption includes energy losses in hydroelectric plants.

Energy consumption per energy carrier - consolidated activities

PJ	2019	2018	2017	2016	2015
Coal	13.4	13.2	15.2	15.2	13.5
Coke	17.3	17.3	18.5	18.7	18.5
Electricity	100.4	98.3	103.7	104.3	100.4
Gasoline	-	0.1	0.1	0.2	0.4
Natural gas	16.3	16.5	16.8	16.3	16.0
Natural gas liquids	1.9	1.8	1.6	1.8	1.6
Oil	19.1	15.0	30.7	30.9	30.7
Other	5.1	4.3	4.5	4.5	4.4
Total energy consumption in PJ	173.5	166.4	191.3	192.0	185.6
Total energy consumption in TWh	48.2	46.2	53.1	53.3	51.5

Energy consumption per sector - consolidated activities

PJ	2019	2018	2017	2016	2015
Bauxite & Alumina	35.5	30.2	48.2	48.9	46.4
Electrolysis/Carbon/Casting	116.0	114.0	120.7	121.2	117.6
Remelters	2.4	2.6	2.7	2.6	2.5
Rolled Products	4.2	4.0	4.3	4.3	4.3
Extruded Solutions	15.2	15.4	15.1	14.7	14.6
Other	0.2	0.2	0.2	0.2	0.3
Total energy consumption	173.5	166.4	191.3	192.0	185.6

Energy consumption per country - consolidated activities

PJ	2019	2018	2017	2016	2015
Brazil	61.5	54.0	81.3	81.2	78.3
Germany	15.4	16.6	16.9	16.8	16.5
Norway	67.5	66.7	64.0	65.5	62.6
Slovakia	12.8	12.5	12.5	12.5	12.3
Other ¹⁾	16.2	16.5	16.6	16.1	15.9
Total energy consumption	173.5	166.4	191.3	192.0	185.6

GRI Reference: GRI Standards 302-1 (2016)

Hydro's energy consumption decreased significantly in 2018 due to the embargo at Alunorte, and curtailment at Albras and Paragominas. This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production. The ramp-up of the Karmøy Technology Pilot has also contributed to an increase in emissions.

E3.2 Energy intensity*Reporting principles*

Energy intensity in Alunorte is calculated based on total energy consumption in Alunorte divided by total alumina production.

Energy intensity in Hydro's consolidated smelters is direct current consumption in the electrolysis process per kg aluminium.

Note E4 – Other resource use**E4.1 Materials***Reporting principles*

This covers major raw materials used in the alumina refining process and electrolysis process beyond what is included in the energy consumption data.

Alumina and aluminium fluoride are primarily used in the electrolysis process, whilst lime, caustic soda (NaOH), sulfuric acid and flocculants are primarily used in the alumina refining process. Flocculants are also used at Paragominas.

The use of lime, caustic soda and sulfuric acid varies with the production of alumina, see note E7. The use of sulfuric acid depends also on the amount of rainfall and management of caustic soda at Alunorte.

Materials

1 000 metric tons	2019	2018	2017	2016	2015
Alumina	3,230	3,161	3,353	3,331	3,256
Aluminium fluoride	33	31	31	32	33
Lime	40	35	62	60	57
Caustic soda	436	353	662	653	604
Sulphuric acid	22	29	28	26	17
Flocculants	4	3	7	6	5

GRI Reference: GRI Standards 301-1 (2016)

E4.2 Water

Reporting principles

Some water loss to the external environment will occur as evaporation and/or steam. This water loss is not included in the figures below, which assume that water discharged is equal to water withdrawn. The quality of fresh-water discharge generally complies with local or site-specific permits before discharge to local water recipients and is of a high quality, as per ICMM's definition.

The majority of Extruded Solutions' sites have a closed loop water management system, and the water use is marginal compared to the rest of Hydro. The majority of water use in Extruded Solutions takes place in Oregon in USA, and in Sweden.

Total water withdrawal by country

million m ³	2019	2018	2017	2016	2015
Brazil	47.24 ¹⁾	49.97	35.85	33.28	32.80
Germany	2.42	2.31	2.25	2.13	2.20
Norway	204.70	204.90	177.95	179.07	179.78
Other	10.91	10.69	10.57	6.74	5.92
Total	265.27	267.88	226.62	221.22	220.70

1) Includes 21.92 million m³ of rainwater not used in the process, but it is treated and discharged. Alunorte has improved the monitoring of rainwater, and the figure may not be comparable to historical figures. The figure varies with precipitation.

Total water withdrawal by source

Million m ³	High quality	Low quality	Total 2019	Brazil	Germany	Norway	Other	Total 2018
Surface water (fresh water)	48.52	6.14	54.66	15.33	-	34.71	4.62	55.82
Surface water (sea water)	6.82	162.06	168.87	-	-	168.87	-	168.57
Ground water	11.50	0.18	11.68	9.96	1.49	-	0.24	12.65
Municipal water	6.06	1.65	7.71	0.03	0.68	1.11	5.88	6.91
Rain water	22.17	0.14	22.31	21.92 ¹⁾	0.25	-	0.14	23.90
Total water withdrawal	95.07	170.17	265.24	47.24	2.42	204.70	10.88	267.85

1) Includes 21.92 million m³ of rainwater not used in the process, but it is treated and discharged. Alunorte has improved the monitoring of rainwater, and the figure may not be comparable to historical figures. The figure varies with precipitation.

GRI-reference: GRI Standards 303-3 (2018)

Almost 80 percent of Hydro's total water withdrawal occurs in Norway from fjords (sea water) and rivers (fresh water) that supply these fjords. These water sources are vast and are not significantly affected by Hydro's operations. All sea water withdrawal in Norway is used in fume treatment plants enabling the primary production smelters to clean dust, SO₂ and fluoride emissions to air. Sea water absorbs the pollutants and mitigates the environmental impact from the production process. Around 6 percent of Hydro's total water withdrawal comes from the Parariquara river in Brazil and is used to supply the mine in Paragominas. Based on new hydrological studies of the Parariquara river, Paragominas' water extraction permits were revised in 2018. However, water collection can still be an issue if a new third-party user requests water extraction from the same watershed. If so, a new license will be needed for an additional extraction point.

There has been a water tax within the state of Pará since 2015.

The GRI Standard 303-3 was updated in 2018, and since then reused water is not a reporting requirement. Hydro's reporting is updated accordingly.

Withdrawal from water-stressed areas

Million m ³	2019	2018	2017	2016	2015
Total water withdrawal from water-stressed areas ¹⁾	1.08	0.33	0.38	2.19	2.28

GRI reference: GRI Standards 303-3 (2018)

1) 2019 figures are not comparable to historical figures due to change in methodology

From 2019, Hydro uses the WRI Aqueduct tool to analyze water withdrawal from water stressed areas, and historical data may not be comparable. Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. Areas categorized as high and extremely high with regard to water stress is included in the figure above.

Total water discharge by destination

Million m ³	High quality	Low quality	Total 2019	Brazil	Germany	Norway	Other	Total 2018
River (surface water)	30.59	21.45	52.04	30.51	0.04	18.05	3.44	50.54
Seawater	9.21	193.62	202.82	-	-	202.82	-	203.00
Sewage (third-party water)	2.32	3.25	5.57	0.03	0.13	0.43	4.97	4.80
Cooling water to river	1.69	1.10	2.79	-	1.52	0.04	1.23	3.28
Other (not specified)	10.58	8.67	19.25	16.25	0.46	1.25	1.28	19.23
Total water discharge by destination	54.38	228.08	282.46	46.80	2.15	222.60	10.92	280.85

GRI Reference: GRI Standards 303-4 (2018)

E4.3 Recycling*Reporting principles*

Hydro uses a definition for recycling agreed on by the European Aluminium Association. The definition was implemented in Hydro in 2013. The definition divides recycled scrap in two: process scrap, which includes pre-consumer scrap from downstream casthouses, and post-consumer scrap. Reporting of recycling data is drawn from the company's production software and ERP system.

The numbers include Hydro's share of scrap recycled by Alunorf, Germany (owned 50 percent), and also Hydro's share of pre-consumer scrap from Qatalum and Slovalco. Qatalum and Slovalco do not have recycling facilities for post-consumer scrap.

Recycling - excluding Extruded Solutions

1 000 metric tons	2019	2018	2017	2016	2015 ¹⁾
Recycled post-consumer scrap	175	161	152	138	134
Recycled pre-consumer scrap	1,084	1,142	1,105	1,078	990
Total recycled metal	1,259	1,303	1,257	1,215	1,123

1) Volumes from Slim (divested at year-end 2015).

While Extruded Solutions uses significant amounts of remelted pre-consumer scrap, we are still lacking an overview that is comparable with Hydro's definitions. In 2019, Extruded Solutions remelted in total 900,000 tons of external scrap of which an estimated 20 percent was post-consumer scrap. This comes in addition to the figures in the table above.

Note E5 – Waste

Note E5.1 Tailings and bauxite residue

Reporting principles

Tailings from bauxite extraction consist of mineral rejects from the extraction process mixed with water. The tailings at Paragominas are stored in dedicated tailings dams, where the particles settle. Paragominas is Hydro's only consolidated mine.

Bauxite residue, also known as red mud, is a by-product of the alumina refining process. The residue is washed with water to lower the alkalinity, and recovered caustic soda is recycled for use in the production process. Residue is dry-stacked as a claylike substance with a low moisture content (for more information 39).

Tailings and bauxite residue					
1 000 metric tons ¹⁾	2019	2018	2017	2016	2015
Tailings	2,871	2,116	4,067	4,117	4,128
Bauxite residue (red mud)	3,871	3,191	5,979	6,426	5,973

1) On a dry basis

GRI Reference: G4-MM3

The significant decrease in 2018 is due to the Alunorte embargo (bauxite residue) and the corresponding Paragominas curtailment (tailings). This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production.

The tailings generated in the bauxite's beneficiation process have no hazardous chemical properties, thus it is not necessary to line the tailing dams.

As a control measure, static water pressures within the walls of our tailings dam at Paragominas are monitored through the use of dedicated instrumentation (piezometers).

E5.2 Hazardous waste and other waste

Reporting principles

Waste is reported as specified according to the EU waste directive/waste catalog. During 2015 and 2016, Primary Metal reviewed their waste reporting practices including classification of bi-products, resulting in even better standardization across production sites. Due to changes in reporting practice, the 2016 and 2015 figures are not directly comparable to previous years. Also in Bauxite & Alumina waste reporting was improved in 2016 and 2015. Figures from earlier years are not comparable, and are thus not included.

All sites in Extruded Solutions report according to the EU waste catalog from 2019. Compared to last year, data quality on waste figures has improved, and is expected to improve further going forward.

Spent potlining (SPL) from the electrolysis cells used in primary aluminium production is defined as hazardous waste. The production of SPL varies with the relining of smelter cells which is normally done every 4-7 years for established smelters. New plants will get a relining peak at the same interval after start-up. See also SPL figures on a five year rolling average under the section on Environment under Primary Metal, page 45.

A significant amount of Extruded Solutions hazardous waste is in the form of spent caustic resulting from the die cleaning process with a large proportion of this being recycled.

Hazardous and other waste					
1 000 metric tons	2019	2018	2017	2016	2015
Spent potlining	55.9	42.5	40.4	34.2	42.3
Other hazardous waste	221.1	225.2	262.9	247.9	242.1
Total hazardous waste	277.0	267.6	303.3	282.0	284.4
Other waste	415.0	329.5	402.5	354.4	364.7
Total waste	692.0	597.1	705.8	636.5	649.1

GRI Reference: GRI Standards 306-4 (2016)

E5.3 Waste treatment

Reporting principles

Waste sorted by treatment includes external and internal treatment. Tailings and bauxite residue are deposited in appropriately engineered and managed on-site landfills and are not included in the table below. Combustion without energy recovery is included under Other treatment.

Treatment of hazardous waste	2019	2018	2017	2016	2015
Energy recovery	7%	8%	7%	7%	9%
Landfill	27%	28%	33%	33%	33%
Other	25%	26%	21%	20%	21%
Reuse/recycling	40%	38%	39%	40%	38%

Treatment of other waste	2019	2018	2017	2016	2015
Energy recovery	4%	4%	4%	3%	3%
Landfill	43%	27%	45%	37%	43%
Other	11%	16%	14%	19%	17%
Reuse/recycling	42%	53%	37%	41%	37%

GRI-reference: GRI Standards 306-2 (2016)

Note E6 – Biodiversity

E6.1 Overburden moved

Reporting principles

Total volume (in metric tons) of overburden moved in Hydro's mine in Brazil, Paragominas. This is the only mine within Hydro's consolidated operations.

Overburden moved	2019	2018	2017	2016	2015
Million metric tons					
Overburden moved	45	48	83	83	70

GRI Reference: G4-MM3

The volume reduction in 2019 and 2018 is due to the curtailment in Paragominas.

Hydro uses strip mining in Paragominas, a technique that avoids the formation of an overburden stockpile. Thus, all overburden moved for mining purpose is used to reconstruct the topography of the strip previously mined, prior to rehabilitation of the mined areas. Part of the overburden (laterite) is also used for paving roads and for raising the heights of existing tailing dams and constructing new ones.

The sterile soil is untreated and has no dangerous properties. Leaching potential due to overburden removal is negligible. There is a water resource management program in place to mitigate silting from the plateau areas.

E6.2 Land use and rehabilitation

Reporting principles

Hydro's only consolidated mining operation is in Paragominas in Brazil. Areas are measured using the ArcGIS Platform. The rehabilitation data are reported to ANM (the Brazilian National Mining Agency) and Semas (the Secretary of State for Environment and Sustainability in Pará), as part of the clearing permit renewal process.

In our mining operation we strive for a year-on-year balance between the area that we mine and make available for rehabilitation every year and the area that we succeed in rehabilitating every year. From 2018, this target is a rolling average across two hydrological seasons, and the categories for land-use have been redefined.

The mining cycle is made up of several steps. When a given area of land is to be developed, the first step is clearing, when vegetation and soil are removed. The area is then classified as area cleared for future mining. After an area is mined, it is either classified as tailings dams and other mining infrastructure or area available for rehabilitation. All areas available for rehabilitation will be rehabilitated as soon as possible and subsequently classified as an ongoing rehabilitation area.

When tailings dams are closed, they will become available for rehabilitation after settling for minimum five years. We will then get a significant increase in the tailings dam infrastructure available for rehabilitation. There may be additional movements between different statuses from year to year due to reclassification.

During 2019, we cleared 346 hectares (ha) for future mining. We mined 215 ha of which 124 ha were then dedicated to mining infrastructure. As a result, a total of 84 ha were mined and subsequently made available for rehabilitation during 2019. This area must be completely rehabilitated by the end of 2021 in order to meet the 1:1 rehabilitation target.

Of the 151 ha made available for rehabilitation in 2017, 88 percent was rehabilitated in 2018. The remaining 12 percent was completed in 2019, and we met the 1:1 rehabilitation target. Of the 113 ha that were made available for rehabilitation in 2018, 98 percent were rehabilitated in 2019, and the remaining two percent need to be rehabilitated in order to reach the 1:1 rehabilitation target for 2020.

The clearing, mining and rehabilitation cycles are constantly ongoing and are not synchronized. Clearing and mining are at their peak in the dry season, whilst rehabilitation happens primarily in the wet season. The three cycles are also influenced by different drivers such as permits for the clearing cycle, land available for rehabilitation, and rainfall for the rehabilitation cycle. As a result, there is no direct link between the area cleared each year and the area mined or rehabilitated that same year (e.g. an area cleared in 2017 may be mined late 2018 and then rehabilitated in the 2019 wet season). Due in large part to this complexity, the figures presented above for 2018 and 2019 can not be directly deducted from the figures in the land use and rehabilitation table below.

All areas stated in the table below give a snapshot of Paragominas' land use at year end.

Land use and rehabilitation - Paragominas

Hectares given per point in time	2019	2018	2017	2016	2015
Permanent infrastructure ¹⁾	2,397	2,397	2,447	2,446	2,447
Tailings dam and other mining infrastructure ¹⁾	2,472	2,472	1,918	1,705	1,397
Area cleared for future mining	346	380	257	364	424
Ongoing rehabilitation areas ¹⁾	2,339	2,203	1,872	1,689	1,509
Rehabilitation gap	317	296	111	238	299
Historical gap ²⁾	-	-	8		
Mined area available for rehabilitation	84	131			
Total area affected	7,955	7,879	6,613	6,442	6,076

1) The definition is updated, and historical data may not be comparable

2) The historical rehabilitation gap refers to the one inherited from Vale. Historical figures are not available

GRI Reference: G4-MM3

The rehabilitation gap is a result of ongoing operations, i.e. areas set aside for infrastructure being reclassified, or missed/failed/poor previous rehabilitation. For 2018, 170 ha were reclassified as failed rehabilitation, and 105 ha of former infrastructure became available for rehabilitation.

The Hydro Paragominas property measures in total 18,763 hectares (ha), while the land use at the end of 2019 was 7,955 ha, including 2,339 ha under rehabilitation.

There are specific closure plan requirements for the Paragominas mine (rehabilitation of mine and tailings ponds). In addition, there is a similar requirement for the bauxite residue disposal areas at Alunorte. Hydro has a dedicated corporate function which oversees legacy issues and addresses closure issues. For the time being such plans are further developed on an ad hoc basis when relevant, and a strategy is under development.

E6.3 Endangered species

Reporting principles

Hydro uses a federal database updated by ICMBio researchers to classify species. The conservation status of species registered in the reference databases can change. As a result, the species list is updated and species added, removed and/or moved from one status to another. Reported species are cumulative and represent all species observed within the premises of Hydro's mining activities in Paragominas, Brazil, since monitoring and registration started in 2003. Some species included in the overview are covered by more than one database and the numbers can therefore not be summed across the columns. In addition, each database is stand alone and they are therefore not comparable.

Endangered species registered within the influence area of Hydro's mining activities (Paragominas)

Conservation status	MMA ¹⁾		Semas ²⁾		IUCN ³⁾	
	Fauna	Flora	Fauna	Flora	Fauna	Flora
Critically endangered	3	2	2	1	2	1
Endangered	8	1	9	-	3	1
Vulnerable	27	2	9	8	17	15
Threatened	-	-	-	-	-	-
Near threatened	1	1	-	-	15	2
Data deficient	1	-	-	-	3	1
Total according to each red list classification	40	6	20	9	40	20

1) Federal Brazilian red list

2) Pará state red list

3) International Union for Conservation of Nature red list

GRI-reference: GRI Standards 304-4 (2016)

In total 89 different species, including 62 fauna and 27 flora, are covered by the overview. The total number increased by 14 in 2018, mainly due to the research effort by the Biodiversity Research Consortium Brazil-Norway, see page 90. We are expecting the number of new, unique species to increase going forward as we move into new territory.

Note E7 – Production volumes

Reporting principles

The figures reported below are total production volumes (100 percent) from consolidated activities only (Hydro's ownership share exceeding 50 percent). Alumina production includes Alunorte while primary aluminium production includes 100 percent of production at all Hydro's primary aluminium plants in Norway, Neuss in Germany, Slovalco in Slovakia and Albras in Brazil. These volumes are not directly comparable to the volumes reported in the financial statements. Alumina and primary aluminium production are by far the most energy and GHG intensive processes in Hydro.

Production volumes	2019	2018	2017	2016	2015
1 000 metric tons					
Alumina production	4,487	3,712	6,397	6,341	5,962
Primary aluminium production	1,675	1,653	1,752	1,744	1,705

Production volumes decreased significantly in 2018 due to the embargo at Alunorte (alumina), and curtailment at Albras (primary aluminium). This is partly reversed in 2019 due to lifting of the embargo and ramp-up of production.

Hydro's production based on ownership equity can be found in Hydro's results for fourth quarter 2019.

Note E8 – Environmental data for 50/50-owned companies

Hydro has an ownership share of 50 percent in Alunorf and Qatalum. As only operations owned more than 50 percent are included in most of the information in Hydro's viability performance statements, we have chosen to disclose certain environmental information about these companies and their performance. The reporting principles of each indicator might differ from the ones used by Hydro and in between the companies. For information about social data, see Note S14 to the social statements.

Environmental data for 50/50-owned companies

	Main product	Production, 1 000 metric tons	GHG emissions, scope 1, Million tons CO ₂ e	GHG emissions, scope 2, Million tons CO ₂ e	Total energy consumption, TWh	Fresh water used, Million m ³	Total waste disposed, metric tons	Total waste recycled, 1 000 tons
Alunorf	Rolled products	1,540 ¹⁾	0.26	0.43	2.07	1.37	1,891	88% ²⁾
Qatalum	Primary aluminium	627	4.9	0.15	9.33	0.58 ³⁾	9543 ³⁾	32% ³⁾

1) The tonnage at Alunorf includes 13.9 mt of sheet ingots

2) Recycling degree of total waste

3) 2018 figures

Social statements

The table below shows Hydro's main indicators related to social performance. For geographical distribution of total assets, investments and revenues, see note 7 to the consolidated financial statements.

Social performance

	Notes	% change 2017-18	2019	2018	2017	2016	2015	GRI Standards reference
<i>Employees</i>								
Number of permanent employees	S1.1	0%	36,310	36,236	34,625	12,911	13,263	102-7 (2016)
Share of women	S1.1	-1)	18%	18%	17%	14%	13%	
Number of temporary employees ²⁾	S1.2	-2%	1,647	1,680	1,646	1,266	1,144	102-8 (2016)
Women in top 50 management	S3.1	-1 pp ¹⁾	32%	33%	28%	29%	30%	405-1 (2016)
Non-Norwegians in top 50 management	S3.1	-2 pp ¹⁾	37%	39%	37%	32%	36%	405-1 (2016)
Full-time equivalents for contractor employees	S1	17%	12,265	10,500	9,000	9,500	7,700	102-8 (2016)
New employees	S1.3		4,466	5,141	760 ⁴⁾	658	884	401-1 (2016)
Turnover	S1.3	1 pp ¹⁾	13%	12%	4%	5%	5%	401-1 (2016)
Hydro Monitor Employee Engagement Index	S4		N/A	84%	N/A	83%	N/A	
Payroll (NOK million)	S1.1		19,005	17,318	7,258 ⁴⁾	6,681	6,323	201-1 (2016)
<i>Health and safety</i>								
Sick leave	S5.1	0.1 pp ¹⁾	3.7 %	3.6 %	3.4 %	4.3 %	4.0 %	403-2 (2018)
Total recordable injuries (TRI) rate ³⁾	S5.1	-11%	3.0	3.4	2.9	2.6	3	403-2 (2018)
Employees		-5%	3.3	3.5	3.1	2.6	3	
Contractors		-28%	2.2	3	2.5	2.6	3.1	
Number of fatal accidents	S5.1		⁵⁾	1	2	-	1	403-2 (2018)
Employees			-	1	1	-	1	
Contractors			-	-	1	-	-	
High risk incidents	S5.2	-3%	195	202	127	63	83	403-2 (2018)
Occupational illness rate ⁴⁾	S5.3	-60%	0.2	0.5	0.3	0.7	1	403-3 (2018)
Current income tax (NOK million)	S7	-44%	1,512	2,724	2,575	1,988	1,414	
<i>Research and Development (NOK million)</i>								
R&D funds received ⁴⁾	S8	3%	36	35	62	46	51	201-4 (2016)
R&D expenses	S8	5%	625	594	500	370	330	
<i>Social investments</i>								
Community investments, charitable donations and sponsorships (NOK million) ⁴⁾	S9	-34%	59	89	36	28	30	
<i>Compliance</i>								
Cases reported through AlertLine	S10.1		347	342	302	173	83	102-3 (2016)
Substantiated instances of corruption	S10.1		2	1	-	-	-	205-3 (2016)
Significant human rights breaches	S10.1		-	-	-	-	-	406-1/407-/408-1/409-1 (2016)
Relocation of people	S10.3		-	-	-	-	-	G4-MM9
Training in business ethics Hydro	S10.4	n/a	24,481⁶⁾	3,490	3,331 ⁴⁾	4,561 ⁴⁾	2,244 ⁴⁾	412-2/205-2 (2016)
Training in competition law	S10.4	32%	1,106	838	293	202	1,093	205-2 (2016)
Supplier audits	S10.5	18%	98	83	109	123	129	HDD-01
Potential and existing counter parties screened	S10.5	40%	18,172	13,000	6,200	3,700	1,800	414-1 (2016)

1) Values are given as percentage points compared to previous year

2) There may be uncertainties related to data from Extruded Solutions, please see section on Uncertainties related to data from Extruded Solutions in About the reporting

3) Per million working hours. The numbers include discontinued operations

4) Excluding Extruded Solutions

5) Contractor fatality in 50/50 JV managed by Qatalum

6) Includes class room and e-learning training on anti-corruption, code of conduct, data privacy, and sanctions and trade compliance

Notes to the social statements

General reporting standards and principles

Data relating to occupational health and safety have been prepared by individual reporting units in accordance with corporate procedures. This applies to all Hydro's operations, including consolidated subsidiaries, if not otherwise stated. Such data are based on the corporate reporting system for incident reporting, IMS and Synergi. The units report incidents to the systems on a regular basis in accordance with a corporate procedure on HSE incidents and sick leave data. Employee data are reported based on Hydro's SAP system.

