



# Unique position in a new reality

Capital Markets Day 2022

# 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.

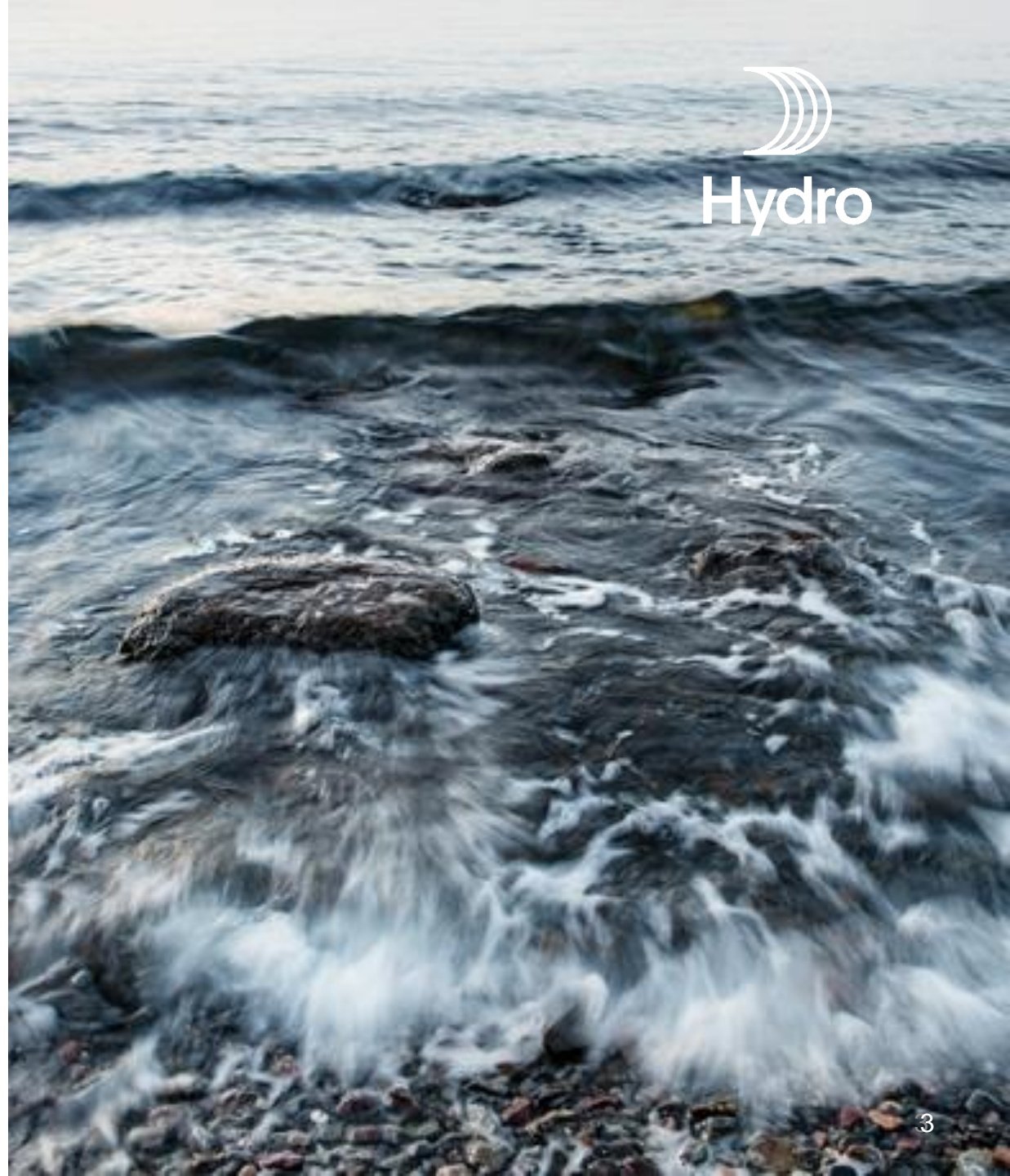
Although we believe that the expectations reflected in such forward-looking statements are reasonable, these forward-looking statements are based on a number of assumptions and forecasts that, by their nature, involve risk and uncertainty. Various factors could cause our actual results to differ materially 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.