The reporting methodology will follow Hydro's principles, unless otherwise stated.

Where applicable, we have indicated to which GRI Standards disclosure the different notes or parts of the notes are applicable. Please also see the social statements on the previous page for more such information.

Note S1 – Employees

Reporting principles

Data for Hydro's permanent and temporary employees are based on Hydro's human resources SAP system. Data presented represent status at year end, December 31. Payroll is based on Hydro's consolidated financial statements. Payroll, as provided in the table below, does not include pension costs.

Temporary employees include among others apprentices, but exclude contractor employees. Legal requirements and customs may vary from country to country, making direct comparison difficult.

Number of full-time equivalents of contractor employees as included in the social statements is estimated based on the total hours worked by contractor employees (reported in Hydro's incident reporting system Synergi and IMS as basis for calculation of injury frequency) divided by 1,850 working hours per year. Contractor employees represented in total about 12,265 full-time equivalents during 2019. The majority relates to Hydro's Bauxite & Alumina activities.

Extruded Solutions has a greater extent of seasonal variations than the other business areas in Hydro. This is solved in different ways in different parts of the organization and may include the use of agency workers. We still do not have the full overview of the extent of such use.

S1.1 Permanent employees by region, gender and age as well as payroll

Permanent employees by region, gender and payroll

	Number of employees ¹⁾					Payroll (NOK million) ^{2) 3)}				
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
Norway	4,103	4,050	3,962	3,689	3,653	3,684	3,591	3,220	3,001	2,920
Women	21%	21%	20%	19%	19%					
Men	79%	79%	80%	81%	81%					
Germany	4,967	4,909	4,861	3,555	3,450	4,307	3,265	2,256	2,201	2,040
Women	13%	12%	12%	10%	10%					
Men	87%	88%	88%	90%	90%					
France	1,894	1,883	1,829	-	-	939	954			
Women	16%	16%	16%							
Men	84%	84%	84%							
Hungary	1,612	1,675	1,540	-	-	408	541			
Women	29%	26%	24%							
Men	71%	74%	76%							
Other Europe	9,071	9,338	8,864	735	1,133	3,850	3,678	201	223	341
Women	22%	22%	21%	11%	13%					
Men	78%	78%	79%	89%	87%					
Total Europe	21,647	21,855	21 056	7,979	8,236	13,188	12,029	5,677	5,425	5,301
Brazil	6,108	5,658	5,227	4,743	4,830	1,273	1,158	1,166	986	905
Women	13%	13%	12%	13%	12%					
Men	87%	87%	88%	87%	88%					
USA	6,013	6,291	5,954	-	-	3,656	3,348			
Women	16%	15%	14%							
Men	84%	85%	86%							
Rest of the world	2,542	2,432	2,388	189	197	889	783			
Women	18%	18%	18%	23%	23%					
Men	82%	82%	83%	86%	87%					
Total	36,310	36,236	34,625	12,911	13,263	19,005	17,318	7,258	6,681	6,323
Women	18%	18%	17%	14%	13%					
Men	82%	82%	83%	86%	87%					

1) Number of employees is based on where the employee actually is stationed, and will in some cases differ from the Country-by-country report, which shows in which legal company she or he is employed.

2) The joint operations Alunorf and Aluchemie are excluded from the payroll figures in the table above. Those entities are included in Hydro's financial statements on a line-by-line basis. Please see note 2 to the consolidated financial statements for more information about joint operations.

3) Payroll figures for Extruded Solutions is only available from 2018

GRI-reference: GRI Standards 201-1 (2016) and GRI Standards 102-8 (2016)

When Hydro acquired Sapa in October 2017, the number of permanent employees increased by 21,378.

Age distribution permanent employees

Age distribution

	2019	2018	2017	2016	2015
Under 30	15%	15%	15%	12%	13%
30-49	52%	52%	52%	54%	55%
50 +	33%	33%	32%	33%	32%

GRI Reference: GRI Standards 405-1 (2016) and G4-EU15

S1.2 Employees by employment type and part-time employees

Total employees by employment type

Employment category	2019	2018	2017	2016	2015
Permanent - total ¹⁾	36,310	36,236	34,625	12,911	13,263
Temporary - total	1,647	1,680	1,646	1,266	1,144
Women	27%	27%	23%	27%	27%
Men	73%	73%	77%	73%	73%

1) For gender of permanent employees see Note S1.1

GRI Reference: GRI Standards 405-1 (2016) and G4-EU15

In Brazil the share of women among temporary employees is 35 percent, in Norway 30 percent, the USA 26 percent and Germany 15 percent.

Part-time employees include all persons being employed in positions that are not full-time (less than 100 percent).

Part-time employees

Part-time employees ¹⁾	2019	2018	2017	2016	2015
Norway	1.2 %	1.5 %	1.9 %	2.0 %	2.4 %
Women	3.7 %	4.2 %	5.6 %	3.5 %	7.7 %
Men	0.5 %	0.8 %	1.0 %	1.6 %	1.2 %
Total employees	1.3 %	1.3 %	1.6 %	1.2 %	1.4 %
Women	4.9 %	4.9 %	6.2 %	5.7 %	10.2 %
Men	0.5 %	0.5 %	0.6 %	0.6 %	0.4 %

1) Data for 2019 includes 98 percent of Hydro's permanent employees globally. We are working to further improve our reporting

GRI Reference: GRI Standards 102-8 (2016)

Hydro employees normally work full-time. The opportunity to work part-time is considered a benefit for which a special application must be made.

S1.3 New employees and turnover

New employee hires by age group, gender and country

Region and gender	Age								
	2019				2018				2017
	Total	Under 30	30-49	50+	Total	Under 30	30-49	50+	Total ¹⁾
Brazil	861	337	490	34	1,002	282	646	74	393
Women	8%	13%	6%	0%	19%	28%	16%	12%	9%
Men	92%	87%	94%	100%	81%	72%	84%	88%	91%
Germany	194	76	107	11	211	68	110	33	90
Women	28%	26%	29%	36%	17%	19%	13%	24%	12%
Men	72%	74%	71%	64%	83%	81%	87%	76%	88%
Norway	143	54	84	5	114	32	77	5	154
Women	28%	28%	29%	20%	32%	25%	29%	27%	35%
Men	72%	72%	71%	80%	68%	75%	71%	73%	65%
USA	1,581	634	716	231	1,821	767	800	254	123
Women	18%	18%	19%	16%	19%	16%	21%	20%	28%
Men	82%	82%	81%	84%	81%	84%	79%	80%	72%
Other	1,687	657	885	145	1,993	742	1,010	241	123
Women	23%	22%	25%	19%	27%	25%	29%	27%	28%
Men	77%	78%	75%	81%	73%	75%	71%	73%	72%
Grand total	4,466	1,758	2,282	426	5,141	1,891	2,643	607	760
Women	19%	19%	20%	17%	22%	21%	23%	22%	17%
Men	81%	81%	80%	83%	78%	79%	77%	78%	83%

1) Extruded Solutions are not included for 2017

GRI-references: GRI Standards 401-1 (2016), G4-EU15

Employee turnover by age group, gender and country

Region and gender	Age								
	2019				2018				2017 ¹⁾
	Total	Under 30	30-49	50+	Total	Under 30	30-49	50+	Total
Brazil	9%	10%	7%	15%	11%	11%	10%	17%	6%
Women	11%	11%	10%	18%	15%	23%	12%	22%	9%
Men	8%	9%	7%	15%	11%	9%	10%	17%	6%
Germany	5%	10%	3%	6%	4%	7%	3%	4%	2%
Women	8%	16%	5%	10%	3%	5%	3%	3%	2%
Men	5%	8%	2%	6%	4%	7%	3%	4%	2%
Norway	5%	7%	4%	5%	5%	7%	3%	7%	4%
Women	5%	7%	4%	6%	4%	4%	3%	6%	4%
Men	5%	7%	4%	5%	5%	8%	2%	7%	4%
USA	28%	58%	29%	16%	24% ²⁾	45%	24%	15%	
Women	31%	68%	30%	16%	33%	66%	33%	17%	
Men	29%	57%	29%	16%	22%	41%	21%	14%	
Other	13%	23%	12%	10%	12%	27%	9%	8%	7%
Women	13%	18%	13%	11%	9%	19%	7%	8%	2%
Men	13%	25%	11%	10%	13%	29%	10%	8%	8%
Grand total	13%	26%	11%	10%	12%	25%	11%	9%	4%
Women	14%	23%	13%	11%	14%	26%	12%	9%	5%
Men	13%	26%	11%	10%	12%	25%	11%	9%	4%

1) Extruded Solutions not included for 2017

2) Not including temporary employees

The employee turnover rate includes resignations, retirements and manning reductions, but excludes closures and divestments.

In the US we implemented a variety of improvement actions to reduce total employee turnover and yield better workplace stability. Main actions were to transition to direct internal recruitment (ceasing remaining temporary staffing agency utilization), and the implementation of an on-line recruitment module tool. The turnover reported for US in 2018 does not include temporary employees; including temporaries would identify 2018 turnover at approximately 34 percent.

Note S2 – Remuneration

Reporting principles

Data on gender related salary differences is based on local salary systems. Data on "highest paid employee" is based on note 9 in Hydro's consolidated financial statements for Norway, and from local salary systems in Germany and Brazil.

S2.1 Gender related salary differences

All employees shall receive a total compensation that is competitive and aligned with local industry standard (but not market leading). The compensation should also be holistic, performance oriented, transparent, fair and objective. Salaries in the organization are reviewed on a regular basis. There are no significant gender-pay differentials for employees earning collective negotiated wages in Norway, Germany and Brazil.

Following the integration of Extruded Solutions, the USA and Hungary have become significant countries of operations for Hydro. For 2018, we have looked into the salary differences for all Hydro employees in Hungary, and based on overall figures we find no significant gender related salary differences.

In 2018, we looked into the salary conditions for all Hydro employees in the USA, including the remelters, extrusion plants and precision tubing facilities. Based on our initial analysis, on average there are no significant gender related salary differences.

We will further analyze salary differences related to equal pay conditions.

S2.2 Highest paid employee

Highest paid employee includes fixed salary, pension, health insurance (Brazil only) and other benefits, but excludes bonuses. Any severance pay is excluded from the highest paid employee calculation to ensure consistency.

Highest paid employee per country

NOK thousand	% change 2018-19	2019	2018	2017
Brazil		-	2,387	5,058
Germany	-2%	3,590	3,663	
Norway	-41%	7,680	12,910	10,744

GRI-reference: GRI Standards 102-38 (2016) and GRI Standards 102-39 (2016)

Please see note 9.1 and 9.2 to the Consolidated financial statements for more information.

S2.3 Standard entry level wage

Entry level wages have been checked for some significant locations of operation. In Brazil, entry level wages are controlled by the labor agreement. We looked into salary differences in 2018, and the ratio compared to national minimum wage was both for women and men 1.25 in Barcarena and 1.89 in Paragominas.

In Germany and Norway the entry level wages are defined by tariff agreements. In the Norwegian operations, minimum entry wage is about 11 percent higher than the tariff minimum. In the German operations, the entry wage is 18 percent higher than the countrywide tariff minimum wage.

For Extruded Solutions' significant location of operations, Hungary, we have reviewed entry level wage. The standard entry level wage compared to national average does not deviate in Hungary. In the USA, the most significant country of operations for Extruded Solutions, we are still working to get the overview.

GRI reference: GRI Standards 202-1 (2016)

Note S3 – Diversity in management

S3.1 Women and non-Norwegians in management

Reporting principles

Diversity data for the board of directors and Corporate Management Board (CMB) for Norsk Hydro ASA are counted per year end. Diversity data for "Top 50 managers" include level 1 and 2 managers, i.e. the members of CMB and the members of the management teams at the level below CMB. At year end 2019 this included 110 persons. For "Top 200 managers", the data are based on the list of persons invited to the Hydro Summit in September 2019, in total 303 persons. The Hydro Summit is an annual meeting for top management in Hydro. The participants are nominated by the line organization.

Diversity in management

	Women					Non-Norwegians				
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
Board of directors (11 members) ¹⁾	27%	33%	33%	30%	30%	27%	11%	22%	20%	20%
Corporate assembly	33%	33%	33%	39%	39%	-	-	-	-	-
Corporate Management Board	40%	40%	40%	44%	44%	-	10%	20%	11%	11%
Top 50 managers	32%	33%	28%	29%	30%	37%	39%	37%	32%	36%
Top 200 managers	27%	25%	21%	25%	24%	60%	56%	51%	45%	48%

1) With three women among the 7 shareholder elected members in the board of directors, Hydro complies with Norwegian legal requirements. All three employee representatives in the board of directors are men

GRI-reference: GRI Standards 405-1 (2016)

S3.2 Local representation in senior management

Reporting principles

Senior management is defined as the management group at each site (site managers and those reporting to them) in addition to business area management teams. Local is defined at country level for Norway, Hungary, USA and Germany, and at state level for Brazil.

Local representation in senior management

Share of senior management hired from local community	2019	2018	2017	2016	2015
Norway					
Production sites in Norway	97%	97%	100%	100%	100%
Primary Metal management team	77%	91%	90%		
Extruded Solutions management team	38%				
Germany					
Grevenbroich plant	100%	100%	100%	100%	100%
Brazil					
Paragominas, Pará	9%	8%	9%	11%	18%
Barcarena, Pará	17%	13%	15%	21%	26%
Bauxite & Alumina management team	0%	0%			

GRI-reference: GRI Standards 202-2 (2016)

Of the ten members of the Bauxite & Alumina management team in Brazil, half are Brazilian citizens.

Hydro employs locals when necessary competence and capacity are available and normally uses expatriates only to secure employee development and the transfer of values and competence. Open positions in Hydro are normally posted at hydro.com and in local media. To secure competence transfer, it is important that there are also senior employees with experience from other units. This may even be the case at the blue-collar level, especially during start-up of new plants or equipment.

Note S4 – Employee engagement

Reporting principle

Hydro's employee engagement survey is normally carried out for all employees every second year.

The survey provides an Employee Engagement Index (EEI) which measures the extent to which employees are motivated to contribute to organizational success, and are willing to apply discretionary effort to accomplishing tasks important to the achievement of organizational goals. The survey also provided a Hydro specific The Performance Excellence Index (PEI) which measured among other things to which degree systems and processes are in place. This index will no longer be provided going forward.

The long-term ambition is to be among the top 25 percent companies worldwide on EEI.

Hydro Monitor

	2019	2018	2017	2016	2015
Employee Engagement Index (EEI)	N/A	84%	N/A	83%	N/A
Women	N/A	86%	N/A	85%	N/A
Men	N/A	83%	N/A	82%	N/A
Performance Excellence Index (PEI)	N/A	82%	N/A	82%	N/A
Response rate	N/A	88%	N/A	89%	N/A

The engagement survey is a tool to work with organizational development, therefore the most important part is follow-up of agreed actions. All units that participated in the survey in 2018 had action plans by 1 October 2018, based on their survey results. In 2018, the survey was run without Extruded Solutions. A new Hydro Monitor for the entire organization was to be conducted for all employees in 2019, but was postponed to third quarter 2020 due to the cyber-attack.

Note S5 – Health and Safety

Reporting principles

Standardized statistics are prepared and reported to management on a monthly basis. Data covers all organizational units within Hydro, including sales offices and administrative functions.

Workers (own employees and contractor employees as defined in note S5.1) are included during the period they are employed by or otherwise in service for Hydro.

S5.1 Total recordable injuries (TRI), Lost time injury (LTI) and sick leave

Total recordable injuries (TRI) index is calculated as the number of TRI per one million hours worked. TRI include LTI + RWC + MTC.

Lost time injury (LTI) is a personal injury at work leading to unfitness for work and absence beyond the day of the accident.

Restricted work case (RWC) is a personal injury at work that does not lead to absence beyond the day of the accident, because of alternative job assignment.

Medical treatment case (MTC) is treatment, other than first aid, administered by a physician or registered professional personnel under the standing orders of a physician.

Employees are workers under direct supervision of Hydro.

Contractors are workers who are under contract to execute work for Hydro, and who are under the direct supervision of the contractor, but at Hydro premises under Hydro's indirect supervision.

Sick leave for Hydro globally includes all absence due to injuries, work related and other illness, measured as number of hours lost due to sick leave as percent of number of hours worked plus number of hours lost due to sick leave.

Sick leave, Norway includes all absence due to illness, measured as number of days lost due to sick leave as percent of number of possible working days excluding holidays.

There are challenges in ensuring consistent reporting practice on sick leave across the company due to legislative and cultural differences between countries.

Total recordable injuries, lost-time injuries, fatal accidents and sick leave¹⁾

	2019	2018	2017 ²⁾	2016	2015
Total recordable injuries (TRI)	278	301			
Employees	229	243			
Contractors	49	58			
Total recordable injuries rate (TRI)³⁾	3.0	3.4	2.9	2.6	3.0
Employees	3.3	3.5	3.1	2.6	3.0
Contractors	2.2	3.0	2.5 ⁴⁾	2.6	3.1
Lost-time injuries (LTI)	119	147			
Employees	101	118			
Contractors	18	29			
Lost-time injuries rate (LTI)⁵⁾	1.3	1.7	2.1	0.9	1.2
Employees	1.5	1.7	1.4	1.2	1.4
Contractors	0.8	1.5	0.6 ⁴⁾	0.6	0.9
Total number of fatal accidents	-⁷⁾	1	2	-	1
Employees	-	1	1	-	1 ⁶⁾
Contractors	-	-	1	-	-
Sick leave, percent	3.7 %	3.6 %	3.4 %	4.3 %	4.0 %
Sick leave, Norway	4.5 %	4.0 %	4.0 %⁴⁾	4.4 %	4.3 %
Women	5.7 %	4.3 %	4.7 %	4.8 %	4.9 %
Men	4.2 %	3.5 %	3.8 %	4.3 %	4.2 %

1) The numbers include discontinued operations

2) Extruded Solutions are included from 2 October 2017

3) Number of recordable injuries per million working hours

4) Excluding Extruded Solutions. Working hours for Extruded Solutions in 2017 can not be split between employees and contractor workers

5) Number of lost-time injuries per million working hours

6) A Hydro employee became victim of the Germanwings crash on business travel

7) Contractor fatality in 50/50 JV managed by Qatalum

GRI-reference: GRI Standards 403-9 (2018)

In 2019, we deployed fatality prevention protocols and associated lifesaving rules and behaviours across all business areas. We also identified and shared best practices more effectively through a revised HSE auditing process and use of digital tools.

The fatality prevention protocols, also known as the “critical seven”, are:

- Energy Isolation (Lockout, Tagout and Verify, LOTO etc)
- Fall Prevention (working at height, below floor level, falling objects etc)
- Mobile Equipment (free moving vehicles such as forklift trucks, traffic management)
- Overhead Crane Safety (overhead travelling crane, mobile crane, tower crane etc)
- Confined Space Entry (entering tanks, pits etc)
- Molten Metal Safety (preventing explosion)
- Contractor Management (preventing injury during projects and other work to contractors and those providing contracted services)

Total recordable injuries (TRI) per region 1)

	2019	2018	2017 ²⁾	2016	2015
Total recordable injuries (TRI) employees	3.0	3.4	2.9	2.6	3.0
Employees	3.3	3.5	3.1	2.6	3.0
Contractors	2.2	3.0	2.5	2.6	3.1
TRI Norway	3.8	2.9	3.9	3.9	3.6
Employees	3.1	2.3	3.1	3.0	2.8
Contractors	10.2	8.7	7.3	10.0	11.1
TRI Germany	4.5	5.1	4.4	3.9	6.6
Employees	4.3	5.3	4.6	3.5	5.7
Contractors	5.5	3.8	3.2	5.7	12.7
TRI Brazil	1.3	1.8	2.0	1.8	1.8
Employees	1.5	1.5	2.3	1.6	1.6
Contractors	1.2	2.0	1.8	1.9	1.9
TRI US	4.5	4.7			
Employees	4.4	4.6			
Contractors	7.2	7.0			

1) Number of recordable injuries per million working hours. The numbers include discontinued operations.

2) Excluding Extruded Solutions for full year 2017

GRI-reference: GRI Standards 403-9 (2018)

The most dominant types of injuries in 2019 were damages to fingers and hands, representing over half of all recorded injuries. Injured legs, knees, ankles and feet represent around 20 percent while arms, elbows, shoulder and wrists represent 10 percent. Damages to face, eyes and head accounted for 10 percent of the recorded injuries. Hydro is not reporting these figures per gender as this can be in conflict with privacy protection considerations.

S5.2 High risk incidents (HRI)

High risk incidents include major accidents and incidents with major potential.

High risk incidents (HRI) rate is calculated as the number of high risk incidents per million hours worked, employees and contractors combined.

High risk incidents (HRI)

	2019	2018	2017	2016	2015
High risk incidents	195	202	127	63	83
HRI rate	2.08	2.27	2.53	1.57	2.07

GRI-reference: GRI Standards 403-9 (2018)

Read more about the fatality prevention protocols under Note S5.1.

S5.3 Occupational illness rate

Occupational illness rate measures occupational ill health. It is required as a minimum that all potential cases shall be reported. The majority of the reports are from our Norwegian sites, showing that there is room for further improvement in our global reporting. Development is tracked through a corporate reporting tool. Actual occupational illnesses are defined by Hydro as illnesses that

- have been confirmed by relevant authorities/insurance companies or doctors (depending on the national system)
- have led to any kind of permanent disability, disablement pension, loss of function and/or are a listed occupational disease

Occupational illness rate¹⁾

	2019	2018	2017	2016	2015
Occupational illness rate ²⁾	0.2	0.5	0.3	0.7	1

1) Excluding Extruded Solutions.

2) Cases per million working hours. The numbers include discontinued operations. Our reporting processes do not yet ensure complete reporting, specifically outside Norway.

GRI-reference: GRI Standards 403-10 (2018)

Extruded Solutions records occupational illness as part of the total recordable injuries. There were no occupational illness cases in Extruded Solutions in 2019.

Most of the reported cases are related to noise. We use our proactive tool for work environment risk assessment (WERA) to identify health risk and implement risk reducing measures e.g. substitution of hazardous chemicals, noise reduction, personal protective equipment to avoid development of new occupational illness cases. Through the work we have e.g. reduced the frequency of occupational illness cases related to noise and pot room asthma.

S5.4 Wellness

Hydro cares about the health and wellbeing of our employees, and offers a variety of initiatives to promote physical and mental health.

The majority of Hydro's sites offer wellness initiatives, ranging from healthy eating, exercise opportunities, weight management, stop smoking campaigns and work-life balance management. Several sites have access to a social worker or counselor to address psychological health and safety, and health and wellness is also addressed at site Health and safety-day arrangements.

Note S6 – Labor rights*Reporting principles*

The vast majority of operational sites within Primary Metal and Energy have established formal joint management-worker health and safety committees covering all employees. At certain sites, also contractor employees are included.

Hydro's major sites in Europe and Brazil are unionized. Extruded Solutions has a major presence in the USA, and about 60 percent of our US employees are working at a unionized site. In total, we estimate that 86 percent of all employees work at a unionized site. Learn more about dialogue with the employee representatives under Dialogue with affected parties on page 88.

In regions where unions are not allowed we are striving to establish alternative worker-management relations.

No strikes exceeding one week and no lock-outs took place in 2019.

Note S7 – Current income tax

Reporting principles

Current income tax is based on Hydro's financial statements.

Current income tax

NOK Million	2019	2018	2017	2016	2015 ¹⁾
Norway	665	1,770	1,715	690	563
Germany	38	81	(9)	251	230
France	36	56	10	9	11
Spain	-	26	8	7	7
The Netherlands	30	10	2	(3)	(2)
Slovakia	6	46	55	36	115
Sweden	23	48	46	-	-
Poland	40	32	22	-	-
Luxembourg	28	24	10	9	33
Denmark	11	22	28	-	-
Austria	39	39	30	-	-
Hungary	41	38	(2)	-	-
Other	16	26	17	5	9
Total EU	307	449	218	315	403
Switzerland	8	22	1	-	(15)
Other Europe	-	-	-	-	-
Total Europe	980	2,241	1,934	1,006	952
USA	167	39	23	16	14
Canada	21	73	150	87	6
Brazil	291	312	424	853	396
Asia	37	52	39	19	13
Other	16	7	4	7	33
Total outside Europe	532	483	641	982	462
Total	1,512	2,724	2,575	1,988	1,414

1) The joint operations Alunorf, Skafså Kraftverk, Tomago and Aluchemie are included in the figures above, but are not included in the other parts of the social or environmental statements, except for certain information in note E8 and S14. Those entities are included in Hydro's financial statements on a line-by-line basis. Please see note 3.1 to the consolidated financial statements for more information about joint operations.

GRI-reference: GRI Standards 201-4 (2016)

Hydro is subject to income taxes in the countries where we operate. The nominal tax rates typically vary between around 20 and 35 percent. The effective tax rates may differ from the nominal tax rates, among other things as a result of differences in depreciation rates and other tax deductions.

- The marginal tax rate for our power production in Norway is 59 percent.
- Qatalum, a 50/50 joint venture with Qatar Petroleum, has been granted a 10 year exemption from income taxes in Qatar, expiring in 2020. Thereafter, Qatalum will pay income tax at the generally applicable income tax rate in Qatar. It is Hydro's position that the generally applicable income tax rate, currently at 10 percent, shall apply to Qatalum after the expiry of the tax holiday.
- The general corporate income tax rate in Brazil is 34 percent. Hydro's bauxite, alumina and aluminium operations in Brazil have been granted income tax incentives encouraging investments in the northern provinces of Brazil, reducing the tax rate on operating income to between 20 and 34 percent. In addition, Hydro's operations in Brazil are subject to a number of significant indirect taxes.
- Hydro is present in some countries with a tax rate below 10 percent. In Switzerland, we have bauxite, alumina and aluminium sales activities, and aluminium sales activities in Singapore, both are taxed at rates of around 10 percent. In addition, Hungary has a tax rate of 9 percent.

Hydro reports according to the Extractive Industries Transparency Initiative and Norwegian legal requirements, see Hydro's Country by country report on page 273. We also report on financial assistance from public organization related to R&D activities, see note S8.

Note S8 – Research & Development (R&D)

Reporting principles

R&D expenses are collected through Hydro's financial reporting, see Hydro's financial statements note 10.2 Research and Development to the consolidated financial statement. R&D funding is gathered from Hydro's corporate technology office and our main R&D centers, located in Årdal (smelter technology) and Sunndal (alloys and casting) in Norway, Bonn in Germany (Rolled Products) and Brazil (Bauxite & Alumina). The R&D centers in Extruded Solutions are in Finspång, Sweden, and Detroit, USA. Funding received are actual income received from public research funds, e.g. The Research Council of Norway (Forskningsrådet) and Enova, through the year. See page 90 (Cooperation with other institutions) for more information.

Research & Development

NOK million	2019	2018	2017	2016	2015
Research & Development expenses	625	594	500	370	330
Funding received ¹⁾	36	35	62	46	51

1) In addition comes funding to the Karmøy Technology Pilot of NOK 1.6 billion from 2015-2018. Hydro participates in collaborative projects carried out by other research organizations which receive public funding directly. Such funding is not included in the figures above.

GRI-reference: GRI Standards 201-4 (2016)

We have been granted funding amounting to approximately NOK 190 million - to be received in the years to come - provided that certain research projects are carried out. Some funds might already have been received, see page 101.

Note S9 – Social responsibility

S9.1 Community investments, charitable donations and sponsorships

Reporting principles

All sites, except Extruded Solutions, report annually on all community investments, charitable donations, sponsorship and other related initiatives. The reporting includes monetary amounts and time spent and benefits to the company as well as to the communities. Outcomes for Hydro and the society are also included in the reporting requirements.

Community investments

NOK million	2019	2018	2017	2016	2015
Community investments ¹⁾	50	29	23	19	13
Total community investments, charitable donations and sponsorships ¹⁾	59	89	36	28	30

1) Excluding Extruded Solutions.

The increase in 2018 includes NOK 35 million related to emergency relief following the extreme rainfall and subsequent flooding in Barcarena in 2018. It also includes around NOK 10 million to foodcards as part of the TAC agreement. See the section "The Alunorte situation" in Hydro's Annual Report 2018.

Extruded Solutions has a magnitude of community investments at its sites. The nature of such projects varies with local customs and business needs. We do not currently have consolidated information about these.

S9.2 Social responsibility target

Reporting principles

Hydro has committed to contribute to quality education, and capacity and competence building for 500,000 people in our communities and for business partners from 2018 until end of 2030.

We have established a framework and methodology for counting the people impacted by our programs and initiatives to ensure consistency across the company.

Education refers to initiatives within the formal educational system, from elementary school to university. Examples of initiatives include training of teachers and external scholarships.

Capacity, or competence, building refers to all training and competence building outside formal educational systems. Examples includes trainees and Hydro's supplier development program established in Brazil.

Social responsibility target

Number of people	2019
Education and capacity building	26,600

Continuous improvement of current initiatives and development of new effective, high-impact initiatives will be important going forward. Education, and capacity and competence building initiatives contribute equally to the total.

Note S10 – Compliance

Reporting principles

Compliance data have mainly been collected from Group Internal Audit and Investigations' overview of alerts reported to line management, to supporting staff functions, and Hydro's AlertLine. In addition, compliance data has been obtained from quarterly compliance reporting by business areas, and a self-assessment filled in by each business area at year-end. Some information has also been collected through other sources including Hydro's Legal department and Procurement Network.

S10.1 Reported and confirmed cases of non-compliance

Non-compliance cases are normally reported to line management and/or supporting staff functions including Group Compliance, Group Internal Audit and Investigations, HR, Legal, HSE, Finance and Accounting. Non-compliances can also be reported through Hydro's AlertLine, which offers the possibility of anonymous reporting, unless otherwise prohibited by local law. Although separate reporting statistics have been kept for Extruded Solutions and the rest of Hydro, the figures from 2018 are consolidated.

The number of dismissals due to breach of Hydro policy is limited to cases reported to Hydro's Internal Audit.

In 2019, there were two dismissals in substantiated cases of corruption. One concerned a contracted manager who offered an external business partner preferential treatment in a tender process in exchange for his private business being granted a commission agreement. The other was a manager who received payments from vendors in return for awarding contracts.

In 2019, Hydro received 22,000 notices in Canal Direto, the grievance mechanism in Brazil. The majority were related to questions about the food card distribution process. Distribution of food cards was part of the TAC agreement with the Government of Pará and Ministério Público in relation to the Alunorte situation in 2018. A review of the Canal Direto and plans for improvements are underway. "Term of Adjustment of Conduct" is an agreement between Alunorte, Ministério Público and the Government of Pará/Semas and regulates certain technical studies and improvements, audits, payments of fines, and payments for food cards to families living in the hydrographic area of the Murucupi river.

Cases reported regarding breaches of Hydro policy

	2019	2018	2017 ²⁾	2016	2015
Number of cases reported through AlertLine (or similar)	347	342			
Hydro, excluding Extruded Solutions			123	173	83
Extruded Solutions			179		
Dismissals due to breaches of Hydro policy¹⁾	20	14			
Hydro, excluding Extruded Solutions			4	5	23
Extruded Solutions			2		
Alleged cases of harassment	90	116			
Alleged cases of discrimination	25	11			
Alleged cases of discrimination and/or harassment					
Hydro, excluding Extruded Solutions			40	45	3
Extruded Solutions			44		
Confirmed cases of harassment	34	50			
Confirmed cases of discrimination	7	1			
Confirmed cases of discrimination and/or harassment					
Hydro, excluding Extruded Solutions			16	9	1
Extruded Solutions			11		
Alleged cases of corruption, fraud, corruption and/or conflict of interest	48	25			
Hydro, excluding Extruded Solutions			32 ³⁾	21	19
Extruded Solutions			10		
Substantiated cases of corruption	2	1			
Confirmed cases of fraud	4	-			
Confirmed cases of conflict of interest	3	3			
Hydro, excluding Extruded Solutions			11	1	5
Extruded Solutions			3		

1) Total number of dismissals due to breaches of Hydro policy of which Hydro's Internal Audit is informed

2) Figures for Extruded Solutions include all of 2017, not only the months after acquisition

3) 2017 figure included cases of non-compliance

GRI-reference: GRI Standards GRI 406-1 (2016) and 205-3 (2016)

S10.2 Legal claims

The legal claims stated below are cases related to Brazil and goes beyond what is covered in the section Legal proceedings page 63. For more information about other legal proceedings in Hydro, including the case related to Sapa Profiles Inc., a Portland, Oregon based subsidiary to Hydro Extruded Solutions AS, please see the section Legal proceedings on page 113.

Cases related to the Alunorte

For information related to the Alunorte situation, please see Hydro's Annual Report 2018.

February 28, 2018: The State Public Prosecutor's Office filed in the State Criminal Court of Barcarena, State of Para, Brazil, a criminal lawsuit against Alunorte alleging a leakage/overflow of the bauxite residue deposits to the external environment and environmental damage. An injunction was granted, and the court determined the prohibition on the use of the new bauxite residue deposit DRS2 and the reduction of the production to 50 percent. The case was referred to the Federal Court which maintained the injunction. On May 20, 2019, the Federal Court lifted the production embargo on the Alunorte alumina refinery allowing Alunorte to ramp up towards normal production. On September 2, 2019, a joint petition was filed (Federal Public Prosecutors, Alunorte and Norsk Hydro Brasil) requiring the court to lift the embargo on DRS2 to resume the installation and commissioning activities. A termination of the criminal lawsuit was also requested. On September 26, 2019 the court lifted the DRS2 embargo and terminated the lawsuit.

March 03, 2018: The trade unions of workers in the chemical industries of Barcarena, State of Para, requested an injunction to avoid Alunorte to conduct any dismissals of employees without first negotiating with the labor union. The Labor Court of the district of Abaetetuba, State of Para, granted such injunction but the decision was overturned by the Court of Appeal. In respect of the merits of the case, on February 28, 2019 the Labor Court of Abaetetuba maintained its previous decision. The Court of Appeal accepted the request for the supervening loss of the object, with the extinction of the lawsuit. In essence, the judgment excluded the obligation to reintegrate workers being dismissed during the production embargo and excluded any fines. The labor union did not appeal, and the decision is final. The case is now dismissed.

March 16, 2018: CAINQUIAMA – Associação dos Caboclos, Indigenas e Quilombolas da Amazônia (an association of local communities from Barcarena) filed a lawsuit in the State Court in Belém against Norsk Hydro Brasil, Alunorte and the State of Pará, claiming that chemical waste was intentionally discharged and that the bauxite residue deposits were in operation subject to a fraudulent license granted by the State of Pará. Furthermore, the plaintiff alleged that the bauxite residue deposits (DRS 1 and 2) are located on an ecological reserve area. With reference to these allegations the plaintiff requested the defendants to carry out medical examinations of allegedly impacted communities. On March 22, 2018, the State Court partially granted the injunction and determined that the companies cover the cost of health tests on people allegedly affected by the claimed pollution. On August 2, 2019 the companies filed an interlocutory appeal in order to suspend the injunction granted by the State Court. On August 7, 2019 the Court of Appeal granted the companies' request and suspended the effects of the injunction decision until a definitive decision of the case.

March 27, 2018: A collective lawsuit was filed by IBS (Barcarena's Social and Environmental Institute) against Norsk Hydro Brasil, Albras, Alunorte, Imerys, Alubar, the Municipality of Barcarena and the State of Pará to seek remediation of the environment and compensation for material and moral damages. On August 02, 2018, the lawsuit was referred to the Federal Court.

April 3, 2018: The State of Pará filed a civil class action seeking to recover environmental damages allegedly caused by Alunorte, as well as indemnification for alleged material and moral damages. On April 9, 2018, the Court ordered Alunorte to present a guarantee of BRL 150 million. On December 12, 2018, Alunorte and the State of Pará entered into a settlement agreement to end the lawsuit with reference to the Term of Adjusted Conduct (TAC) and Term of Commitment (TC) signed on September 5, 2018. In addition, Alunorte agreed to cover the public expenses related to inspections carried out following the heavy rainfall in February 2018. On October 14, 2019 the Court issued a decision homologating the agreement and extinguishing the lawsuit.

April 5, 2018: The State and Federal Public Prosecutor's Offices (Ministerio Público) filed a lawsuit against Alunorte, Norsk Hydro Brasil and the State of Pará. As a preliminary injunction, the plaintiffs requested partial suspension of Alunorte's production activities (50 percent reduction) and prohibition of using the bauxite residue deposit DRS2 until the license to operate was obtained, and the company could demonstrate operational stability and efficiency. On April 30, 2018, the Federal Court partially granted the injunction, determining a similar embargo previously granted by a State Criminal Court. The State of Pará and the State Public Prosecutor's Office were excluded from the lawsuit. On May 15, 2019 the Federal Court lifted the production embargo on Alunorte. On September 20, 2019 the Federal Court issued a decision homologating the agreement between Federal Public Prosecutors, Alunorte and Norsk Hydro Brasil to resume DRS2 installation and commissioning activities.

May 15, 2018: A new lawsuit was filed by CAINQUIAMA against Mineração Paragominas (MPSA), Albras, Norsk Hydro Brasil, Alunorte, INMETRO (National Institute of Metrology), BVQI -CERTIFICADORA LTDA; Federal Union of Brasil, National Department of Mineral Production ("DNPM"), in the Federal Court in Paragominas, alleging that MPSA's tailings contain hazardous substances. CAINQUIAMA also claimed that the bauxite residue has been illegally dumped in Alunorte's bauxite residue deposits (DRS1 and DRS2) and that these deposits are located in an ecological reserve area requesting an injunction to

stop the operation of MPSA. On July 18, 2018 the Federal Court denied the request for injunction. On October 23, 2018, the case was referred to the Federal Court in Belém pending further decisions. On August 30, 2019 the companies filed an interlocutory appeal against the decision that referred the lawsuit to the 9th Federal Court of Belém and requested that the lawsuit stays in Paragominas Federal Court.

September 12, 2018: ADECAM (Association of Education, Culture, Protection and Defense of Consumers, Taxpayers and Environment of Brazil) filed a lawsuit in the Federal Court in Belém against Alunorte, Norsk Hydro Brasil, the Federal Union and Ibama (the Federal Environmental Agency) seeking compensation for alleged collective moral damages to the people of Pará, having the rainfall in February 2018 as the main ground for the claim. The association accuses the companies of pollution, including overflow and leakage of the bauxite residue deposits, discharge of contaminated effluents through clandestine/hidden pipes, in addition to what has already been claimed in other lawsuits involving the February incident. On June 13, 2019 Alunorte and Norsk Hydro Brasil were summoned to present their defences which they did on July 7, 2019.

October 31, 2018: CAINQUIAMA filed a similar lawsuit as the one filed in March 16, 2018 against Mineração Paragominas (MPSA), Albras, Norsk Hydro Brasil, Alunorte, State of Pará, BVQI - Certificadora Ltda in the State Court of Belem, requesting the suspension of the operation of the companies. On June 17, 2019, the court issued a decision that denied the injunction request and summoned the defendants to present defense. On September 3rd, 2019 the companies presented their defenses.

On May 3rd, 2019: CAINQUIAMA filed a new lawsuit, with an injunction request, before the 5th Public Treasury Court of Belem against (i) the State of Pará; (ii) Norsk Hydro Brasil.; (iii) Mineração Paragominas; (iv) Alunorte. and (v) Albras. In short, the complaint states that the products used in Brazil in order to refine bauxite are more toxic than the ones used in Norway. Further, it argues that the amount of coal and heavy fuel oil consumed per year by Alunorte released into the atmosphere is harmful to the environment (as it can cause, e.g., acid rain and contamination of soil and water) and to humans (as it can cause respiratory illness and premature death). Lastly, it mentions that the ICMS tax deferral given to defendants must be lifted, because Alunorte has not changed the energy source from fuel oil to natural gas as agreed with the government through one of the commitments in the ICMS agreement. On June 10, 2019 the Court issued a decision that denied the injunction request and summoned the defendants to present defense. On August 1st, 2019 the companies presented their defenses.

On August 1, 2019: The people from Abaetetuba (State of Pará) filed a lawsuit before the Federal Court in Belém against Alunorte, State of Para and Federal Union. The case relates to 2018 rainfall incident. Following this, fourteen other lawsuits were filed (total of 15) by other people from Barcarena and Abaetetuba. In total, the lawsuits now relate to about 1.500 individuals. The plaintiffs claim that Alunorte contaminated the environment, and due to this they are not able to sustain their livelihoods as farmers and fishermen. For the first cases Alunorte presented manifestation regarding the injunction requests informing that there is no proof of the alleged damages, and also it was not demonstrated by the plaintiffs the urgency to justify the concession of the injunction requests.

On August 20, 2019, the Agrarian State Public Prosecutor Office issued a “recommendation” alleging that: (i) DRS1 and DRS2 were built in an area designated as “ecological reserve” as defined in the purchase agreement from 1982 and according to environmental legislation; (ii) restoration of agricultural area as defined in the 1982 agreement was not implemented and; (iii) Tauga community was wrongfully evicted in the 1980s and later eviction cases, and should be granted land rights. The main requests from the Agrarian State Public Prosecutor Office are: (i) the demolition of parts of DRS1 and DRS2; (ii) the agricultural area should be re-established; and (iii) Tauga community should be recognized as a traditional community and granted their community and land rights.

Other cases

From 2008 there is a legal dispute between five of the 120 relocated families and the alumina refinery project CAP in Barcarena in Brazil. Their requests have been denied by the Court. The case is still waiting for decision of the Court of Appeals. Following an overflow of storm water from the bauxite residue deposits at Alunorte in 2009, there are still legal issues pending. In 2012, more than 5,400 claims related to the overflow were filed in the local court. By the end of 2019, a total of 4,488 cases have been decided by the first level civil court in Barcarena, Pará, all in Alunorte's favor. 3,321 of these decisions have been appealed to the second level civil court, located in Belem, Pará, which rendered decisions in 2,702 appeal cases, all in favor of Alunorte. The second level civil court upheld the first instance decisions on the basis that there is no evidence that the plaintiffs suffer or have suffered from the alleged damages related to the spillage of bauxite residue contaminated water. As of 31st December 2019, 1,162 plaintiffs have filed appeals to the Superior Court of Justice, with a decision rendered in 42 cases, all in favor of Alunorte.

A civil class action was filed by the Municipality of Ulianópolis against Albras and Alunorte and several other companies in September 2011 to seek remediation of environment damage and the condemnation of the companies for collective moral damages, considering their alleged contribution to environmental damages related to previous disposal of waste through Companhia Brasileira de Bauxita (CBB). Albras and Alunorte are parties in the class action, as both delivered waste to CBB prior to 2003. The class action was filed after an attempt from the Municipality of Ulianópolis together with the State Environmental Agency - Semas, to negotiate a settlement with all the companies involved. Albras and Alunorte did not agree to the terms of the proposed settlement as they had already removed their waste from the site.

The Federal and State Public Prosecutors, in a joint initiative, filed a Public Class Action against Albras, Alunorte, Imerys, Votorantim, Oxbow, Yara (companies located in the industrial district of Barcarena) and the Municipality of Barcarena, the State of Pará and the Federal Union (Brazilian Government). The purpose of the lawsuit is to protect the rights of the local people of Barcarena that allegedly consume contaminated water due to the industrial activities in the municipality.

In 2017, Cainquiama, an association of Caboclos, an indigenous people to the Amazon, filed a lawsuit against Norsk Hydro Brasil, Alunorte and Albras, the State of Pará, Bureau Veritas Brasil and Inmetro. They claim part of the bauxite residue deposits for Alunorte (DRS1 and DRS2) was established on an area designated as an ecological reserve, and that they have suffered social and environmental damages.

March 13, 2014 (“CBB case”): Three similar labor claims were filed before the Labor Court of Paragominas, Pará, against Companhia Brasileira de Bauxita (“CBB”), Alunorte, Albras and 81 other companies by former CBB employees. The plaintiffs claimed that they worked under unhealthy and hazardous conditions, that the employer (CBB) did not provide them with appropriate personal protective equipment, and as consequence, they developed serious illnesses that prevented them from working. They claim payment for moral and material damages. The defendants other than CBB (including Albras and Alunorte), were sued because the alleged toxic materials came from their waste (as processed by CBB). At the hearings held on 20 August 2015, all plaintiffs argued that they started having medical problems after providing services to CBB, but they were not able to identify the type of disease they suffer from. They confirmed that CBB granted personal protection equipment, and they further claimed that they never received any directions from management/employees of Alunorte or Albras.