# Agenda

All times GMT

08.00 – 08.05	Welcome
08.05 – 09.05	Unique position in a new reality
09.05 – 09.35	Q&A and Break
09.35 – 10.50	Ambitious pathway to net-zero and sustainable value creation
10.50 – 11.20	Q&A and Break
11.20 – 12.10	Increasing robustness of cash flows and returns
12.10 – 12.30	Q&A





# Unique position in a new reality

Capital Markets Day 2022

Hilde Merete Aasheim

President and CEO



# Delivering on key strategic priorities



Lifting profitability, driving sustainability

## Health & Safety

Deliver on improvement programs

Deliver on commercial ambitions, grow volumes and margins from greener products

Grow in recycling and extrusions

Grow in new energy

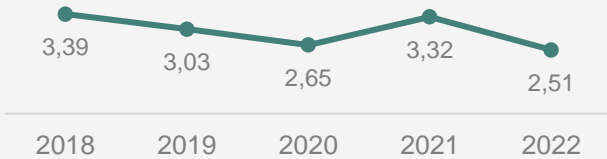
Reduce CO<sub>2</sub>e emissions 10% by 2025, 30% by 2030

Deliver RoaCE 10% over the cycle and competitive shareholder returns



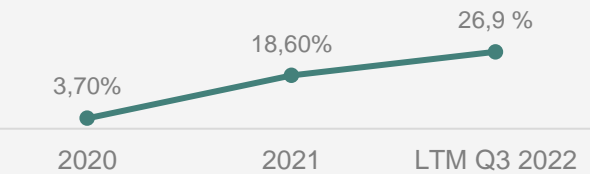
### Total Recordable Incidents

12-month rolling per million hours worked



### Adjusted RoaCE

12-month rolling %



## Zero

Fatal accidents



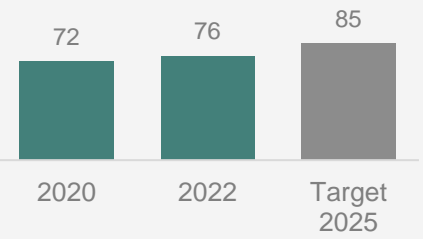
On track to deliver 30% reduction CO<sub>2</sub>e emissions by 2030



NOK **6.85**

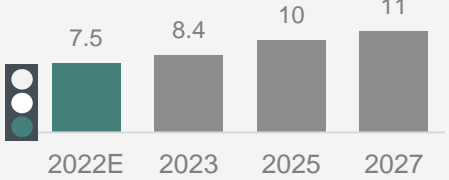
Shareholder payout based on 2021 result<sup>1)</sup>  
NOK 2 billion buy-back