On December 7, 2015, 16 former employees of CBB filed three new similar lawsuits. Alunorte and Albras were notified on January 22, 2016. On July 19, 2018, the accused presented their defenses and on December 16, 2019, the Labor Court of Paragominas determined the production of medical expert examination to be carried out, so that it can be evaluated whether the plaintiffs have any disease as result of their working conditions. Next Court hearing is set forth April 30, 2020 before the Labor Court of Paragominas. In the meantime, it is expected that the medical expert examination is concluded.

February 2017 (“Commuting Hours Case”): The union at Paragominas filed in February 2017 a claim for all employees to be compensated for hours spent commuting. Following the labor law reform in November 2017, the obligation to compensate for commuting if the place of work is not served by regular public transportation or if the public transportation is not satisfactory to meet the demand is not valid. Due to this change, the period in question is February to November 2017. The case is now suspended, as the Labor Court of Appeals and Superior Labor Court of Appeals has different understanding of the subject.

April 2019 (“Night shift case”): Mineração Paragominas (“MPSA”) employees Union filed a Collective Labor Lawsuit on behalf of all employees asking for additional salary differences related to night shift work for employees working on rotating shifts (and when the shifts were overnight), as well as weekly rest payments for those working for seven consecutive days. Paragominas changed the calculation for night shift compensation in February 2018, and the period in question is from February 2014 to February 2018. The case is now suspended, as the Labour Court of Appeals and Superior Labor Court of Appeals have different understanding related to the subject.

S10.3 Relocation of people

Relocation of people may at times be necessary in connection with our operations. No voluntary or involuntary relocation of people with legal or prescriptive rights to their dwellings, took place in Hydro's operations in 2019. In Barcarena in Pará, Brazil, in an area surrounding Hydro's operations and regulated for industrial purposes, illegal logging and settlements have accelerated since 2016. Neither the authorities nor Hydro want settlement in the area.

S10.4 Compliance training

In Hydro, compliance awareness training is provided on many different topics and can comprise of classroom-training, workshops, town hall meetings and various e-learning modules. In 2019, training was provided on the topics of anti-corruption (including gifts and hospitality, and conflict of interest), competition, data privacy, and sanctions and trade compliance.

15,609 employees completed our e-learning module on our revised code of conduct, and an additional 4,881 employees received classroom training on the subject. In total, 25,587 employees received compliance awareness training prepared and executed mainly by Group Compliance and Group Legal.

S10.5 Screening of business partners and supplier audits

As part of the integrity risk management process, approximately 18.000 of Hydro's potential or existing counter-parties were screened for human rights violations, corruption, money-laundering, politically exposed persons and violations relating to sanctions using the RDC integrity risk tool. This mostly relates to suppliers, but also some customers, agents and other

business partners were included. New business partners related to most Norwegian and Brazilian operations are screened before registered in our ERP system.

All suppliers, customers and other business partners registered in our main accounting systems are screened on a weekly basis against recognized international sanction lists.

In total 98 supplier audits were conducted in 2019 in Hydro, excluding Extruded Solutions, of which 93 included topics related to health, safety, environment and social responsibility. Around 90 percent of the audits led to action plans, and by the end 2019, around three quarters of the corrective actions proposed by Hydro were responded to. Extruded Solutions performs audits on suppliers of direct goods, i.e. aluminium billets and components that end up in the final product sent to customers. For metal suppliers the audits are risk based and emphasize quality, and include environmental, social and governance topics.

Key CSR and HSE findings from the audits relate to lack of management systems, environmental awareness, compliance controls and emergency preparedness.

A non-compliance with or breach of the principles in Hydro's Supplier Code of Conduct that is not able to be corrected within a reasonable period, may lead to termination of the supplier contract. In 2019, we for example terminated a contract with one of our metal suppliers. Hydro was concerned about the metal supplier's compliance with the principles but was not given permission to audit the supplier's operations.

S10.6 Cyber security training

Hydro continue to emphasize security awareness for end-users, and provide e-learnings for all users with access to Hydro Academy. Guidelines are published in relevant channels for all users.

A security awareness program is being established, which targets end users and roles with a particular need for further education. The ambition is to make this training mandatory.

Note S11 - Spending on local suppliers

Reporting principles

Selection of local partners and suppliers/contractors shall be based on competitive bidding to the extent feasible, and in compliance with competition laws and regulations as well as Hydro's requirements. A local supplier is here defined as a supplier situated in the same country as the operational site.

Data on local purchasing is gathered by the business areas Bauxite & Alumina, Primary Metal, Energy and Rolled Products, in addition to Hydro's project organization, and covers consolidated activities. Extruded Solutions' business model and regional operations differ from the other business areas, in size and nature. An Extruded Solutions site is normally smaller in size and located in an industrial area, with a group of similar size businesses and plays a part in a regional network. Normally most non-metal spend is sourced from local suppliers. As Extruded Solutions comprises of more than 100 sites in 40 different countries and the situation varies by site and by region and there is no typical figure for the business area.

For the business areas Bauxite & Alumina, Primary Metal, Rolled Products and Hydro's project organization, Brazil, Norway and Germany are considered the most significant locations of operation based on economic importance.

Spending on local suppliers vary from site to site depending on which goods and services are available. Local spend in our Brazilian Bauxite & Alumina operations was estimated to be 80 percent in 2019. About 45 percent of total spend within Rolled Products (mainly operations in Germany and Norway), was spent within Germany and Norway. Most of the raw materials used at the aluminium plants in Norway are imported, while electricity and services are sourced locally. In the Norwegian smelters local procurement mainly relates to maintenance services etc. and is above 50 percent. Hydro's procurement organization for large projects carries out major projects mainly in Brazil and Norway. Local spend in projects carried out in Brazil and the portion of local spend related to hydro power and primary metal projects in Norway is very high. Across the different projects, local spend by Hydro's project organization was 85 percent of total spend.

Note S12 – Public affairs and lobbying

Reporting principles

Data on public affairs and lobbying is gathered from Hydro's Communication & Public Affairs department in Norway, EU, Germany and Brazil and covers consolidated activities. We are currently mapping the extent of public affairs and lobbying in Extruded Solutions.

In total ten full-time equivalents (FTE) are dedicated to public affairs and lobbying. This includes three FTEs each in Brazil and in the EU (Brussels office). In Norway and Germany two FTEs are dedicated to public affairs and lobbying. Within the EU, lobbying activities are publicly reported through the EU Transparency Register. To get a full overview of all Hydro's memberships in different industry associations see Hydro.com.

According to our global directives, Hydro may not make financial contributions to political parties. We have no indications that such contributions took place in 2019.

Note S13 – Certifications

Reporting principles

According to Hydro's policy, all operational sites shall comply with, but not necessarily be certified according to, ISO 9001 and ISO 14001 and - within 2020 - with OHSAS 18001. Certification according to these standards is a decentralized responsibility based on identified business needs.

Hydro's power plants in Norway have chosen not to be certified. However, they are fulfilling the requirements given in the mentioned standards. In addition, the power plants need to comply with the requirements given by the Norwegian Water Resource and Energy Directorate (NVE), i.e. concessions for operations as well as environmental, third person safety, security and emergency preparedness regulations. The table below shows the distribution of certification of the other operational sites in Hydro.

In addition to the mentioned ISO and OSHAS standards below, a number of sites are also certified according to different sector and customer specific standards. Examples of such certifications are the IATF 16949 for the automotive industry, and the Aluminium Stewardship Initiative.

Share of relevant operational sites certified	ISO 9001	ISO 14001	OHSAS 18001	ASI
Hydro	98%	97%	72%	34%

Of our sites delivering to the automotive industry, 88 percent are certified according to the IATF 16949. Hydro's most energy intensive sites and operations comply with the ISO 50001 Energy Management systems.

Note S14 – Social data for 50/50-owned companies

Reporting principles

Hydro has an ownership share of 50 percent in Alunorf and Qatalum. As only operations owned more than 50 percent are included in most of the information in Hydro's viability performance statements, we have chosen to disclose certain social information about these partly-owned companies and their total performance. The reporting principles of each indicator might differ from the ones used by Hydro and in-between the companies. For information about environmental data, see Note E8 to the environmental statements.

Social data for 50/50-owned companies

	Main product	Number of employees	Share of women	TRI, employees	TRI, contractors	LTI, employees	LTI, contractors	Fatal accidents
Alunorf	Rolled products	2,273	4.6 %	4.8	NA	1.2	NA	-
Qatalum ¹⁾	Primary aluminium	1,137	3.6 %	0.7	0.7	0.3	0.7	1

1) Data from Qatalum relate to 2018, except the fatality of a contractor employee in 2019

Partnerships and commitments

GRI Standards

Hydro uses the GRI Standards for voluntary reporting of sustainable development. The guidelines comprise economic, environmental and social dimensions relating to an enterprise's activities, products and services. GRI collaborates with the United Nations Environment Program and UN Global Compact. Hydro has reported according to GRI since 2003.

We believe that our reporting practice is consistent with GRI's reporting principles in all material respects. We report in adherence to "Core" as defined by the GRI Standard 101: Foundation 2016, and include the GRI G4 Mining & Metals sector supplement and certain relevant aspects of the G4 Electric Utilities sector supplement in our reporting.

The report is externally assured by KPMG. The external assurance, as outlined in the Independent Auditor's Assurance report, concludes that the report is presented, in all material respects, in accordance with the GRI Standards, see page 264.

The GRI index, including the full definition of each indicator and references to specific sections in this report as well as additional information, can be found on www.hydro.com/gri

UN Global Compact Communication on progress

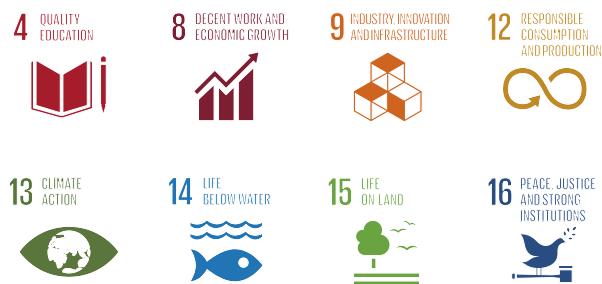
We support the principles of the UN Global Compact. Human rights, international labor standards, working against corruption and environmental considerations are fundamental to our approach to corporate responsibility.

Hydro has played an active role in the Global Compact since its formation. Our commitment is expressed by the President & CEO in his letter to shareholders on page 8 of this report. Our Communication on progress (COP) in relation to the Compact's 10 principles is at the Advanced level and thus also reflects the Global Compact's 21 advanced criteria. The consistency of the information in Hydro's Viability Performance reporting 2019 with the information in the Hydro Communication on Progress 2019 has been reconciled by our auditors, see page 264. A complete report can be found at www.hydro.com/globalcompact

UN Sustainable Development Goals

The UN Sustainable Development Goals (SDGs) embrace a universal approach to the sustainable development agenda. They explicitly call on business to use creativity and innovation to address development challenges and recognize the need for governments to encourage sustainability reporting. Hydro has an impact on all of the 17 development

goals, but some more than others. Of the 17, Hydro has chosen eight goals that are the most important to us, that are highlighted throughout the report.



Hydro uses the SDG Compass, a tool built in a partnership between GRI, UN Global Compact and the World Business Council on Sustainable Development, to make a high-level review on how we relate to the UN Sustainability Development Goals. This review is included in the GRI index 2019 and is also included in external auditor's consistency check of Hydro's GRI index 2019.

A more complete overview of Hydro's positive and negative impacts on each of the 17 SDGs, can be found at www.hydro.com

UN Guiding Principles on Business and Human Rights

The United Nations (UN) Guiding Principles on Business and Human Rights (hereafter Guiding Principles) were endorsed by the UN Human Rights Council in June 2011. They have provided a clear, global understanding of governmental duties and corporate responsibilities for human rights. The Guiding Principles articulate that wherever and however a company operates, it must refrain from violating human rights. Companies are expected to be fully aware of their human rights impacts, take concrete steps to address them and implement measures to mitigate negative impacts in the future.

Hydro uses the GRI document "Linking G4 and the UN Guiding Principles" document as basis for how we report on our adherence with the guiding principles, and report on this in the GRI index 2019. This is also included in external auditor's consistency check of Hydro's GRI index 2019. The most salient human rights issues are defined through our materiality analysis on page 80 in this report and include:

- Diversity and equal opportunity
- Human and workers' rights
- Occupational health and safety
- Supply chain management (including child and forced labor)

Hydro has nothing to report for 2019 on the guiding principle B4 "Additional severe impacts".

ICMM

Hydro is a member of the International Council on Mining and Metals and reports according to the ICMM requirements. That includes Hydro's reporting in accordance with the GRI Standards, see the section about GRI above. The Viability Performance 2019 reporting is prepared in line with the requirements found in the ICMM 10 principles and position statements. The complete Viability Performance 2019 reporting is – according to the ICMM requirements – assured by our external auditor, please see page 264.

ASI

The Aluminium Stewardship Initiative (ASI) is a global, multi-stakeholder, non-profit standards setting and certification organization. The ASI works toward responsible production, sourcing and stewardship of aluminium following an entire value chain approach.

Hydro is an active member of the Aluminium Stewardship Initiative. ASI's mission is to recognize and collaboratively foster the responsible production, sourcing and stewardship of aluminium. We have been involved at all stages in the multi-stakeholder development of ASI standards to date. We have participated in developing ASI's certification program. The third-party certification platform was launched in December 2017. Until publication of this report, forty production sites have been certified according to the ASI Performance Standard, covering Hydro's value chain from bauxite mining to finished products. Hydro has also certified several sites according to the Chain of Custody standard, and delivered the first ASI certified metal to a customer in July 2019.

Hydro reports in the GRI index 2019 on how we relate to ASI's 11 principles and underlying criteria. This is also included in external auditor's consistency check of Hydro's GRI index 2019. For the full GRI index, see www.hydro.com/gri

TCFD - Task Force on Climate-related Financial Disclosures

Hydro is a signatory to the TCFD recommendations. TCFD was formed by the Financial Stability Board in 2015. The recommendations were made public in June 2017. Hydro launched a new climate strategy in 2019 that takes into account scenario analysis. These include

- *New policies*: similar to a 2°C scenario in line with the Paris agreement
- *Current policies*: similar to a 4°C scenario and in line with already adopted measures
- *Physical risks*: stress testing of physical risks under a 6°C scenario

The table below shows an overview of Hydro's initial approach to the recommendations. All page references relate to Hydro's Annual Report 2019.

TCFD recommendations

Recommendation	Disclosure	Reference
Governance: Disclose the organization's governance around climate-related risks and opportunities		
a) Describe the board's oversight of climate-related risks and opportunities	Board developments Risk review Key developments and strategic direction Performance and Targets	32 105 13 69
Strategy: Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material		
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	Risk review Energy and climate change	21-113 , 106-116 81-83
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	Risk review Energy and climate change	21-113 , 106-116 81-83
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	In 2018, Hydro concluded a review of its climate-related risks, including physical, technological, commercial, legal and reputational risk. The review forms the basis for scenario analyses and an update of the climate strategy.	81
Risk management: Disclose how the organization identifies, assesses, and manages climate-related risks		
a) Describe the organization's processes for identifying and assessing climate-related risks	Energy and climate change	81-83
b) Describe the organization's processes for managing climate-related risks	Environment Energy and climate change	27 81-83
c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organizations' overall risk management	Business planning and risk management	124
Metric and targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material		
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	Board of Directors' report: Environment Hydro's materiality analysis 2019 Environmental statements Note E1 to the environmental statements: Greenhouse gas emissions Note E3 to the environmental statements: Energy Note E4.2 to the environmental statements: Water Note E4.3 to the environmental statements: Recycling Note E6.2 to the environmental statements: Land use and rehabilitation	27 80 222 223-228 230-231 232- 233 235
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	Environmental statements Note E1 to the environmental statements	222 223-228



Independent auditor's assurance report

We have been engaged by the Corporate Management Board of Norsk Hydro ASA ('Hydro') to provide limited assurance in respect of the Viability performance (pages 78 to 101) and Viability performance statements (pages 220 to 264) sections in the Annual Report 2019 (hereafter Viability performance 2019) of Hydro. The scope excludes future events or the achievability of the objectives, targets and expectations of Hydro and information contained in webpages referred to in the Viability performance 2019 unless specified in this report.

Our conclusion

Our conclusion has been formed on the basis of, and is subject to, the matters outlined in this report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions.

Based on the limited assurance procedures performed and the evidence obtained, as described below, nothing has come to our attention, to indicate that the Viability performance 2019 is not presented, in all material respects, in accordance with the GRI Standards; Core option and the applied reporting criteria as disclosed in the About the reporting section on page 221.

The Corporate Management Board's responsibility

The Corporate Management Board is responsible for the preparation and presentation of the Viability performance 2019 in accordance with the GRI Standards; Core option and the reporting criteria as described in the About the reporting section on page 221 in the Viability performance statements. It is important to view the information in the Viability performance 2019 in the context of these criteria.

These responsibilities include establishing such internal controls as management determines are necessary to enable the preparation of the information in the Viability performance 2019 that are free from material misstatement, whether due to fraud or error.

Our responsibility

Our responsibility is to provide a limited assurance conclusion on Hydro's preparation and presentation of the Viability performance 2019.

We conducted our engagement in accordance with the International Standard for Assurance Engagements (ISAE 3000): "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by the International Auditing and Assurance Standards Board.

ISAE 3000 requires that we plan and perform the engagement to obtain limited assurance about whether the information in the 'Viability performance 2019' is free from material misstatement.

The firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Limited assurance of the Viability performance 2019

The procedures selected depend on our understanding of the Viability performance and other engagement circumstances, and our consideration of areas where material misstatements are likely to arise. Our procedures for limited assurance on the Viability performance 2019 included:

- A risk analysis, including a media search, to identify relevant sustainability issues for Hydro in the reporting period;
- Interviews with senior management and relevant staff at corporate and selected sites concerning sustainability strategy and policies for material issues, and the implementation of these across the business;
- Enquiries to management to gain an understanding of Hydro's processes for determining material issues for Hydro's key stakeholder groups;
- Interviews with relevant staff at corporate level responsible for providing the information, carrying out internal control procedures and consolidating the data in the Viability performance 2019;
- Visits to three production sites to review the source data and the design and implementation of controls and validation procedures at local level;
- Reviewing relevant internal and external documentation, on a limited test basis, in order to determine the reliability of the Viability performance 2019;
- Reading the Viability performance 2019 to determine whether there are any material misstatements of fact or material inconsistencies based on our understanding obtained through our assurance engagement.

- Assessment of Hydro's reporting in relation to Subject Matters 1 to 221 as set out in ICMM Sustainable Development Framework: Assurance Procedure;
- Assessment of Hydro's self-declared commitment to the Aluminium Stewardship Initiative's 11 principles and underlying criteria;
- Assessment of the GRI index as provided on Hydro's webpages.
- Determination of the consistency of the sustainability information in the Hydro Communication on Progress 2019 with the information in the Viability performance 2019.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement, and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

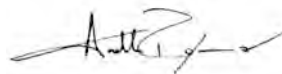
Purpose of our report

In accordance with the terms of our engagement, this assurance report has been prepared for Norsk Hydro ASA for the purpose of assisting the Corporate Management Board in determining whether Hydro's Viability performance information is prepared and presented in accordance with the GRI Standards; Core option and the applied reporting criteria as disclosed in the About the reporting section on page 221, and for no other purpose or in any other context.

Oslo, 10 March 2020
KPMG AS



Monica Hansen
State Authorized Public Accountant



Anette Rønnov
Director



Appendices to the Board of Directors' report

- 268 Alternative Performance Measures (APMs)
- 273 Country by country report
- 285 Norwegian code of practice for corporate governance
- 291 UK Modern Slavery Act transparency statement

Quick overview

This section contains information that is part of the Board of Directors' formal responsibility and exceeding the information required directly in the Board of Directors' report.

All documents are approved by the Board of Directors and included in their signatures to the Board of Directors' Report.

The Country by Country report is also included in the Board of Directors' responsibility statement in the financial statements, as required by the Norwegian Accounting Act §3-3d and the Norwegian Securities Act §5-5a.

Alternative Performance Measures (APMs)

Alternative performance measures, i.e. financial performance measures not within the applicable financial reporting framework, are used by Hydro to provide supplemental information, by excluding items that, in Hydro's view, does not give an indication of the periodic operating results or cash flows of Hydro. Financial APMs are intended to enhance comparability of the results and cash flows from period to period, and it is Hydro's experience that these are frequently used by analysts, investors and other parties. Management also uses these measures internally to drive performance in terms of long-term target setting and as basis for performance related pay. These measures are adjusted IFRS measures defined, calculated and used in a consistent and transparent manner over the years and across the company where relevant. Operational measures such as, but not limited to, volumes, prices per mt, production costs and improvement programs are not defined as financial APMs. To provide a better understanding of the company's underlying financial performance for the relevant period, Hydro focuses on underlying EBIT in the discussions on periodic *underlying* financial and operating results and liquidity from the business areas and the group, while effects excluded from underlying EBIT and net income (loss) are discussed separately in the section on reported EBIT and net income. Financial APMs should not be considered as a substitute for measures of performance in accordance with the IFRS. Disclosures of APMs are subject to established internal control procedures.

Hydro's financial APMs

- *EBIT*: Earnings before financial items and tax.
- *Underlying EBIT*: EBIT +/- identified items to be excluded from underlying EBIT as described below.
- *EBITDA*: EBIT + depreciation, amortization and impairments, net of investment grants.
- *Underlying EBITDA*: EBITDA +/- identified items to be excluded from underlying EBIT as described below + impairments.
- *Underlying net income (loss)*: Net income (loss) +/- items to be excluded from underlying income (loss) as described below.
- *Underlying earnings per share*: Underlying net income (loss) attributable to Hydro shareholders divided by a weighted average of outstanding shares (ref.: note 7.6 to the consolidated financial statements).
- *Investments*: Additions to property, plant and equipment (capital expenditures) plus long-term securities, intangible assets, long-term advances and investments in equity accounted investments, including amounts recognized in business combinations.
- *Adjusted net cash (debt)*: Short- and long-term interest-bearing debt adjusted for Hydro's liquidity positions, and for liquidity positions regarded unavailable for servicing debt, pension obligation and other obligations which are considered debt-like in nature.
- *Adjusted net cash (debt) to equity ratio*: Adjusted net cash (debt)/total equity.
- *Funds from operations to adjusted net cash (debt) ratio*: Cash generation from Hydro's wholly and partly owned operating entities before changes in net operating capital, including the contribution from equity accounted investments, and after current tax expense/adjusted net cash (debt).
- *(Underlying) RoaCE*: (Underlying) RoACE is defined as (underlying) "Earnings after tax" divided by average "Capital employed". (Underlying) "Earnings after tax" is defined as (underlying) "Earnings before financial items and tax" less "Adjusted income tax expense". Since RoaCE represents the return to the capital providers before dividend and interest payments, adjusted income tax expense excludes the tax effects of items reported as "Finance income (expense), net" and in addition, for underlying figures, the tax effect of items excluded. "Capital employed" is defined as "Shareholders' Equity", including non-controlling interest plus long-term and short-term interest-bearing debt less "Cash and cash equivalents" and "Short-term investments".
- *Capital expenditure (Capex)*: "Purchase of property, plant and equipment" plus "Purchase of other Long-term investments", adjusted for elements that are not considered cash effective.
- *Net operating capital*: "Trade and other receivables" plus "Inventories" less "Trade and other payables", adjusted for elements that are not considered to be of an operating nature.
- *Cash effective change in net operating capital*: Changes to "Trade and other receivables" plus/minus changes to "Inventories" plus/minus changes to "Trade and other payables".
- *Free cash flow*: "Net cash provided by operating activities" less "Net cash used in investing activities", adjusted for "Purchases of short-term investments and "Sales of short-term investments".