### Engagement factor



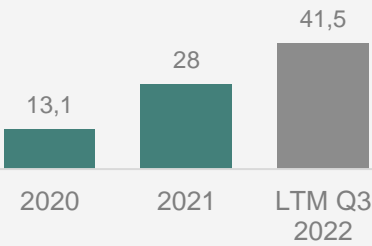
### Improvement program status

NOK billion



### Adjusted EBITDA

NOK billion

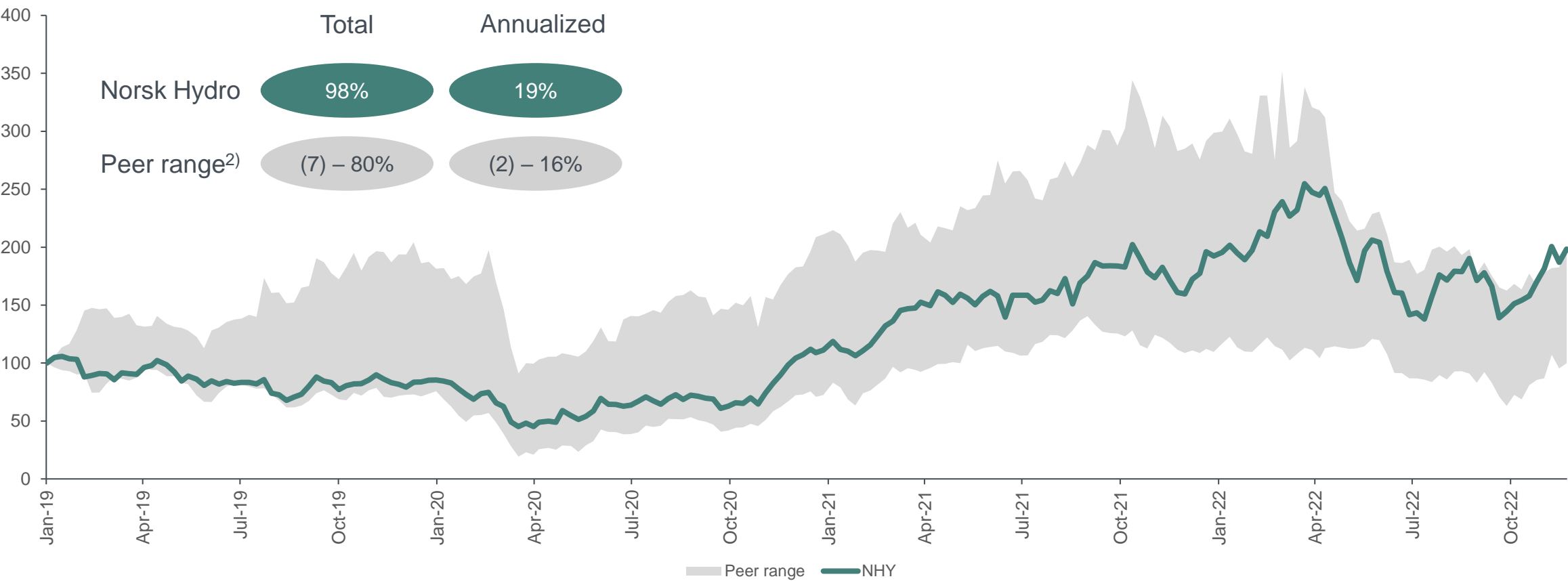


1) 3.4 NOK/share ordinary dividend and 3.45 NOK/share extraordinary dividend

# Hydro outperforms peers on total shareholder returns



Stock price index (incl. dividend) / TSR<sup>1)</sup>



1) TSR calculated including reinvesting dividends and Hydro and all peers shown in same currency (USD).  
2) Peer group includes Nalco, Rusal, Alcoa, Century Aluminium, Hindalco, Chalco, Grupa Kety, Constellium, Kaiser, ProfilGruppen, Tredegar Corporation  
Source: Refinitiv retrieves

# Two megatrends impacting business environment

Shifting external environment creates both risks and opportunities

## 1 Geopolitical and gEOeconomic tensions



## 2 The global sustainability agenda



# Regulatory developments value reliable supply chains, renewables and low-carbon aluminium

## EU



- RePowerEU
- Critical Raw Materials Act
- Renewable Energy Directive
- Eco-design for Sustainable Products Regulation
- Corporate Due Diligence Directive

## The U.S.



- Inflation Reduction Act driving investments in renewable energy, new energy solutions and climate technologies
- Infrastructure and job creation act encouraging investments in road and rail, electrification, EV infrastructure

## China



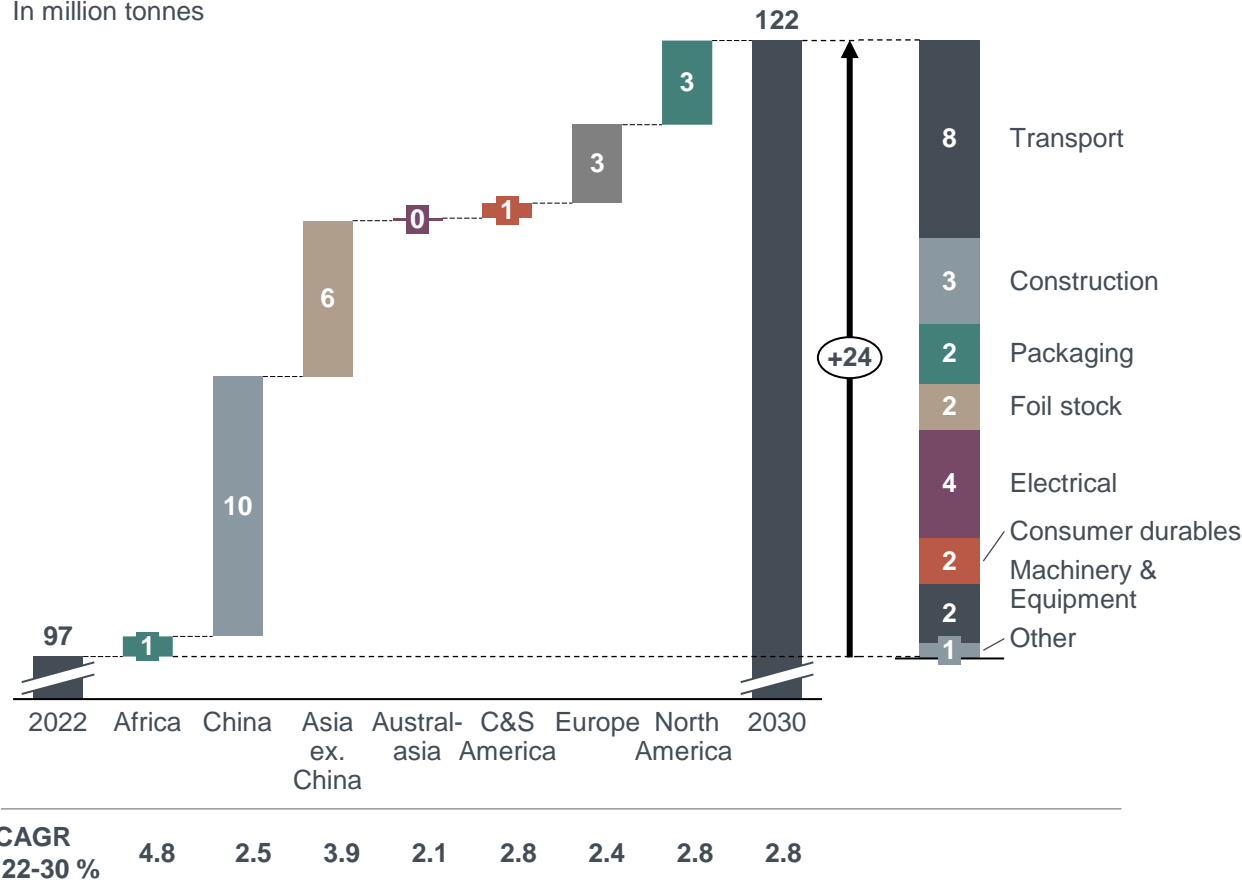
- Lifting national security and self-sufficiency as top priority
- Green/clean technology lifted as future trade opportunity
- More ambitious targets for renewable energy and measures to improve industrial energy efficiency