Items excluded from underlying EBIT, EBITDA, net income (loss) and earnings per share

Hydro has defined two categories of items which are excluded from underlying results in all business areas, equity accounted investments and at group level. One category is the timing effects, which are unrealized changes to the market value of certain derivatives and the metal effect in Rolled Products. When realized, effects of changes in the market values since the inception are included in underlying EBIT. Changes in the market value of the trading portfolio are included in underlying results. The other category includes material items which are not regarded as part of underlying business performance for the period, such as major rationalization charges and closure costs, major impairments of property, plant and equipment, effects of disposals of businesses and operating assets, as well as other major effects of a special nature. Materiality is defined as items with a value above NOK 20 million. All items excluded from underlying results are reflecting a reversal of transactions recognized in the financial statements for the current period, except for the metal effect. Part-owned entities have implemented similar adjustments.

- *Unrealized derivative effects on LME related contracts* include unrealized gains and losses on contracts measured at market value, which are used for operational hedging purposes related to fixed-price customer and supplier contracts, where hedge accounting is not applied. Also includes elimination of changes in fair value of certain internal physical aluminium contracts.
- *Unrealized derivative effects on power and raw material contracts* include unrealized gains and losses on embedded derivatives in raw material and power contracts for Hydro's own use and for financial power contracts used for hedging purposes, as well as elimination of changes in fair value of embedded derivatives within certain internal power contracts.
- *Metal effect in Rolled Products* is an effect of timing differences resulting from inventory adjustments due to changing aluminium prices during the production, sales and logistics process, lasting two to three months. As a result, margins are impacted by timing differences resulting from the FIFO inventory valuation method (first in, first out), due to changing aluminium prices during the process. The effect of inventory write-downs is included. Decreasing aluminium prices in Euro results in a negative metal effect on margins, while increasing prices have a positive effect.
- *Significant rationalization charges and closure costs* include costs related to specifically defined major projects, and not considered to reflect periodic performance in the individual plants or operations. Such costs involve termination benefits, dismantling of installations and buildings, clean-up activities that exceed legal liabilities, etc. Costs related to regular and continuous improvement initiatives are included in underlying results.
- *Impairment charges (PP&E and equity accounted investments)* relate to significant write-downs of assets or groups of assets to estimated recoverable amounts in the event of an identified loss in value. Gains from reversal of impairment charges are simultaneously excluded from underlying results.
- *Alunorte agreements – provision* refers to the provision recognized in relation to the TAC and TC agreements with the Government of Pará and Ministério Público made on September 5, 2018.
- *Other effects* include insurance proceeds covering asset damage, legal settlements, etc. Insurance proceeds covering lost income are included in underlying results.
- *Pension* includes recognition of pension plan amendments and related curtailments and settlements.
- *Transaction related effects* reflect the net measurement (gains) losses relating to previously owned shares in acquired businesses and inventory valuation expense related to these transactions, as well as a net (gain) loss on divested businesses and/or individual major assets.
- *Items excluded in equity accounted investments* reflects Hydro's share of items excluded from underlying net income in Qatalum and are based on Hydro's definitions, including both timing effects and material items not regarded as part of underlying business performance for the period.
- *Net foreign exchange (gain) loss*: Realized and unrealized gains and losses on foreign currency denominated accounts receivable and payable, funding and deposits, embedded currency derivatives in certain power contracts and forward currency contracts purchasing and selling currencies that hedge net future cash flows from operations, sales contracts and operating capital.
- *Calculated income tax effect*: In order to present underlying net income on a basis comparable with our underlying operating performance, the underlying income taxes are adjusted for the expected taxable effects on items excluded from underlying income before tax.
- *Other adjustments to net income* include other major financial and tax related effects not regarded as part of the underlying business performance of the period.

Items excluded from underlying EBIT¹⁾	Year	Year
NOK million	2019	2018
Alunorte agreements - provision ²⁾	80	519
Impairment charges ⁵⁾	145	-
Bauxite & Alumina	225	519
Unrealized derivative effects on LME related contracts	90	(143)
Unrealized derivative effects on power contracts	(17)	(218)
Impairment charges ⁵⁾	506	-
Primary Metal	579	(361)
Unrealized derivative effects on LME related contracts	235	(200)
Metal Markets	235	(200)
Unrealized derivative effects on LME related contracts	(82)	111
Metal effect	370	(73)
Significant rationalization charges and closure costs ³⁾	1,088	39
Other effects ⁴⁾	(99)	-
Rolled Products	1,277	77
Unrealized derivative effects on LME related contracts	(163)	299
Impairment charges ⁵⁾	255	-
Significant rationalization charges and closure costs ³⁾	396	40
Pension ⁶⁾	(62)	40
Transaction related effects ⁷⁾	21	-
Other effects ⁸⁾	209	237
Extruded Solutions	656	616
Unrealized derivative effects on power contracts	(6)	(7)
Other effects ⁹⁾	(42)	-
Energy	(48)	(7)
Unrealized derivative effects on power contracts ¹⁰⁾	(75)	(36)
Unrealized derivative effects on LME related contracts ¹⁰⁾	11	(27)
Other effects ¹¹⁾	-	(34)
Other and eliminations	(64)	(97)
Items excluded from underlying EBIT	2,860	547

- 1) Negative figures indicate reversal of a gain and positive figures indicate reversal of a loss.
- 2) Alunorte agreements - provision relates to provisions for the TAC and TC agreements with the Government of Pará and Ministério Público made on September 5, 2018, including later adjustments for changes in cost estimates.
- 3) Significant rationalization and closure costs include a provision for costs related to reduction of overcapacity, closures and environmental clean-up activities in Rolled Products and Extruded Solutions.
- 4) Other effects in Rolled Products refer to a partly reversal of provisions recognized in 2017 related to the customs case in Germany.
- 5) Impairment charges include write downs of undeveloped bauxite resources in Brazil considered unlikely for future development, the Svalco smelter and various assets in Extruded Solutions.
- 6) Pension in Extruded Solutions include in 2019 a gain of NOK 62 million due to partially settled pension liabilities in Hydro Extrusion US LLC and in 2018 a charge of NOK 40 million due to remeasurement of all UK schemes with Guaranteed Minimum Pensions (GMP) required to be adjusted to equalize pension benefits for gender. The remeasurement is based on accrued pension benefits in the period between 1990 and 1997.
- 7) Transaction related effects in Extruded Solutions include for 2019 a net gain of NOK 14 million related to divestment of a plant and a loss of NOK 35 million related to revaluation of Hydro's pre-transactional 50 percent share in Technal Middle East and to fair value allocated to sold inventory.
- 8) Other effects in Extruded Solutions include for 2019 an environmental provision of NOK 171 million related to a closed site. A charge of NOK 39 million are adjustments to the value of certain assets in relation to the Sapa acquisition. In 2018 other effects include a charge of NOK 80 million due to adjustments to the value of certain assets in relation to the Sapa acquisition. Subsequent to the release of fourth quarter 2018 on February 7, 2019, an agreement in principle was reached between Sapa Profiles Inc. (SPI) and the United States Department of Justice (DOJ) Civil and Criminal Divisions. Following the agreement, an increase, NOK 157 million, of the provision was recognized in the final annual results of 2018 (see note 35 in the 2018 Annual report).
- 9) Other effects in Energy include for 2019 a dilution gain of NOK 42 million as the effect of an equity issuance in our associate Corvus, reducing our ownership share from 24.8 to 21.1 percent.
- 10) Unrealized derivative effects on power contracts and LME related contracts result from elimination of changes in the valuation of embedded derivatives within certain internal power contracts and in the valuation of certain internal aluminium contracts.
- 11) Other effects in Other and eliminations in 2018 include the remeasurement of environmental liabilities related to closed business in Germany.

Underlying EBITDA	Year	Year
NOK million	2019	2018
EBITDA ¹⁾	9,878	15,796
Items excluded from underlying EBIT	2,860	547
Reversal of impairments ²⁾	(906)	-
Underlying EBITDA	11,832	16,344

1) See Note 1.4 Operating and geographic segment information in the Financial statements

2) See the section Reported EBIT and net income in the Board of Directors' report

Underlying earnings per share NOK million	Year 2019	Year 2018
Net income (loss)	(2,370)	4,323
Items excluded from underlying net income (loss) ¹⁾	3,078	1,495
Underlying net income (loss)	708	5,819
Underlying net income attributable to non-controlling interests	(365)	184
Underlying net income attributable to Hydro shareholders	1,073	5,635
Number of shares	2,047	2,046
Underlying earnings per share	0.52	2.75

1) See Items excluded from underlying net income (loss) in the section Financial results in the Board of Directors' report

Adjusted net cash (debt), adjusted net cash (debt) to equity ratio and funds from operations to adjusted net cash (debt) ratio

Hydro's capital management measures are described in Note 7.1 Capital management in the Financial statements, including reconciliations and comparable information

Underlying Return on average Capital Employed (RoCE)

Hydro uses underlying RoCE to measure the performance for the group as a whole and within its operating segments, both in absolute terms and comparatively from period to period. Management views this measure as providing additional understanding of the rate of return on investments over time in each of its capital intensive businesses and in the operating results of its business segments.

Earnings after tax NOK million	Reported		Underlying	
	2019	2018	2019	2018
EBIT	499	8,522	3,359	9,069
Adjusted Income tax expense ¹⁾	(1,430)	(2,757)	(2,055)	(2,721)
Earnings after tax	(931)	5,765	1,304	6,348

Capital Employed NOK million	Dec 31 2019	Sep 30 2019	Jun 30 2019	Mar 31 2019	Dec 31 2018	Sep 30 2018	Jun 30 2018	Mar 31 2018
Current assets ²⁾	40,410	45,387	46,375	48,895	48,027	46,381	46,757	44,229
Property, plant and equipment	74,243	74,025	73,193	72,882	71,299	66,251	66,683	69,945
Other non-current assets	36,494	36,103	35,729	35,493	35,559	34,608	34,901	34,205
Current liabilities ³⁾	(23,534)	(23,811)	(24,702)	(26,819)	(26,444)	(25,803)	(26,327)	(25,473)
Non-current liabilities ³⁾	(31,771)	(32,509)	(29,882)	(28,958)	(29,018)	(27,482)	(27,325)	(28,170)
Capital Employed	95,841	99,195	100,713	101,494	99,422	93,954	94,689	94,736

Return on average Capital Employed (RoCE) ⁴⁾	Reported		Underlying	
	2019	2018 (Restated)	2019	2018 (Restated)
Hydro	(0.9) %	6.0 %	1.3 %	6.6 %

1) Adjusted Income tax expense is based on reported and underlying tax expense adjusted for tax on financial items.

2) Excluding cash and cash equivalents and short-term investments.

3) Excluding interest-bearing debt.

4) Average Capital Employed measured over the last 4 quarters to reflect the return for the full year. Restated from measuring only opening and closing balance (2 quarter average)

Capital expenditure (Capex)

Capex is a measure for the cash amount spent on investment activities related to property, plant and equipment and other long-term investments as recognized in the consolidated statements of cash flows for the period. Hydro uses this measure to drive optimization of capital allocation.

Capital expenditure

NOK million	2019	2018
Purchase of property, plant and equipment	(8,726)	(7,219)
Purchase of other long-term investments	(698)	(389)
Sum	(9,424)	(7,608)
Adjustments ¹⁾	(219)	(191)
Capital expenditure	(9,643)	(7,799)

1) Adjusted for changes in prepayments and payables for capex, indirect taxes reclassification, Enova investment grant, transaction related adjustments

Net operating capital and Cash effective change in net operating capital

These measures are used by Hydro to monitor and follow up on cash generation and to drive financial performance.

Net operating capital	Dec 31	Sep 30	Dec 31	Sep 30
NOK million	2019	2019	2018	2018
Trade and other receivables ¹⁾	18,959	23,007	20,744	21,727
Inventories ¹⁾	20,816	21,679	26,483	23,916
Trade and other payables ¹⁾	(18,692)	(19,716)	(20,381)	(19,906)
Sum	21,083	24,971	26,845	25,736
Adjustments ²⁾	42	250	321	310
Net operating capital	21,125	25,221	27,166	26,046

1) See Consolidated balance sheets

2) Elements that are not considered to be of an operating nature, e.g., short-term income tax receivables, external accrued interest expense, prepayments and payables for investments, accrued dividends, provision for loss on power purchase agreement, periodization of revenues not yet invoiced

Cash effective change in net operating capital

NOK million	2019	2018
Change in Trade and other receivables ¹⁾	1,869	(1,412)
Change in Inventories ¹⁾	5,552	(5,599)
Change in Trade and other payables ¹⁾	(1,812)	675
Cash effective change in net operating capital	5,609	(6,336)

1) See Consolidated statements of cash flows

Free cash flow

Free cash flow is a measure of the net cash generation after investing activities. Hydro uses this measure to drive financial performance.

Free cash flow

NOK million	2019	2018
Net cash provided by operating activities ¹⁾	12,550	7,025
Net cash used in investing activities ¹⁾	(9,173)	(7,196)
Adjusted for Purchases of short-term investments ¹⁾	52	-
Adjusted for Sales of short-term investments ¹⁾	(18)	-
Free cash flow	3,411	(171)

1) See Consolidated statements of cash flows

Country by country report

Hydro's country by country report has been developed to comply with legal requirements as stated in the Norwegian Accounting Act §3-3d and the Norwegian Security Trading Act §5-5a, valid from 2014, and updated in 2017, and replaces our former reporting on payments to host governments according to the Extractive Industries Transparency Initiative (EITI). Our reporting includes, and goes beyond, the EITI requirements. According to the Norwegian Accounting Act, the country-by-country reporting should be on a project level, and payments should be reported per public authority. Following a thorough evaluation, we have defined "project" as legal entity in the report, and "public authority" as the three levels federal; state(s); and municipality(-ies).

The reporting requirement applies to Hydro as a Norwegian listed company with exploration and extractive activities. Currently, this includes Hydro's consolidated operations in Brazil, through exploration and extractive activities in Paragominas, in the state of Pará. On a voluntary basis, and in line with our EITI reporting since 2005, we also include the alumina refinery Alunorte. Alumina is refined from bauxite and is the commercial product from Hydro's Bauxite & Alumina business area.

Hydro's primary aluminium production facility Albras is also closely linked to the extraction of raw materials in Pará. In order to better illustrate the tax contribution from Hydro's aluminium value chain in Pará, Albras is included on a voluntary basis in the country-by-country report. In addition, Hydro voluntarily report on indirect tax contributions not covered by the requirements in the country by country report.

To comply with the Norwegian country-by-country regulation, Hydro is required to report on certain information at corporate level related to legal entities, where they are registered, number of employees, and interest paid to other legal entities in Hydro within another jurisdiction. From 2017, it is also required to give a short description of each legal entity's activities, revenue, income before tax, tax accrued and paid in the reporting year, and accumulated earnings.

The Country-by-country report is approved by the board of directors and included in their responsibility statement.

Payments to authorities per project and authority (exploration and extractive activities, alumina refining and aluminium production) in 2019

Extractive related activities (all in Brazil) ¹⁾	Taxes and fees ²⁾ NOK million	Royalties NOK million	License fees ³⁾ NOK million	Infrastructure, contractual ⁴⁾ NOK million	Infrastructure, voluntary ⁴⁾ NOK million	Investments NOK million	Revenue ⁵⁾ NOK million	Production volume 1 000 mt	Total expenses ^{5) 6)} NOK million
Mineracao Paragominas SA, total	200	83	2	7	1	276	2,696	7,360	2,246
Federal	146	8	2						
Pará State	54	25	-						
Paragominas municipality	-	50	-						
Norsk Hydro Brasil Ltda, total	15	-	-		-	9	4	-	40
Federal	15	-	-						
Rio de Janeiro State	-	-	-						
São Paulo Municipality	-	-	-						
Alunorte - Alumina do Norte do Brasil SA, total	55	-	-		31	2,009	13,425	4,487	13,016
Federal	48	-	-						
Pará State	7	-	-						
Barcarena Municipality	-	-	-						
Albras - Alumínio Brasileiro SA, total	1	-	-		5	641	5,793	241	6,812
Federal	-	-	-						
Pará State	1	-	-						
Barcarena Municipality	-	-	-						
Total⁷⁾	271	83	2	7	37	2,936	21,918	12,089	22,114

- 1) In 2019, Hydro's extractive activities did not have the following types of payments to host authorities:
 - production entitlements
 - dividends
 - signature, findings and production bonuses
 - stocks, shares or other ownership rights
- 2) Taxes and fees (income, profit and production) except taxes and fees on consumption such as VAT, withholding taxes on behalf of employees, sales tax. Figures are not directly comparable to the further contry by country report.
- 3) License, lease or access fees or other payments for licenses or commissions
- 4) Payments on improved infrastructure, either contractual based on exploration or operational licenses, or voluntary is based on Hydro's reporting on social investments, please see note S9 to the social statements in Hydro's Annual Report 2019
- 5) Including power procurement and sales
- 6) Costs at Alunorte include purchase of bauxite from Paragominas. Costs at Albras include purchase of alumina from Alunorte.
- 7) Only figures where a total is presented can be consolidated.

Other tax contributions to authorities in Brazil

The Brazilian tax system is complex and volatile. In addition to the direct taxes reported above on income, profit and production, Brazil has several indirect taxes levied at the federal and state levels, and other taxes levied at the municipal level.

For Hydro, there are three relevant indirect tax mechanisms not covered by the country-by-country requirements, i.e ICMS and PIS/COFINS.

ICMS is a Brazilian state tax on the sale of goods, freight and certain services, similar to VAT. ICMS is intended to be a non-cumulative tax, which means that sales are generating ICMS debits with the seller, and purchases are generating ICMS credits with the buyer. However, as export transactions are exempt from ICMS and not generating ICMS debits, exporters accumulate ICMS credits that cannot be offset with any other taxes. As ICMS is an indirect tax, the amounts are reported as expenses in Hydro's financial statements rather than as income tax.

In the state of Pará, Hydro is subject to a tax regime that aims at preventing the accumulation of ICMS recognized credits, and reduces net payable ICMS. From our operations, we generate ICMS tax revenue to Pará when purchasing diesel and fuel oil, when Albras acquires electricity, and also on sales of products to customers located outside the state.

The ICMS regime Hydro is subject to requires Hydro to comply with certain conditions related to vertical integration of aluminium production in Pará. It also requires Hydro to contribute to the development in the region and enable sustainable growth in Pará.

The ICMS deferral is subject to approval by Brazil's National Council of Finance Policy (CONFAZ). In 2018, the Public Auditing Prosecutors for the State of Pará (MP-C/PA) initiated a general process before the State Accounting Court to better understand approvals, compliance and transparency of tax incentives established by the State of Pará.

PIS and COFINS are two social contribution taxes charged on gross income, in most cases at the rate of 9.25 percent. Hydro's group companies in Brazil are charged under a non-cumulative system that resembles VAT. Similar to ICMS, export transactions are not subject to this tax. As a result, Brazilian exporters, like Alunorte and Albras, accumulate credits that can be either reimbursed or offset against debts of other federal taxes.

In addition to the indirect taxes described above, Brazilian municipalities levy a property tax. The property tax, IPTU, is a tax levied on the ownership or possession of urban land and property located in the urban area within the municipality. IPTU is due yearly based on the value of the property, according to rates and conditions foreseen in each municipality's legislation.

The table below includes Hydro entities involved in extractive activities as well as other Hydro entities in the state of Pará.

Other taxes paid to authorities in Brazil*

Extractive related activities	ICMS	PIS	COFINS	IPTU	Total contribution
	NOK million	NOK million	NOK million	NOK million	NOK million
Mineracao Paragominas SA, total	30	1	3	-	33
Federal	-	1	3	-	3
Pará State	30	-	-	-	30
Paragominas municipality	-	-	-	-	-
Norsk Hydro Brasil Ltda, total	-	2	7	-	9
Federal	-	2	7	-	9
Rio de Janeiro State	-	-	-	-	-
São Paulo Municipality	-	-	-	-	-
Alunorte - Alumina do Norte do Brasil SA, total	467	2	10	18	497
Federal	-	2	10	-	12
Pará State	467	-	-	18	485
Barcarena Municipality	-	-	-	-	-
Albras - Alumínio Brasileiro SA, total	327	1	3	14	345
Federal	-	1	3	-	3
Pará State	327	-	-	14	342
Barcarena Municipality	-	-	-	-	-
Total	824	5	22	33	884

*Tax off-sets are not included

Further country by country information for all consolidated legal entities

The Norwegian country by country reporting requirement as stated in the Norwegian Accounting Act and the Country by Country Regulation also require reporting on certain information at corporate level related to legal entities, as included in the table below.

Hydro's subsidiaries have both external revenue derived from sale to Hydro's end customers, and internal revenue derived from sale to other Hydro entities. In the table below both revenue streams are included per legal entity, but in Hydro's consolidated financial statements all internal transactions have been eliminated to arrive at Hydro's revenue. The sum of the different items for Hydro's subsidiaries will therefore not add up to the respective consolidated figures.

In order to present a Grand Total in the country by country report that is comparable to Hydro's consolidated financial statements, we have included all group eliminations as a separate line. These include, but are not limited to, eliminations of internal revenue and cost, internal receivables and payables, distributed profit such as dividends within the group, goodwill and excess values not attributable to individual legal entities, accumulated profits allocated to non-controlling interests and all joint operations and joint ventures.

Assets and liabilities in subsidiaries that have been acquired have been remeasured to fair value in Hydro's financial statements. This value adjustment, often referred to as excess value, represents the difference between the fair value of the company as paid by Hydro, and the carrying value of assets and liabilities as recognized by the subsidiary at the time of purchase. This premium is not reflected in the subsidiaries local statutory reporting. Due to this, figures reported in Hydro's country by country report are not necessarily comparable to the entities' local statutory reporting. Acquired entities are included from the date of acquisition. As a result of rounding adjustments, the figures in one or more of the columns in the table below may not add up to the total of that column.

The information is included in the independent auditor's assurance report.

Further country by country information for all consolidated legal entities

Jurisdiction	Legal entity	Description of the entity's activity	Ownership 31.12	Number of permanent employees ¹⁾	Number of temporary employees ¹⁾	Interest paid to Hydro legal entities in another jurisdiction, NOK million	Revenue, NOK million ²⁾	Income before tax, NOK million ³⁾	Income taxes, NOK million ⁴⁾	Income taxes paid, NOK million ⁵⁾	Retained earnings, NOK million ⁶⁾
Argentina	Hydro Extrusion Argentina SA	Extrusion production	100%	103	-	2	195	15	2	7	40
Total Argentina				103	-	2	195	15	2	7	40
Australia	Hydro Aluminium Australia Pty. Limited ⁷⁾	Local holding company	100%	-	-	-	1,246	-44	-	-	265
	Hydro Aluminium Kurri Kurri Pty. Limited	Real estate	100%	6	-	-	18	-9	-	-	-1,972
Total Australia				6	-	-	1,264	-53	-	-	-1,707
Austria	Hydro Building Systems Austria GmbH	Sales company	100%	34	-	-	227	2	1	-	56
	Hydro Components Nenzing GmbH	Fabrication of extruded products	100%	110	14	-	118	-8	-2	-	12
	Hydro Extrusion Nenzing GmbH	Extrusion production	100%	309	10	-	1,958	159	40	-	340
	Hydro Holding Austria GmbH	Local holding company	100%	-	-	-	-	79	-1	54	264
Total Austria				453	24	-	2,303	231	38	54	672
Bahrain	Hydro Building Systems Middle East WLL ⁸⁾	Building systems production	100%	63	-	-	262	189	-	-	185
Total Bahrain				63	-	-	262	189	-	-	185
Belgium	Hydro Allease NV	Support services	100%	-	-	-	4	-1	-	-	18
	Hydro Aluminium Belgium BVBA	Support services	100%	-	-	-	-	-	-	-	-
	Hydro Building Systems Belgium NV	Building systems production	100%	216	3	-	470	-28	-	-	-199
	Hydro Extrusion Lichtervelde NV	Extrusion production	100%	391	4	-	1,558	35	-5	4	369
	Hydro Extrusion Raeren S.A.	Extrusion production	100%	183	22	-	730	5	1	1	150
	Norsk Hydro EU Sprl	Public affairs	100%	2	1	-	5	-	-	-	1
	Hydro Extrusion Eupen SA	Dies production	100%	50	-	-	62	-48	-15	-	76
	Hydro Precision Tubing Lichtervelde NV	Precision tubing production	100%	-	-	1	518	-29	-15	-	70
	Sapa Precision Tubing Seneffe S.A.	<i>Company is dormant</i>	100%	-	-	-	-	-	-	-	10
Total Belgium				842	30	1	3,347	-65	-34	6	493
Brazil	ALBRAS - Alumínio Brasileiro SA	Primary aluminium production	51%	1,223	75	-	5,793	-1,089	-369	8	1,946
	ALUNORTE - Alumina do Norte do Brasil S.A.	Alumina refining	92.1%	2,085	117	37	13,425	-440	-126	111	2,013
	Ananke Alumina SA	Local holding company	100%	-	-	-	30	30	10	9	1,619
	Atlas Alumínio SA	Local holding company	100%	-	-	-	304	266	67	63	590
	Calypso Alumina SA	Local holding company	100%	-	-	-	-	-	-	-	-2
	CAP - Companhia de Alumina do Pará SA	Planned alumina refinery	81%	-	-	-	-	-27	2	1	-415
	Hydro Extrusion Brasil S.A. ⁹⁾	Extrusion and precision tubing production	100%	897	26	14	1,516	-102	6	-	-149
	Mineração Paragominas SA	Bauxite mining	100%	1,528	83	-	2,696	500	139	157	880
	Norsk Hydro Brasil Ltda.	Local holding company	100%	363	37	-	11	-27	15	18	-448
	Norsk Hydro Energia Ltda.	Power trading & Energy services	100%	7	4	-	841	1	-	-	7
Total Brazil				6,103	342	51	24,617	-888	-256	367	6,040
Canada	Hydro Aluminium Canada & Co. Ltd. ¹⁰⁾	Local holding company	100%	1	-	2	2,087	86	35	45	1,453
	Hydro Aluminium Canada Inc.	Local holding company	100%	-	-	-	-	-	-	-	26
	Hydro Extrusion Canada Inc.	Extrusion production	100%	547	4	3	2,358	99	13	-19	753
Total Canada				548	4	5	4,445	185	48	26	2,233
China & Hong Kong	Hydro Aluminium Beijing Ltd.	Sales company	100%	10	-	-	948	-17	-4	-	58

	Hydro Building Systems (Beijing) Co. Ltd.	Sales company	100%	27	1	-	59	-8	-	-	-78
	Hydro Extrusion (Shanghai) Co. Ltd (previously Sapa Extrusion (Shanghai) Co. Ltd)	Fabrication of extruded products	100%	240	-	-	298	44	12	14	174
	Hydro Precision Tubing (Shanghai) Co. Ltd. (previously Sapa Precision Tubing Shanghai Co. Ltd.)	Precision tubing production	100%	51	-	-	94	5	4	-	12
	Hydro Precision Tubing (Suzhou) Co. Ltd.	Extrusion and precision tubing production	100%	350	-	-	833	37	11	5	-7
	Sapa Asia Limited	<i>Company is in liquidation</i>	100%	-	-	-	1	-	-	-	-5
	Sapa Extrusion (Jiangyin) Co. Ltd.	Extrusion production	100%	-	-	-	-	-	-	-	-27
	Sapa (Shanghai) Management Co. Ltd.	<i>Company dissolved in 2019</i>	100%	-	-	-	-	-	-	-	-
Total China & Hong Kong				678	1	-	2,233	60	22	19	128
Croatia	Hydro Building Systems Croatia d.o.o.	Building systems production	100%	11	-	-	5	-	-	-	-
Total Croatia				11	-	-	5	-	-	-	-
Czech Republic	Hydro Building Systems Czechia sro	Sales company	100%	8	-	-	7	-	-	-	1
Total Czech Republic				8	-	-	7	-	-	-	1
Denmark	Hydro Aluminium Rolled Products Denmark A/S	Sales company	100%	2	-	-	4	1	-	-	6
	Hydro Extrusion Denmark A/S	Extrusion production	100%	291	-	1	1,298	45	10	-	206
	Hydro Holding Denmark A/S	Local holding company	100%	-	-	4	-	-5	-1	38	1,408
	Hydro Precision Tubing Tønder A/S	Precision tubing production	100%	411	-	1	1,288	49	11	-	582
Total Denmark				704	-	6	2,590	90	20	38	2,203
Estonia	Hydro Extrusion Baltics AS	Extrusion production	100%	13	-	-	88	4	1	-	13
Total Estonia				13	-	-	88	4	1	-	13
Finland	Hydro Extrusion Finland Oy	Sales company	100%	10	1	-	153	2	1	1	21
Total Finland				10	1	-	153	2	1	1	21
France	Extrusion Services S.a.r.l	Local holding company	100%	41	-	-	575	45	13	-1	188
	Hydro Aluminium France S.A.S.	Sales company	100%	8	-	-	15	5	1	-	12
	Hydro Aluminium Sales and Trading s.n.c.	Sales company	100%	3	-	-	6	-	-	-	2
	Hydro Building Systems France Sarl ¹¹⁾	Building systems production	100%	942	44	-	3,107	209	77	18	550
	Hydro Extrusion Albi SAS ¹²⁾	Extrusion production	100%	266	6	-	966	28	4	-	125
	Hydro Extrusion Lucé/Châteauroux SAS	Extrusion production	100%	342	6	1	1,010	-29	2	4	9
	Hydro Extrusion Puget SAS	Extrusion production	100%	276	5	1	608	-143	9	2	-206
	Hydro Holding France SAS	Local holding company	100%	-	-	9	-	-365	-68	-2	-652
	Hydro Tool Center SAS	Tool and spare parts services	100%	5	-	-	38	1	-	-	5
	Hydro Shared Services France (previously Sapa Shared Services France)	IT shared services	100%	13	-	-	19	1	-	1	2
Total France				1,896	61	11	6,344	-248	40	22	35
Germany	Eugen Notter GmbH	Building systems production	100%	27	1	-	18	-3	-1	-	11
	Hydro Aluminium Deutschland GmbH	Local holding company	100%	67	1	-	26	33	211	26	2,791
	Hydro Aluminium Dormagen GmbH	Recycling	100%	24	20	-	48	2	-	-	5
	Hydro Aluminium Gießerei Rackwitz GmbH	Remelter	100%	61	7	-	1,057	104	-2	-	32
	Hydro Aluminium High Purity GmbH	High-purity aluminium production	100%	61	8	-	297	-7	-6	-	50
	Hydro Aluminium Recycling Deutschland GmbH	Remelter	100%	24	6	-	48	-4	-	-	79
	Hydro Aluminium Rolled Products GmbH	Rolling mills and primary aluminium production	100%	3,397	206	-	21,921	-1,195	-132	15	4,474
	Hydro Building Systems Coating GmbH ¹³⁾	Building systems production	100%	-	-	-	48	-	-3	-	6
	Hydro Building Systems Germany GmbH	Building systems production	100%	457	36	1	1,608	20	4	-	133

	Hydro Energy GmbH	Energy sourcing	100%	-	-	-	6	-39	-	-	64
	Hydro Extrusion Deutschland GmbH	Extrusion production	100%	457	-	5	1,587	23	-11	-	117
	Hydro Extrusion Offenburg GmbH	Extrusion production	100%	209	-	-	629	2	-	-	107
	Hydro Holding Offenburg GmbH	Local holding company	100%	44	-	5	48	-	-8	-1	20
	Hydro Precision Tubing Remscheid GmbH	Precision tubing production	100%	134	-	-	184	-24	-	-	37
	Norsk Hydro Deutschland Verwaltungs GmbH	<i>Company is in liquidation</i>	100%	-	-	-	-	-	-	-	-2
	Sapa Germany GmbH (previously Hydro Holding ULM GmbH)	Local holding company	100%	-	-	10	-	-11	11	32	118
	SEGN Standort-Entwicklungs-Gesellschaft Nabwerk mbH	Real estate	100%	-	-	-	-	-	-	-	-
	VAW-Innwerk Unterstützungs-Gesellschaft GmbH	Pension fund	77.5%	-	-	-	-	-2	-	-	214
Total Germany				4,962	285	21	27,524	-1,099	62	72	8,256
Greece	Hydro Building Systems A.E.	<i>Company is in liquidation</i>	100%	-	-	-	-	-2	-	-	-35
Total Greece				-	-	-	-	-2	-	-	-35
Hungary	Hydro Extrusion Hungary Kft	Extrusion production and support services	100%	1,617	-	1	3,091	84	41	41	91
Total Hungary				1,617	-	1	3,091	84	41	41	91
India	Sapa Extrusion India Pvt. Ltd. ¹⁴⁾	Extrusion, precision tubing and building systems production	100%	485	3	-	470	-28	-1	1	-456
Total India				485	3	-	470	-28	-1	1	-456
Italy	Hydro Aluminium Metal Products S.r.l.	Sales company	100%	2	-	-	9	1	-	-	17
	Hydro Building Systems Italy S.P.A.	Building systems production	100%	328	8	-	1,325	11	14	-	181
	Hydro Extrusion Italy S.r.l.	Extrusion production	100%	318	11	-	1,286	-5	13	6	305
	Hydro Holding Italy S.P.A.	Local holding company	100%	-	-	-	-	-	-2	-4	878
Total Italy				648	19	-	2,620	7	25	2	1,381
Japan	Hydro Aluminium Japan KK	Sales company	100%	6	-	-	192	9	3	2	61
Total Japan				6	-	-	192	9	3	2	61
Lithuania	Hydro Building Systems Lithuania UAB	Sales company	100%	-	-	-	82	5	1	1	15
	Hydro Extrusion Lithuania UAB	Extrusion production	100%	182	-	-	144	9	2	-	34
Total Lithuania				182	-	-	226	13	3	1	49
Luxembourg	Hydro Aluminium Clervaux S.A.	Remelter	100%	50	6	-	1,256	96	28	38	232
Total Luxembourg				50	6	-	1,256	96	28	38	232
Mexico	Hydro Aluminium Metals Mexico S. de R.L.	Sales company	100%	-	-	-	-	-	-	-	-
	Hydro Precision Tubing Monterrey S. de R.L. de C.V.	Precision tubing production	100%	129	1	-	82	2	1	4	129
	Hydro Precision Tubing Reynosa S. de R.L. de C.V.	Extrusion and precision tubing production	100%	225	4	-	87	8	4	4	25
	Hydro Precision Tubing Services Monterrey S. de R.L. de C.V.	Support services	100%	-	-	-	35	2	2	1	-1
Total Mexico				354	5	-	205	11	7	9	153
Netherlands	Hydro Albras B.V.	Local holding company	100%	-	-	-	-	-	-	-	-
	Hydro Aluminium Brasil Investment B.V.	Local holding company	100%	-	-	-	-	-9	-	-	895
	Hydro Aluminium Investment B.V.	Local holding company	100%	-	-	-	-	-	-	-	-
	Hydro Aluminium Netherlands B.V.	Local holding company	100%	-	-	-	-	51	-	-	269

	Hydro Aluminium Pará B.V.	Local holding company	100%	-	-	-	-	-	-	-	-124
	Hydro Aluminium Qatalum Holding B.V.	Local holding company	100%	-	-	-	-	195	-	-	924
	Hydro Aluminium Rolled Products Benelux B.V.	Sales company	100%	4	-	-	6	1	-	-	2
	Hydro Alunorte B.V.	Local holding company	100%	-	-	-	-	-	-	-	-
	Hydro Building Systems Netherlands B.V.	Building systems production	100%	-	-	-	47	6	4	-	-
	Hydro CAP B.V.	Local holding company	100%	-	-	-	-	-	-	-	-400
	Hydro Extrusion Drunen B.V.	Extrusion production	100%	426	10	-	1,402	-114	26	-	707
	Hydro Extrusion Holding Netherlands B.V.	Real estate	100%	-	-	-	-	16	3	-	-13
	Hydro Extrusion Hoogezand B.V.	Extrusion production	100%	166	1	-	625	22	2	6	204
	Hydro Holding Netherlands B.V.	Local holding company	100%	-	-	5	-	-6	-1	-	52
	Hydro Paragominas B.V.	Local holding company	100%	-	-	-	-	225	15	15	87
	Norsk Hydro Holland B.V.	Local holding company	100%	4	-	-	15	775	8	-	9,787
	Sapa Holdings (Nederland) B.V.	<i>Company dissolved in 2019</i>	100%	-	-	-	-	-	-	-	-
Total Netherlands				600	11	5	2,095	1,162	56	21	12,392
Norway	Hycast AS	Development and design of casting technology and related sales	100%	55	2	-	291	14	4	11	115
	Hydro Aluminium AS	Primary aluminium production	100%	2,390	519	327	46,022	1,449	23	873	21,239
	Hydro Aluminium Rolled Products AS	Rolling mill	100%	640	41	8	4,420	160	35	-	815
	Hydro Energi AS	Power production	100%	177	13	-	8,254	-707	114	520	-1,884
	Hydro Energi Invest AS	Local holding company	100%	-	-	-	-	-2	-	-	-
	Hydro Extruded Solutions AS	Local holding company	100%	96	1	81	-1	347	85	78	1,388
	Hydro Extrusion Norway AS	Extrusion production	100%	105	8	1	342	-3	-1	-	51
	Hydro Invest Porsgrunn AS	<i>Company dissolved in 2019</i>	100%	-	-	-	-	-	-	-	-
	Hydro Kapitalforvaltning AS	Local holding company	100%	-	-	-	10	-	-	-	-
	Hydro Vigelands Brug AS	High-purity aluminium production	100%	34	4	2	89	7	1	-	95
	Hydro Vigelandsfoss AS	Power production	100%	-	-	-	73	41	19	26	187
	Industriforsikring AS	Insurance	100%	-	-	-	153	52	-3	1	500
	Norsk Hydro ASA	Parent company	-	319	13	-	250	4,688	19	136	32,448
	RSK Holding AS ¹⁵⁾	Local holding company	100%	-	-	-	457	339	167	-	77
	Røldal-Suldal Kraft AS	Power production	91.3%	-	-	-	532	389	202	160	121
	Sveigfós AS	<i>Company is dormant</i>	100%	-	-	-	-	-	-	-	1
	Sør-Norge Aluminium AS	Primary aluminium production	100%	320	95	5	2,311	245	54	-	1,400
	Vækerø Gård Barnehave ANS	Company kindergarden	100%	-	-	-	-	-	-	-	-
Total Norway				4,136	696	424	63,203	7,019	719	1,804	56,552
Poland	Hydro Aluminium Rolled Products Polska Sp. z o.o.	Sales company	100%	5	-	-	4	1	-	-	2
	Hydro Building Systems Poland Sp. z o.o.	Building systems production	100%	59	-	1	158	1	-	1	-6
	Hydro Extrusion Poland Sp. z o.o.	Extrusion production	100%	1,407	4	2	2,307	102	34	44	780
Total Poland				1,471	4	3	2,469	104	35	45	776
Portugal	Hydro Aluminium Extrusion Portugal HAEP S.A.	Extrusion production	100%	99	24	-	297	-4	-1	-	66
	Hydro Building Systems Portugal (HBSPT) SA	Building systems production	100%	74	-	-	239	1	5	20	18
Total Portugal				173	24	-	536	-3	4	20	83
Romania	Hydro Extrusion S.R.L.	Extrusion production	100%	217	-	1	498	-8	1	-	-168
Total Romania				217	-	1	498	-8	1	-	-168
Singapore	Hydro Aluminium Asia Pte. Ltd.	Trading company	100%	16	-	-	7,583	105	10	15	642
	Hydro Aluminium Asia Rolled Products Pte. Ltd.	<i>Company dissolved in 2020</i>	100%	2	-	-	-	-	-	-	-
	Hydro Holding Singapore Pte. Ltd.	Sales and local holding company	100%	20	-	-	69	-	1	-	-417

Total Singapore				38	-	-	7,652	105	10	15	225
Slovakia	Hydro Extrusion Slovakia a.s.	Extrusion production	100%	374	-	-	539	1	-	3	-33
	Slovalco a.s.	Primary aluminium production	55.3%	490	-	-	3,711	-505	-93	3	320
	ZSNP DA, s.r.o.	Transportation	55.3%	-	-	-	9	1	-	-	1
Total Slovakia				864	-	-	4,260	-503	-93	6	289
South Africa	Technal Systems South Africa (Pty) Ltd.	<i>Company is in liquidation</i>	100%	-	-	-	-	-	-	-	-13
Total South Africa				-	-	-	-	-	-	-	-13
Spain	Hydro Aluminium Iberia S.A.U.	Remelter	100%	50	5	-	801	81	19	7	304
	Hydro Aluminium Rolled Products Iberia S.L.	Sales company	100%	6	-	-	10	4	1	-	9
	Hydro Building Systems Spain S.L.U.	Building systems production	100%	246	3	-	655	-	28	-	-5
	Hydro Extruded Solutions Holding S.L.U.	Local holding company	100%	43	-	-	27	-3	-8	-	26
	Hydro Extrusion Spain S.A.U.	Extrusion production	100%	266	33	-	1,313	-64	-9	-	459
Total Spain				611	41	-	2,807	19	31	7	792
Sweden	Hydro Building Systems Sweden AB	Building systems production	100%	122	2	-	646	33	-	-	13
	Hydro Extruded Solutions AB ¹⁶⁾	Local holding company and R&D	100%	53	-	13	78	18	22	53	1,571
	Hydro Extrusion Sweden AB	Extrusion production	100%	869	19	5	2,191	-19	2	14	657
	Sapa China Holding AB	Local holding company	100%	-	-	-	-	-	-	-	-
Total Sweden				1,044	21	18	2,914	32	25	67	2,241
Switzerland	Hydro Aluminium International SA	Sales company	100%	13	-	9	16,910	-245	-51	-	-39
	Hydro Aluminium Walzprodukte AG	Sales company	100%	3	-	-	4	1	-	-	4
	Hydro Building Systems Switzerland AG	Sales company	100%	41	1	-	282	43	8	2	73
Total Switzerland				57	1	9	17,196	-201	-42	3	38
Turkey	Hydro Yapi Sistem Sanayi VE Ticaret AS	Sales company	100%	32	-	-	58	-7	-1	-	28
Total Turkey				32	-	-	58	-7	-1	-	28
Ukraine	Sapa Profiles UA	<i>Company is in liquidation</i>	100%	-	-	-	-	-	-	-	-1
Total Ukraine				-	-	-	-	-	-	-	-1
United Arab Emirates	Hydro Building Systems Middle East FZE	Sales company	100%	17	-	-	103	4	-	-	49
Total United Arab Emirates				17	-	-	103	4	-	-	49
United Kingdom	Hydro Aluminium Deeside Ltd.	Remelter	100%	46	1	-	669	48	9	-	116
	Hydro Aluminium Rolled Products Ltd.	Sales company	100%	6	-	-	13	2	-	-	5
	Hydro Building Systems UK Ltd.	Building systems production	100%	153	1	-	589	-31	-6	-	321
	Hydro Components UK Ltd.	Fabrication of extruded products	100%	349	1	6	628	-97	-18	-	56
	Hydro Extrusion UK Ltd.	Extrusion production	100%	514	1	1	1,442	15	1	2	18
	Hydro Holdings UK Ltd.	Local holding company	100%	-	-	-	1	-228	-	2	-304
	Sapa UK Ltd.	<i>Company dissolved in 2019</i>	100%	-	-	-	-	-	-	-	-
Total United Kingdom				1,068	4	7	3,341	-290	-13	4	212
USA	EMC Ashtabula Inc	Local holding company	100%	-	-	-	-	-144	-32	-	-2,112
	EMC Metals Inc	Local holding company	100%	-	-	-	-	24	8	-	465
	Hydro Aluminium Metals USA, LLC	Remelters and sales	100%	143	3	-	6,974	184	-2	-	-1,393
	Hydro Aluminium Tomago Inc.	<i>Company dissolved in 2019</i>	100%	-	-	-	-	-	-	-	-
	Hydro Building Systems North America Inc ¹⁷⁾	<i>Company is in liquidation</i>	100%	-	-	-	-	-	-	-	-
	Hydro Building Systems North America LLC ¹⁷⁾	Sales company	100%	-	-	-	1	-17	-	-	-17
	Hydro Extruder LLC	Extrusion production	100%	1,160	21	28	5,865	90	-10	-	518

	Hydro Extrusion Delhi LLC	Extrusion production	100%	289	18		1,549	17	-7	-	74	
	Hydro Extrusion North America LLC	Extrusion production	100%	1,007	4		6,051	-1	-11	5	-2,153	
	Hydro Extrusion Portland Holding Inc.	Local holding company	100%	567	-	19	-	-19	-	-	233	
	Hydro Extrusion Portland Inc.	Extrusion production	100%	-	-		1,655	-465	1	-	-45	
	Hydro Extrusion USA LLC	Extrusion production and support services	100%	2,666	8	254	12,724	874	-12	1	1,980	
	Hydro Holding North America Inc. ¹⁸⁾	Local holding company	100%	-	-	7	-	-5	315	213	1,234	
	Hydro Metals Holding US LLC	<i>Company dissolved in 2019</i>	100%	-	-		-	-1,333	-	5	-35	
	Hydro Precision Tubing Adrian Inc.	<i>Company is dormant</i>	100%	-	-		-	1	4	-	-313	
	Hydro Precision Tubing Louisville Inc.	<i>Company is dormant</i>	100%	-	-		-	-	-	-	-70	
	Hydro Precision Tubing Monterrey Central LLC	Precision tubing production	100%	-	-		-	-	-	-	-	
	Hydro Precision Tubing Monterrey LLC	Precision tubing production	100%	-	-		506	84	-16	-2	281	
	Hydro Precision Tubing USA LLC	Precision tubing production	100%	176	4		1,024	-15	3	-	22	
	Norsk Hydro North America LLC	<i>Company dissolved in 2019</i>	100%	-	-		-	-766	-	-2	-29	
Total USA				6,008	58	308	36,349	-1,490	241	220	-1,357	
Vietnam	Sapa Ben Thanh Aluminium Profiles Co. Ltd	Extrusion production	65%	232	6		161	-21	-3	2	-6	
Total Vietnam				232	6		161	-21	-3	2	-6	
Total Eliminations, non-controlling interests and goodwill and excess values not attributable to specific legal entities								-80,576	-6,197	-216	-18	-36,871
Total joint operations and joint ventures								3,263	103	10	80	-2,603
Grand total				36,310	1,647	875	149,766	-1,556	813	2,981	52,745	