# Green transition drives aluminium consumption

Semis demand growth driven by transport and electrical

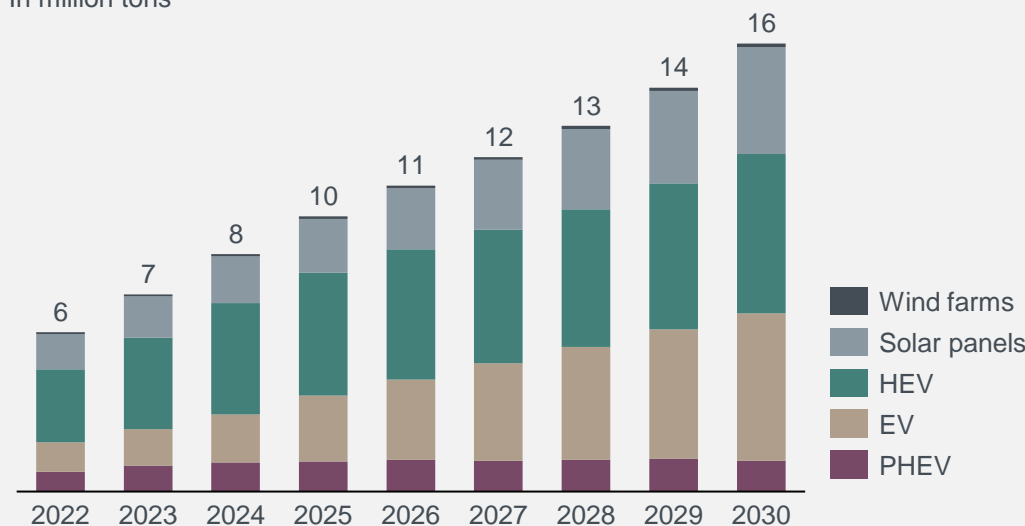
Global semis demand 2022-2030  
In million tonnes



Source: Hydro analysis, CRU, Goldman Sachs  
1) Electrical vehicles (EV), hybrid electrical vehicle (HEV), plug-in hybrid electrical vehicle (PHEV)



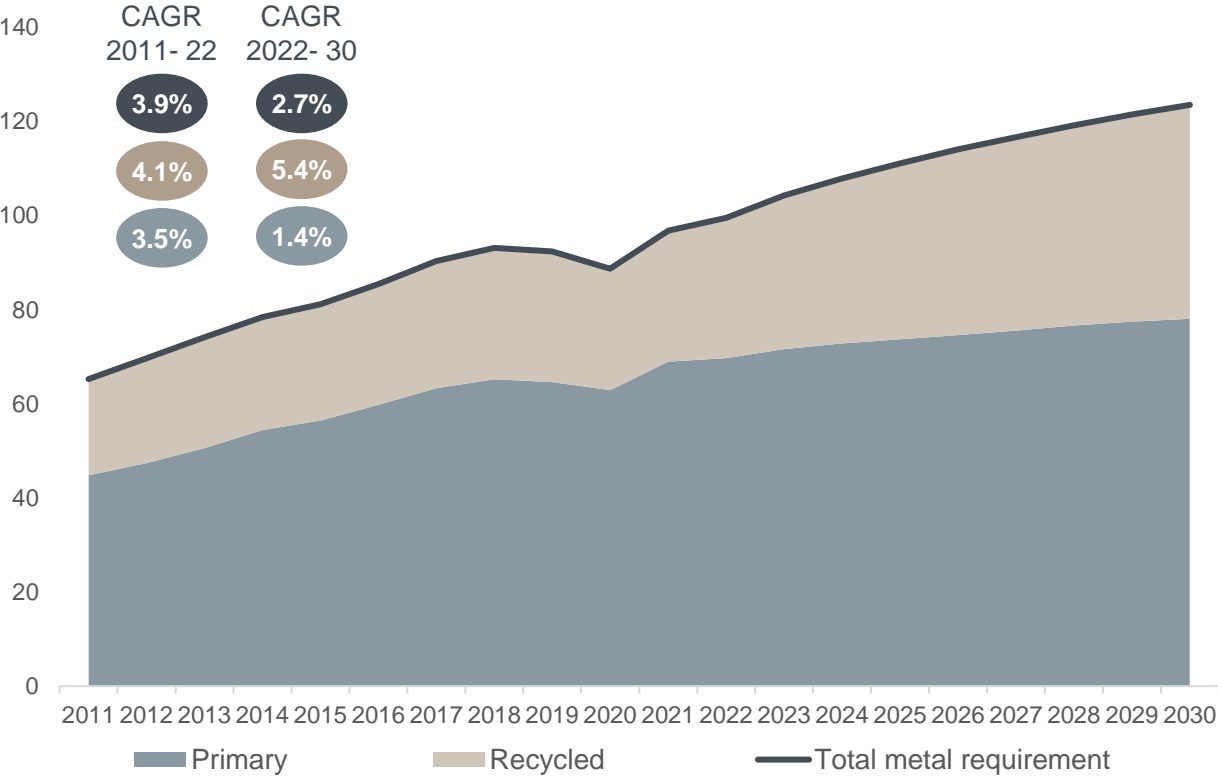
Additional aluminium demand from green transition<sup>1)</sup>  
In million tons