1) Number of employees is based on the legal entity each employee is employed by

2) Revenue consists of external and internal revenue from sales of products and services, and realized and unrealized results from derivatives related to sale of products. Elimination of sale to other Hydro companies is presented on a combined basis in "Eliminations". Revenue in this report equals revenue in Hydro's consolidated income statements

3) For the composition of income before tax, please refer to consolidated income statements and related notes

4) For a description and the composition of income taxes, please refer to consolidated income statements and related notes

5) Income taxes paid represents the actual payments made during the year independent of which year the tax relates to. In some tax regimes including Brazil, tax payments include settlement of tax liabilities with tax credits generated from other payments to federal authorities

6) Retained earnings consists of accumulated gains and losses, net of distributed profits from the point of view of the legal entity. Retained earnings existing in the companies at the time of Hydro's acquisition is deducted in "Eliminations". In addition, "Eliminations" consists of unrealized gains in transactions between Hydro companies

7) Hydro Aluminium Australia Pty Ltd is the owner of Hydro's ownership share in Tomago aluminium smelter, a joint operation

8) Hydro Extruded Solutions AS purchased the remaining 50% of Technal Middle East WLL with closing in May 2019. The company was renamed to Hydro Building Systems Middle East WLL (TMI) in Q4, 2019. The reported numbers also include its subsidiary in Oman

9) Hydro Extrusion Ltda. was merged into Hydro Extrusion Brasil S.A. in Q1 2019

10) Hydro Aluminium Canada & Co. Ltd. is the owner of Hydro's ownership share in Aluminerie Alouette Inc, a jointly owned aluminum smelter

11) Hydro Buildex Sarl was merged into Hydro Building Systems France SARL in 2019

12) Hydro Albi SNC was dissolved into Hydro Extrusion Albi SAS in Q1 2019

13) Hydro Extrusion Deutschland GmbH purchased all the shares in the powder coating company Metallbeschichtung Gerstungen GmbH in Q1, the company changed name to Hydro Building Systems Coating GmbH

14) Sapa BS India Pvt. Ltd., Sapa Building Systems Pvt. Ltd. and Sapa Precision Tubing Pune Private Ltd was merged into Sapa Extrusion India Pvt. Ltd. in Q3 2019

15) RSK Holding AS was established in Q4 2019

16) Hydro Aluminium Rolled Products Sverige AB was dissolved into Hydro Extruded Solutions AB in Q4 2019

17) New legal entity to replace Hydro Building Systems North America Inc

18) Norsk Hydro North America LLC and Hydro Metals Holding LLC were dissolved and included in Hydro Holding North America Inc. in Q4 2019

Entity descriptions

In the table above, each company has been given a short description of its main activities. Some of the entities can also have other activities as listed below.

Short description	Main activities
Alumina refining	Refining of bauxite to alumina. Hydro operates the Alunorte alumina refinery
Bauxite mining	Mining of bauxite, the raw material for aluminium productions. Hydro has only one consolidated bauxite mine
Building systems production	Production of building systems where aluminium is used
Company kindergarden	Kindergarden for children of employees or tenants
Dies production	Production of dies for extrusion of aluminium profiles
Energy sourcing	Sourcing of energy for Hydro operations
Fabrication of extruded products	Added value processing of extruded profiles
Extrusion production	Includes one or more extrusion production lines and is normally also responsible for sales and marketing of its products. May also have R&D activities
Recycling	Sorting of aluminium scrap for supply to remelters
High-purity aluminium production	Production of aluminium of minimum 99.99 percent purity
Insurance	In-house (captive) insurance
IT shared services	IT shared services for Hydro operations
Local holding company	Holding & Financing. Holding shares or other equity instruments. Administrative, management or support services
Pension fund	Employee pension fund
Power production	Production of hydro-power
Power trading	Trading of power and energy services
Precision tubing production	Production of extruded aluminium tubes, micro-port aluminium tubes, and welded aluminium tubes
Primary aluminium production	Includes one or more primary aluminium plant(s), and may also include casting, anode production and/or R&D activities
Public affairs	Hydro's Brussels office
Real estate	Property management and development. Owner of land and infrastructure
R&D	Research and development activities
Remelter	Facility remelting standard ingots, process scrap and/or post-consumer scrap
Rolling mill	Production of rolled products
Sales company	Sales, marketing and distribution offices
Support services	Administrative and other support services
Tool and spare parts services	Provides tool and spare parts services, in addition to administrative and management support
Trading company	Sales, marketing and distribution of casthouse aluminium products
Transportation	Transport of raw materials by railway train

Norwegian code of practice for corporate governance

This chapter provides a detailed overview of how Hydro follows the Norwegian Code of Practice for Corporate Governance of 2018. Information that Hydro must provide in accordance with the Norwegian Accounting Act, section 3.3b, is also included. This overview should be seen in context with the general corporate governance report provided in Hydro's annual report for 2019.

Deviations from the Norwegian code of practice for corporate governance

In the board of directors' assessment, we have deviations from three sections in the code of practice:

Section 6, General meeting of shareholders:

Hydro has two deviations from this section:

1) *"Ensure that the members of the board of directors ... are present at the general meeting"*: The entire board of directors has generally not participated in the general meeting. Matters under consideration at the general meeting of shareholders have not yet required this. The chairperson of the board of directors is always on hand to present the report and answer any questions. Other board members participate as needed. The board of directors considers this to be adequate.

2) *"Making arrangements to ensure an independent chairman for the general meeting"*: Section 9 in Hydro's articles of association states that the general meeting is chaired by the chairperson of the corporate assembly, or, in his or her absence, by the deputy chair. This arrangement has been approved by the company's general meeting.

Section 7, Nomination committee:

Hydro has one deviation from this section:

"The company's guidelines for the nomination committee should establish rules for rotation of the members of the nomination committee": The nomination committee has no formal rules on rotation of its members. The nomination committee's mandate expresses, however, the intention to "over the course of time balance the need for continuity against the need for renewal in respect of each governing organ." The chairperson of the committee, who is also the chairperson of the corporate assembly, has been a member of the committee since 2012, became acting chairperson in 2014 and was elected chairperson in 2015. The other members were elected to the nomination committee in 2014, 2015 and 2019.

Section 14, Takeovers:

Hydro has one deviation from this section:

"The board of directors should establish guiding principles for how it will act in the event of a take-over bid": The board of directors has chosen not to prepare explicitly formulated general principles for handling takeover bids. The reason for this is that the Norwegian state, represented by the Ministry of Trade, Industry and Fisheries, owns 34.3 percent of the

Hydro shares (as of 31.12.2019) and has by virtue of the Active Ownership Report (Report to the Storting no. 8 (2019-2020)) expressed a long-term ownership perspective in the company for the purpose of retaining its head office and research activities in Norway.

1. Statement of corporate governance

Hydro follows the Norwegian Code of Practice for Corporate Governance of 2018.

2. Hydro's business

Hydro is a global aluminium company with production, sales and trading activities throughout the value chain, from bauxite, alumina and energy generation to the production of primary aluminium and rolled and extruded products as well as recycling. Based in Norway, the company has 36,000 employees involved in activities in 40 countries on all continents. Rooted in more than a century of experience in renewable energy production, technology development and partnerships, Hydro is committed to strengthening the viability of the customers and communities we serve.

The company's objectives, as stated in its articles of association, are to engage in industry, commerce and transport, to utilize energy resources and raw materials, and to engage in other activities connected with these objectives. Its business activities may also be conducted through participation in or in cooperation with other enterprises.

The board of directors evaluates the company's objectives, strategies and risk profile at least annually and reports on it in the Board of Directors' report.

The Hydro Way represents our framework for leadership, organization and culture and is the foundation for our governance system, including our code of conduct. Hydro's Code of Conduct has been approved by the board of directors, which also oversees that Hydro has appropriate corporate directives for, among other things, risk management, HSE and corporate responsibility.

References: Hydro's articles of association are available at www.hydro.com/governance. Learn more about The Hydro Way and Hydro's corporate directives at www.hydro.com/principles, and Board of Directors' Report 2019 in this document.

3. Equity and dividend

In the opinion of the board of directors, Hydro's equity capital is appropriate to the company's objectives, strategy and risk profile.

Hydro's dividend policy is in the long term to pay out, on average, 40 percent of net income as ordinary dividend over the cycle to our shareholders. The dividend policy has a floor of NOK 1.25 per share.

The dividend per share is proposed by the board of directors, based on Hydro's dividend policy, and approved by the general meeting of shareholders.

The board of directors may obtain authorization from the general meeting of shareholders to buy back Hydro shares in the market. In such cases, the board will normally request that the shares are acquired in the open market, and that the authority lasts no longer than until the next general meeting.

When the general meeting of shareholders considers whether or not to authorize the board of directors to carry out share capital increases for different purposes, each purpose must be considered separately by the meeting. Such authorization will be limited in time, and will last no longer than until the date of the next general meeting. Authorization granted to the board of directors is restricted to specific purposes. Such authorization was last given in 2010 in connection with the Vale transaction.

See also item 4.

References: Learn more about Hydro's equity and dividend policy under Shareholder information in Hydro's Annual Report 2019.

4. Equal treatment of shareholders

Hydro has one share class. All the shares have the same rights.

Transactions involving own shares are normally executed on the stock exchange. Buybacks of own shares are executed at the current market rate.

Shareholders who are registered in the Norwegian Central Securities Depository (VPS) may vote in person or by proxy at the general meeting of shareholders. Invitations are sent to the shareholders or to the bank/broker where the shareholder's securities account is held.

Sales of shares to employees in Norway are conducted at a discount to market value. See also item 6.

Contact between the board of directors and the investors is normally conducted via the management. Under special circumstances the board, represented by the chairperson, may conduct dialogue directly with investors.

Regulation of share issues and preemptive rights are described in the company's articles of association.

State ownership

As of December 31, 2019 the Norwegian state, represented by the Ministry of Trade, Industry and Fisheries, owned 34.3 percent of Hydro's issued shares. Hydro holds regular meetings with the Ministry, where topics discussed include Hydro's economic and strategic development, sustainability, and the Norwegian State's expectations regarding results and returns on investments. These meetings are comparable to what is customary between a private company and its principal shareholders. The meetings comply with the provisions specified in Norwegian company and securities legislation, not least with respect to equal treatment of

shareholders. As a shareholder, the Norwegian state does not usually have access to more information than what is available to other shareholders. If state participation is imperative and the government must seek approval from the Norwegian parliament (Stortinget), it may be necessary to provide the Ministry with insider information. In such cases, the state is subject to the general rules that apply to the handling of such information.

References: Learn more about major shareholders in the "Shareholder Information" section of Hydro's Annual Report 2019 and sale of the Hydro share to employees in note 9.3 (Employee remuneration) to the consolidated financial statements. Hydro's code of conduct can be found on www.hydro.com/principles. Hydro's articles of association can be found on www.hydro.com/governance. See also note 9.6 (Related party information) to the consolidated financial statements.

5. Freely negotiable shares

The Hydro share is freely negotiable. It is among the most traded shares on the Oslo Stock Exchange and is subject to efficient pricing. As of December 31, 2019 the Norwegian state, represented by the Ministry of Trade, Industry and Fisheries, owned 34.3 percent of Hydro's shares, while the Government Pension Fund Norway owned 5.3 percent. Shareholding is based on information from the Norwegian Central Securities Depository (VPS) as of December 31, 2019. Due to lending of shares, an investor's holdings registered in its VPS account may vary.

References: Learn more about Hydro's equity and dividend policy under Shareholder information in Hydro's Annual Report 2019.

6. General meeting of shareholders

Notice of a general meeting of shareholders with supporting information is normally published on www.hydro.com more than three weeks in advance, and is sent to the shareholders at least three weeks before the meeting is held.

Notice of a general meeting of shareholders provides information on the procedures which shareholders must observe in order to participate in and vote at the meetings. Such notice also details:

- the procedure for representation by proxy, including the use of a form of proxy
- the right of shareholders to propose resolutions for consideration by the general meeting of shareholders.
- the website where the notice of the meeting and other supporting documents will be made available

The following information is available at www.hydro.com:

- information on the right of shareholders to propose matters for consideration by the general meeting of shareholders
- how to make proposals for resolutions for consideration by the general meeting or how to comment on matters for which no resolution is proposed
- form of proxy

Our aim is that resolution proposals and supporting information that are distributed are sufficiently detailed and comprehensive to enable shareholders to reach decisions on the matters to be considered at the meeting.

The notification deadline for shareholders wishing to attend the general meeting of shareholders is maximum five days prior to the meeting.

Shares registered in a nominee account must be re-registered in the Norwegian Central Securities Depository (VPS) and be registered in the VPS on the fifth working day before the general meeting of shareholders in order to obtain voting rights.

Shareholders who are unable to attend in person may vote by proxy. Hydro will nominate a person who will be available to vote on behalf of shareholders as their proxy.

The general meeting of shareholders votes for each candidate nominated for election to the company's corporate assembly and nomination committee.

To the extent possible, the form of proxy will facilitate separate voting instructions for each matter to be considered by the meeting and for each of the candidates nominated for election. It is possible to vote electronically in advance.

The general meeting of shareholders is chaired by the chairperson of the corporate assembly or, in his or her absence, by the deputy chairperson.

The chairperson of the board of directors, minimum one nomination committee representative, the President and CEO, and the auditor attend the general meeting.

References: Learn more about the general meeting of shareholders at www.hydro.com/investor

Deviations: See the first page of this section.

7. Nomination committee

In accordance with Hydro's articles of association, the company must appoint a nomination committee. This committee is comprised of minimum three members, maximum four, who are either shareholders or shareholder representatives. The committee's chairperson and members are appointed by the general meeting of shareholders. At least two, including the chairperson, must be elected from the shareholder-elected representatives in the corporate assembly. If the chairperson resigns as member of the Nomination Committee during the electoral period, the Nomination Committee shall elect among its members a new chairperson for the remainder of the new chairperson's electoral period.

The guidelines for the nomination committee have been approved by the general meeting of shareholders, which also determines the remuneration of the committee. All shareholders may propose candidates for the nomination committee at any time. In order to be considered at the next ordinary election, proposals must be submitted by the end of November in the year before the election year.

The recommendations of the nomination committee include details on the candidates' background and independence.

The nomination committee ensures that due attention is paid to the interests of the shareholder community and the company's requirements for competence, capacity and diversity. The nomination committee also takes account of relevant statutory requirements regarding the composition of the company's governing bodies.

According to its mandate, the Nomination Committee shall be receptive to external views and shall ensure that any deadlines for proposals regarding members of the Corporate Assembly, the Nomination Committee and the Board of Directors are published well in advance on the Company's website. In carrying out its duties the Nomination Committee should actively maintain contact with the shareholder community and should ensure that its recommendations are anchored with major shareholders.

All members of the nomination committee are independent of Hydro's board of directors, chief executive officer and other executive management staff. As the largest shareholder, the Norwegian state is represented on the nomination committee by Morten Strømgren.

References: Hydro's Articles of Association can be found at www.hydro.com/governance. More information about Hydro's nomination committee can be found at the same site. Members of the nomination committee are listed on www.hydro.com/governance. Nominations can be submitted electronically, also from www.hydro.com/governance

Deviations: See the first page of this section.

8. Corporate assembly and board of directors: composition and independence

All board directors, members of the board committees and members of the corporate assembly are independent of the company's executive management and material business relationships. One member of the corporate assembly is dependent of major Hydro shareholders: Nils Bastiansen, who is an employee of the Government Pension Fund Norway, is a member of the corporate assembly. There were a few matters where certain board members were disqualified.

Thomas Schulz is the CEO of the listed company FLSchmidt. Sales and purchases between FLSchmidt and fully owned Hydro subsidiaries totaled DKK 13.9 million in 2019. Schulz was not directly involved in these transactions.

Two-thirds of the corporate assembly and their deputies are elected by the general meeting of shareholders. The nomination committee nominates candidates with a view to obtain a broad representation by the company's shareholders and other relevant stakeholders with competence in, for example, technology, finance, research, and corporate social responsibility.

The corporate assembly elects the board of directors, including its chair and deputy chair.

In compliance with Hydro's articles of association, the board of directors consists of between nine and 11 members. These are elected for a period of up to two years.

The nomination committee aims to achieve a board composition whereby the members complement each other professionally and the board of directors is able to function as a corporate body.

As of December 31, 2019, seven of the board's directors owned a total of 111,377 shares. Hydro has no share purchase program for board members, with the exception of the employee representatives, who are entitled to buy shares through the Norwegian employee share purchase scheme. All share purchase transactions are conducted in compliance with the Securities Trading Act.

References: The Government Pension Fund Norway is a significant shareholder in Hydro. An overview of the members of the corporate assembly, the current composition of the board of directors and information about their independence, and Hydro's articles of association at www.hydro.com/governance

9. The work of the board of directors

The board of directors has established procedures for its own work and that of the company's management, with particular emphasis on clear internal division of responsibilities whereby the board has responsibility for supervising and administrating the company, and the company's management has responsibility for the general operation of the group.

Conflicts of interests and disqualification

Hydro's Code of Conduct contains guidelines for, among other things, how conflicts of interests that may arise should be dealt with. The code applies to all of Hydro's board members and employees. It is the opinion of the board of directors that there were no transactions that were material between the group and its shareholders, board members, corporate management board or related parties in 2019, except those described under item 8.

If the chairperson of the board is or has been actively involved in a given case, for example in negotiations on mergers, acquisitions etc., another board director will normally lead discussions concerning that particular case.

The board of directors has an annual work plan, with particular emphasis on objectives, strategy and implementation.

Since 2001, Hydro has had an audit committee and a compensation committee. The audit committee has four members and the compensation committee three members. The shareholder-elected members are all independent of the company. In the opinion of the board of directors, the audit committee meets the Norwegian requirements regarding independence and competence.

The board of directors conducts an annual self-assessment of its work, competence and cooperation with management and a separate assessment of the chairperson of the board. In addition, the audit committee performs a self-assessment. The assessment results are submitted to the nomination committee, which in turn assesses the board's composition and competence.

References: See the section Board developments in the Board of Directors' report. Information about the board of directors and its committees, and the board members' competence can be found in the chapter Corporate Governance in Hydro's Annual Report 2019. The board of directors' mandate can be found at www.hydro.com/governance

10. Risk management and internal controls

The board of directors ensures that the company has sound internal controls and appropriate risk management systems through, for example, an annual review of the key risk areas and the company's internal controls. Internal audit corporate reports directly to the board of directors, but is for administrative purposes placed under the purview of the chief financial officer.

Hydro's internal control system includes all parts of our corporate directives, including our code of conduct and HSE and corporate social responsibility requirements. A more detailed description of the company's internal controls and risk management systems related to financial reporting can be found at www.hydro.com/governance

References: A review of Hydro's major risks can be found in the section Risk review in the Board of Directors' report.

11. Remuneration of the board of directors

The board directors elected by the shareholders perform no duties for the company other than their board duties.

Remuneration is determined by the corporate assembly, based on the recommendation of the nomination committee. The nomination committee recommends compensation with the intention that it should reflect the board's responsibility, competence and time commitment as well as the company's complexity and global activities compared with the general level of directors' fees in Norway. Remuneration of the board of directors is based neither on performance nor on shares or share options.

References: All aspects of remuneration of the board of directors are described in note 9.4 (Board of directors and corporate assembly) to the consolidated financial statements. See also Hydro's articles of association.

12. Remuneration of the executive management

The board of directors has established guidelines for remuneration of members of the executive management. These guidelines are communicated to the general meeting of shareholders and included in the annual report. The guidelines for determining remuneration of the executive management are based on the main principles for Hydro's remuneration policy, which is that Hydro shall pay its employees a total compensation package that is competitive, but not among the highest, and in line with good industry standards locally. Where appropriate, compensation packages should also include a performance-based component, and the basic salary should reflect individual performance.

The guidelines are also intended to contribute to long-term value creation for the company's shareholders. A ceiling has been set on performance-based compensation. The company has share-based long-term incentive programs, but no share option scheme for its executive management.

The board of directors' statement on management remuneration is made public through note 9.1 to the consolidated financial statements. Note 9.1 is sent forward to the general meeting of shareholders for advisory vote, however, the part of section of note 9.1 which concerns compensation based on shares is presented for a binding vote.

References: The board's guidelines for management remuneration are described in note 9.1 (Board of directors' statement on executive management remuneration) to the consolidated financial statements. All aspects of remuneration of management are described in note 9.2 (Management remuneration). The employee share purchase plan is described in note 9.3 (Employee remuneration). Hydro's remuneration policy is also described in Hydro's people policy, which can be found at www.hydro.com/principles

13. Information and communication

Hydro has established guidelines for the company's reporting of financial and extra-financial information, the requirements that extends beyond the financial reporting, covering environmental, social and governance issues, based on transparency and with regard to the requirement of equal treatment of all parties in the securities market. This also pertains to contact with shareholders outside of the general meeting of shareholders.

Shareholder information is available at www.hydro.com. The financial statements and annual report are sent free of charge to shareholders on request. Notice of general meeting of shareholders is sent directly to shareholders with known addresses unless they have consented to receive these documents electronically. All information sent to the shareholders is made available at hydro.com when distributed. Presentation of the quarterly reports as well as the annual shareholder meeting are simultaneously broadcasted through web casts. All relevant information is

sent to the Oslo Stock Exchange electronically for public storage.

Hydro has emergency plans in place at the relevant levels in the organization. These plans are exercised regularly. Rules for who can speak on behalf of the company are regulated through Hydro's code of conduct.

References: A financial calendar is available in this report and at www.hydro.com/investor where also more information about web casts and the Hydro share can be found, including key legal information for shareholders in Norsk Hydro ASA. Hydro's code of conduct is available at www.hydro.com/principles

14. Takeovers

The board of directors will handle takeover bids in accordance with Norwegian law and the Norwegian Code of Practice for Corporate Governance. There are no defense mechanisms against acquisition offers in our articles of association or in any underlying steering document. We have not implemented any measures to limit the opportunity to acquire shares in the company. See also item 5.

Deviations: See the first page of this section.

15. Auditor

The external auditor annually presents to the audit committee the main features of the plan for the audit of Hydro.

The external auditor participates in considering relevant matters in meetings of the audit committee. The minutes from these meetings are distributed to all the board directors. This practice is in line with the EU audit directive. Each year the auditor expresses its opinion on internal control procedures to the audit committee including identified weaknesses and proposals for improvement.

The auditor meets with the board of directors when the company's annual financial statements are discussed. In the meetings the auditor will review material changes in the company's accounting policies, assess material accounting estimates and any other material matters on which the auditor and management may disagree, and identify weaknesses in and suggest improvements to the company's internal controls. The board of directors holds meetings with the external auditor without members of the corporate management present.

Hydro places importance on independence and has clear guidelines regarding the use of services from external auditors. All use of services from an external auditor, including non-audit services, is subject to prior approval as defined by the audit committee.

Remuneration of the auditor is stated in the annual report. It is also included as a separate agenda item to be approved by the annual general meeting of shareholders.

In 2010, the general meeting of shareholders chose KPMG as new external auditor for the group with effect from the reporting period 2010.

References: Learn more about the external auditor in the sections Corporate Governance and Viability Performance statements in Hydro's Annual Report 2019, note 10.4 (Auditor's remuneration) to the consolidated financial statements, and note 10.5 (Changes in accounting principles and new pronouncements).

Modern Slavery transparency statement

Hydro's Modern slavery transparency statement has been developed to comply with the legal requirements as stated in the UK Modern Slavery Act 2015, valid to Hydro from 2016, and the Australia Modern Slavery Bill 2018, valid to Hydro from 2020. The reporting requirements apply to Hydro as a supplier of goods with a total turnover of £36 million or more in the UK and more than AUD 100 million in Australia. The statement is valid for Norsk Hydro ASA and its consolidated subsidiaries. These include, but are not limited to, the fully-owned production units Hydro Aluminium Deeside Ltd, Hydro Building Systems UK Ltd., Hydro Components UK Ltd and Hydro Extrusion UK Ltd in the UK and the fully-owned holding company Hydro Aluminium Australia Pty Limited in Australia. The latter is the owner of Hydro's 12.4 percent of the shares in the joint venture Tomago Aluminium Smelter and Tomago Aluminium Smelter management company Tomago Aluminium Company Pty.

The Modern slavery transparency statement is prepared based on information collected from all consolidated entities in Hydro. In addition, the above-mentioned legal entities have been consulted on the statement itself.

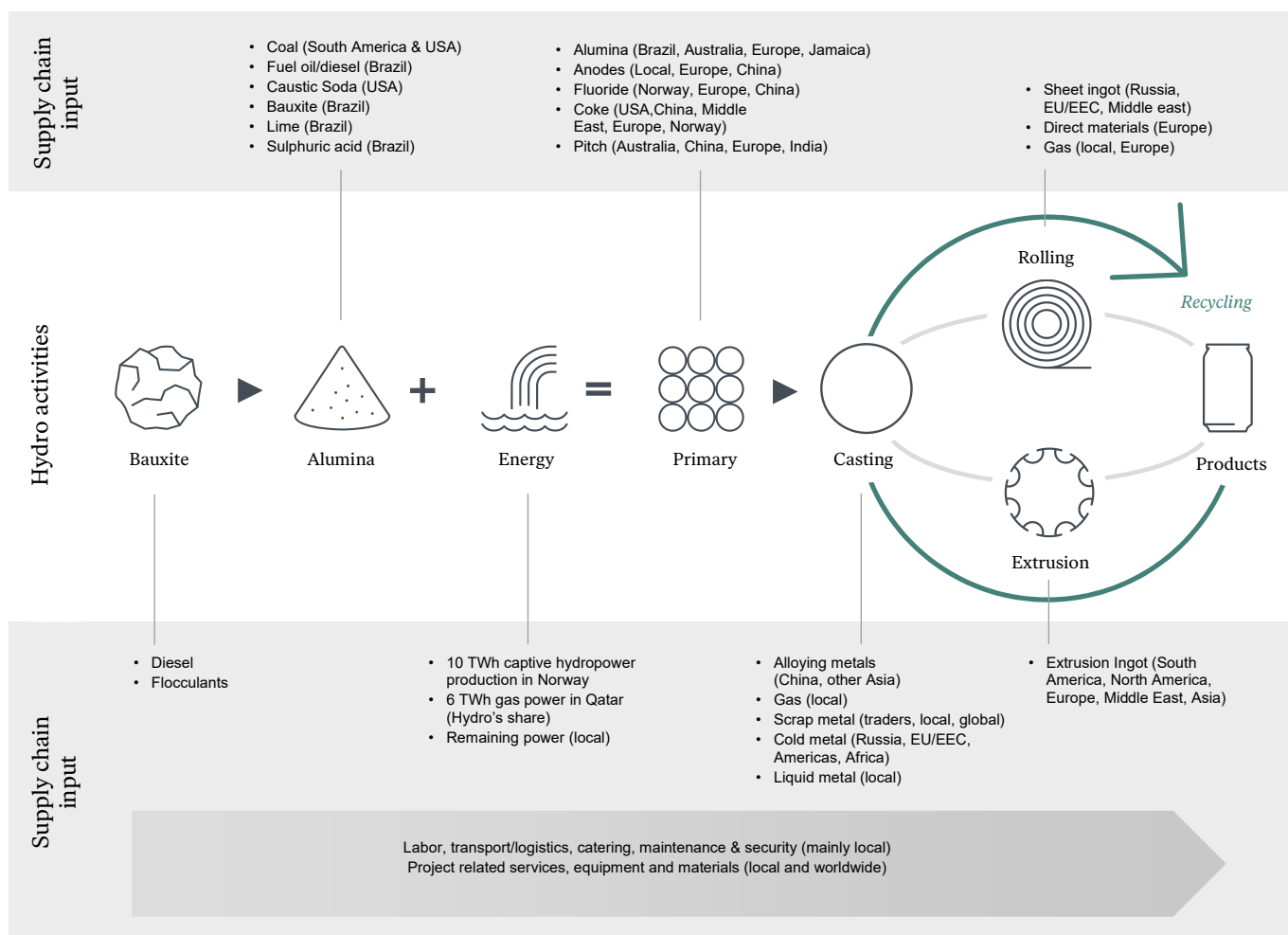
Entities that are not fully owned by, but are controlled by Hydro, can have different policies. We believe that their relevant policies are aligned with the ones of Hydro.

The UK and Australia Modern Slavery transparency statement is approved by the board of directors of the parent company Norsk Hydro ASA. The statement is included in the board's responsibility statement and included in the Financial Statements and Board of Directors' Report 2019.

Our business and supply chain

Hydro is a fully integrated aluminium company with 36,000 employees in around 40 countries on all continents. In addition to production of primary aluminium, rolled and extruded products and recycling, Hydro also extracts bauxite, refines alumina and generates energy to be the only 360° company in the global aluminium industry. Our operations include one of the world's largest bauxite mines and the world's largest alumina refinery, both located in Brazil. We have primary metal production facilities in Europe, Canada, Australia, Brazil and Qatar. Hydro is a large operator of power production in Norway. Extrusion activities are mainly located in Europe and North America, but we also have significant operations in Asia and Brazil. Hydro is present within all market segments for aluminium, with sales and trading activities throughout the value chain serving more than 30,000 customers. Hydro has more than 30,000 active suppliers globally. Most of these are situated in the same countries as our production facilities.

Hydro's supply chain



The figure shows Hydro's supply chain related to its value chain, and does not reflect the current organizational structure.

Our policies and commitments

As a global aluminium company with mining interests, ensuring responsible conduct is important throughout Hydro's value chain. We have to consider our impact on society, spanning from construction to divestment, as well as the exposure to corruption and human rights violations, within our own operations and in the supply chain.

Our compliance system shall ensure that all persons acting on behalf of Hydro comply with applicable laws and regulations and with the requirements adopted by Hydro.

We are committed to respecting and supporting the human rights of all individuals potentially affected directly or indirectly by our operations, including freedom from modern slavery. As an employer, owner and purchaser, an important contribution toward respecting human rights is to secure decent working conditions in our organization, in minority-owned companies and with our suppliers.

We support the principles underlying the Universal Declaration of Human Rights, the UN Global Compact and ILO's eight core conventions. Our human rights policy is based on the UN Guiding Principles on Business and Human Rights, and we report on our adherence in the GRI index. We are a member of the International Council on Mining and Metals (ICMM) and are committed to following their principles and position statements. We use the GRI Standards for voluntary reporting of sustainable development. Hydro's human rights management is based on the OECD Due Diligence Guidance for Responsible Business Conduct

Hydro's Human Rights Policy was developed in 2013 through a multi-stakeholder process. The policy was updated in 2016 and outlines the company's commitment to respecting and promoting human rights. The commitment is integrated in key procedures, including supply chain management, new projects and portfolio management and risk management. The policy is approved by the Corporate Management Board and is governed by EVP Corporate Development.

Implementation of the Human Rights Policy is a line management responsibility. Human rights risk can be addressed in the business areas' Sustainability committees or similar fora. The committees typically include senior members or members of the management team of the business area. Information pertaining to Hydro's most severe human rights risks are communicated to the board of directors, the Corporate Management Board, business area management teams, and relevant parties such as union representatives.

Hydro's supplier and business partner requirements regarding social and environmental responsibility are, as stated in our global directives and procedures, an integral part of all stages of the procurement process. The requirements cover issues related to environment, human rights, anti-corruption and bribery and working conditions, including work environment.

These requirements set out in Hydro's Supplier Code of Conduct are based on international standards, including UN Global Compact, the ILO core conventions, UN Guiding Principles on Business and Human Rights and other UN documents and instruments. The Supplier Code of Conduct will be updated in 2020.

The principles in Hydro's Supplier Code of Conduct are made binding through contractual clauses, to ensure suppliers and business partners reflect the values and principles that Hydro promotes internally and externally. Standard contracts also include clauses on auditing rights and the supplier's responsibility to actively promote the principles with its own suppliers/contractors and sub-suppliers/subcontractors of any tier that have a material contribution to the supply of goods and services to Hydro under the contract.

For legal entities where Hydro holds less than 100 percent of the voting rights, Hydro representatives in the boards of directors shall endeavor to implement the ambitions and principles related to Hydro's global policies including human rights.

Training and capacity building

Human rights responsibilities are part of Hydro's Code of Conduct, which is translated into 18 languages. The Code of Conduct includes our opposition to all forms of human trafficking and forced or compulsory labor. Training in the Code of Conduct is mandatory for all employees. In addition, more specific training on relevant human rights topics is given to functions involved in procurement and social responsibility on a regular basis. E-learning on Hydro's Social responsibility, including human rights, are available to all employees.

Hydro works to strengthen and improve suppliers' performance. This may be done through dialogue, sharing of knowledge, innovation processes, incentives or supplier development programs.

In Brazil, suppliers can apply to participate in a comprehensive, year-long supplier development program. In 2019, 26 supplier companies participated in the program.

Risk assessments of human and labor rights

With more than 30,000 active suppliers, Hydro risks being exposed to human rights violations including modern slavery. Hydro did not detect severe human rights impacts in our own operations in 2019.

Human rights due diligence is integrated in Hydro's processes. As part of the Enterprise Risk Management process, risk of adverse human rights impacts is discussed. Based on this, mitigating actions are developed and included in business plans in the business areas. Business plans are monitored, followed up and evaluated through the year in regular meetings with the Corporate Management Board.

Hydro's procedure for integrity risk management of business partners includes suppliers and customers, strategic partners and intermediaries/agents. It sets requirements for risk assessments and integrity due diligence when entering into a new business relationship or renewing an existing contract. Implementation is risk-based and takes into consideration contractual value, sector specific risk, human rights risk, corruption risk and more.

Suppliers, customers and other business partners registered in our main accounting systems are screened on a weekly basis against recognized international sanction lists. Furthermore, supplier audits and site visits are performed by Hydro personnel and external auditors based on risk analyses, and include environmental, social and governance topics, including human rights.

We consult with interested and affected parties in the identification, assessment and management of significant impacts associated with our activities. This includes communicating findings and addressing mitigating actions. We also consult with human rights experts knowledgeable about the local territories where we operate or through established partnerships.

Before new projects, major developments or large expansions are undertaken, we conduct environmental and social impact assessments when relevant, which includes evaluating risks for adverse human rights impacts in line with internationally accepted standards such as IFC Performance Standards, Equator principles and UN Guiding Principles on Business and Human Rights. This includes the principle of free, prior and informed consent when Indigenous and Traditional Peoples are involved. Dialogue with affected groups gives input to development plans. We strive to act in an open and credible manner, and gather views from interested parties, aiming for a common understanding of the decisions that are made.

Hydro's human rights management is risk-based. In countries with higher risks for adverse human rights impact, we aim to conduct stand-alone human rights impact assessment and mitigating action plans. Hydro recognizes that there are potential risks of adverse impacts concerning our operations in Brazil and in the Middle East, as well as in our supply chain. The risk of incidents of child labor abuse, compulsory or forced labor in our supply chain is low in the majority of Hydro's business areas. We do, however, recognize a risk of forced or compulsory labor among

suppliers in the Middle East, South America and Asia. This is followed up through supplier audits, etc.

Hydro's framework for human rights management was reviewed in 2019. The identified improvements include revision of the Human rights policy and strengthening of due diligence and risk mapping procedures. The improvement work will continue in 2020.

We engage with rightsholders and stakeholders both internally and externally to help inform about the effectiveness of our human rights impact management.

Dialogue with the employees' representatives includes involvement at an early stage in all major processes affecting employees, and we have a tradition for open and successful collaboration between management and unions.

Hydro has regular dialogue with communities, and more frequent and structured dialogue in communities with higher risk of adverse human rights impact. We develop and plan community dialogues in collaboration with affected communities, based on their needs and expectations. Community members in Brazil and at several other major sites are invited to plant visits on a regular basis. We also have regular dialogue with non-governmental organizations, academia and other civil society actors to discuss our human rights management.

Grievance, or complaint, mechanisms are important to understand the impact of Hydro's operations on the rights of individuals and groups affected by our operations. Grievances may be of any kind, including social and environmental issues, and can be made anonymously. In situations where we identify adverse human rights impact, we work to mitigate, prevent, address and remedy potential adverse impacts as recommended in the UN Guiding Principles on Business and Human Rights. Hydro will not tolerate retaliation against anyone who speaks up in good faith to ask a question, raises a concern, reports a suspected violation or participates in an internal company investigation. We have several grievance mechanisms depending on stakeholder groups.

Responsible behavior

We recognize that business can have an important role in supporting the fulfillment of human rights.

Hydro's social responsibility is founded on the basis of making a positive difference by strengthening our business partners and the local communities where we operate. To deliver on this, we target the fundamental drivers of long-term development. In line with local stakeholder expectations and needs, and through strong partnerships, we aim to:

- Contribute to quality education in our communities
- Promote decent work throughout the value and supply chain
- Foster economic growth in our communities
- Strengthen local communities and institutions through capacity building on human rights and good governance

We have committed to contribute to quality education and capacity building for 500,000 people in our communities and for business partners from 2018 until end of 2030.

In 2019, we reached a more than 26,000 people. Continuous improvement of current initiatives and development of new effective, high-impact initiatives will be important going forward.

Through our operations, we contribute to the economic and human development of our employees and the communities in which we operate. We work to ensure informed and effective participation by individuals and groups who are actually or potentially affected by our operations. We respect Indigenous Peoples' rights, including the right to free, prior and informed consent, and the rights of local communities when our activities may affect their lands, territories and livelihoods.

We are concerned about fundamental labor rights, such as freedom of association and collective bargaining, minimum wage requirements and the regulation of working hours. We have a long tradition of maintaining a good dialogue with employee organizations. Hydro's major sites in Europe and Brazil are unionized. Extruded Solutions has a major presence in the USA, and 60 percent of our US employees are working at unionized sites. We have activities in countries where trade unions are restricted, where we look for alternative forums to empower employees. Hydro's Global Framework Agreement was last updated in 2016. The parties are currently negotiating a new agreement. The agreement aims at creating an open channel of information between the parties about industrial relation issues in order to continuously improve and develop good work practices in our worldwide operations.

An important contribution toward respecting human rights is to secure decent working conditions in our organization and promote the same standards in jointly operated and minority-owned companies, and with our suppliers. In Qatalum, in Qatar, where Hydro holds a 50 percent share, the large majority of employees are migrant workers. Proper working conditions for them is key to us.

Security guards are employed on a regular basis to protect our personnel and assets. No armed guards were engaged in our activities in 2019, and there were no significant incidents reported in connection with the use of security guards. Hydro is committed to the Voluntary Principles on Security and Human Rights.

All documents listed under References below are also valid for all our subsidiaries subject to the UK Modern Slavery Act and the Australia Modern Slavery Bill.

References

A number of Hydro's constituting documents and global directives are relevant for our work against modern slavery.

These include, but are not limited to:

- NHC-CD07 Hydro's Code of Conduct
- GD02 Hydro's People Directive
- GD03 Health, Security, Safety and Environment
- GD09 Hydro's Social Responsibility
- GP09-01 Corporate Social Responsibility in the supply chain
- GP09-01 Hydro's Supplier Code of Conduct
- GP09-03 Hydro's Human Rights Policy
- The Hydro Integrity Program Handbook

All documents are available at www.hydro.com/principles



Hydro

Hydro

Additional information

Terms and definitions

ADRs	American Depositary Receipts, evidencing a specified number of ADSs
ADSs	American Depositary Shares, each ADS representing one deposited ordinary share
Alunorf	Aluminium Norf GmbH
Alunorte	The world's largest Alumina refinery outside China, situated in Barcarena in Northern Brazil. Hydro owns 92 percent
AMPS	Aluminium Metal Production System. Hydro's best practice system and standard for world-class production and improvement in our primary metal business
Articles of Association	The articles of association of the Company, as amended and currently in effect
Audit Committee	The audit committee of the Company's Board of Directors
BABS	Bauxite & Alumina's best practice system, based on AMPS (see above) and adjusted to B&A needs
BAT	Best Available Techniques for pollution prevention and control
B&A	Hydro's Bauxite & Alumina business area
CO2 equivalents (CO2e)	A measure used to compare the emissions from various greenhouse gases based upon their global warming potential
Code	The U.S. Internal Revenue Code of 1986, as amended
Company	Norsk Hydro ASA, a Norwegian public company limited by shares, or Norsk Hydro ASA and its consolidated subsidiaries, as the context requires
Compensation Committee	The compensation committee of the Company's Board of Directors
Consolidated Financial Statements	The consolidated financial statements and notes included in the Company's annual report to shareholders
Corporate Assembly	The corporate assembly, a body contemplated by Norwegian companies' law, with responsibility, among other things, for the election of the members of the Company's Board of Directors and nomination of the external auditor
Corporate Management Board	The corporate management board established by the Company's President and Chief Executive Officer to assist him in discharging his responsibilities
CRU	CRU International Limited
CSR	Corporate Social Responsibility
Disclosure Committee	The disclosure committee of the Company, comprised of members of senior management, which is responsible for reviewing financial and extra-financial information before it is made public
DRS1	The old bauxite residue deposit area at Alunorte, still being used to deposit bauxite residue, processed by state-of-the-art press filters
DRS2	The new bauxite residue deposit area at Alunorte, which was under commissioning when Barcarena was flooded following extreme rainfalls in February 2018
EEA	European Economic Area
EEA Agreement	The European Economic Area Agreement
EFTA	European Free Trade Association
EU	European Union
GHG	Greenhouse gas emissions
GRI Standards	Globally recognized standards for sustainability reporting
HSE	Health, security, safety and environment
Hydro	Norsk Hydro ASA and its consolidated subsidiaries
Hydro Aluminium	The aluminium business of Hydro, comprising the sub-segments Metals, Rolled Products, and Extrusion and Automotive
Hydro Monitor	Hydro's global employee engagement survey, normally performed for all employees every second year
Ibama	Brazilian Institute of the Environment and Renewable Natural Resources is a federal environmental agency under the Ministry of Environment
ILO	International Labor Organization
Industry 4.0	An initiative within Primary Metal focusing on advanced analytics, automation, robotics, and digital and predictive maintenance.
kWh	Kilowatt hour
LME	London Metal Exchange
mm	Millimeter
Mt (or mt)	Metric tonne (1,000 kilograms)
My Way	The process we use at Hydro for employee feedback and development. This process consists of regular dialogues between employee and leader, as well as a system tool.
NOK	Norwegian kroner
Nomination Committee	The nomination committee provided for in the Company's Articles of Association and operating under a charter established by the shareholders' representatives in the Corporate Assembly
OSE	Oslo Stock Exchange
Semas	The Secretary of State for Environment and Sustainability is the environmental agency in the state of Pará
TAC	"Term of Adjustment of Conduct" is an agreement between Alunorte, Ministério Público and the Government of Pará/Semas and regulates certain technical studies and improvements, audits, payments of fines, and payments for food cards to families living in the hydrographic area of the Murucupi river
TC	"Term of Commitment" is a social agreement, in addition to TAC, between Alunorte and the Government of Pará. The agreement addresses efforts and investments related to the social development of communities in Barcarena

tonne, mt	One metric tonne (1,000 kilograms or 2,205 pounds)
TWh	Terawatt hour (one billion kilowatt hours)
US GAAP	Generally accepted accounting principles in the United States
VAW	VAW Aluminium AG
VPS or VPS System	The Norwegian Central Securities Depository, Verdipapirsentralen
Workers	Person that performs work directly or indirectly for the company. It includes, but is not limited to, employees
WTO	World Trade Organization
Yara	Yara International ASA

Cautionary note

Certain statements included in this announcement contain forward-looking information, including, without limitation, information relating to (a) forecasts, projections and estimates, (b) statements of Hydro management concerning plans, objectives and strategies, such as planned expansions, investments, divestments, curtailments or other projects, (c) targeted production volumes and costs, capacities or rates, start-up costs, cost reductions and profit objectives, (d) various expectations about future developments in Hydro's markets, particularly prices, supply and demand and competition, (e) results of operations, (f) margins, (g) growth rates, (h) risk management, and (i) qualified statements such as "expected", "scheduled", "targeted", "planned", "proposed", "intended" or similar.

Although we believe that the expectations reflected in such forward-looking statements are reasonable, these forward-looking statements are based on a number of assumptions and forecasts that, by their nature, involve risk and uncertainty. Various factors could cause our actual results to differ materially from those projected in a forward-looking statement or affect the extent to which a particular projection is realized. Factors that could cause these differences include, but are not limited to: our continued ability to reposition and restructure our upstream and downstream businesses; changes in availability and cost of energy and raw materials; global supply and demand for aluminium and aluminium products; world economic growth, including rates of inflation and industrial production; changes in the relative value of currencies and the value of commodity contracts; trends in Hydro's key markets and competition; and legislative, regulatory and political factors.

No assurance can be given that such expectations will prove to have been correct. Hydro disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.



We are aluminium

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Hydro is a fully integrated aluminium company with 36,000 employees in 40 countries on all continents, combining local expertise, worldwide reach and unmatched capabilities in R&D. In addition to production of primary aluminium, rolled and extruded products and recycling, Hydro also extracts bauxite, refines alumina and generates energy to be the only 360° company of the global aluminium industry. Hydro is present within all market segments for aluminium, with sales and trading activities throughout the value chain serving more than 30,000 customers. Based in Norway and rooted in more than a century of experience in renewable energy, technology and innovation, Hydro is committed to strengthening the viability of its customers and communities, shaping a sustainable future through innovative aluminium solutions.