# Future consumption growth increasingly met with recycling

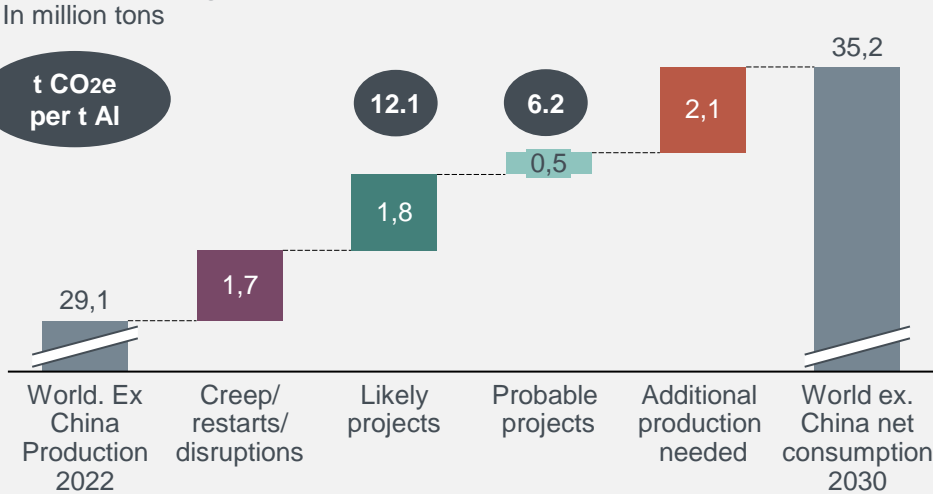
New primary capacity still necessary to balance markets

Global aluminium consumption  
In million tonnes



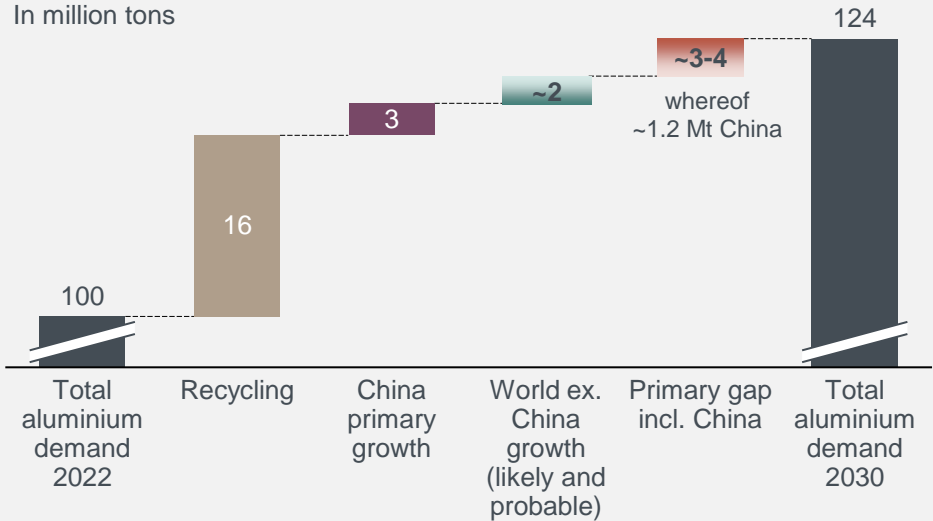
Source: CRU

Majority of announced primary growth based on high carbon energy sources



## Largely balanced markets

Expected likely and probable projects are developed



# Hydro's strategic direction toward 2025



Seizing opportunities where our capabilities match megatrends

## 1 Strengthen position in low-carbon aluminium



## 2 Diversify and grow in new energy



Lifting profitability, driving sustainability

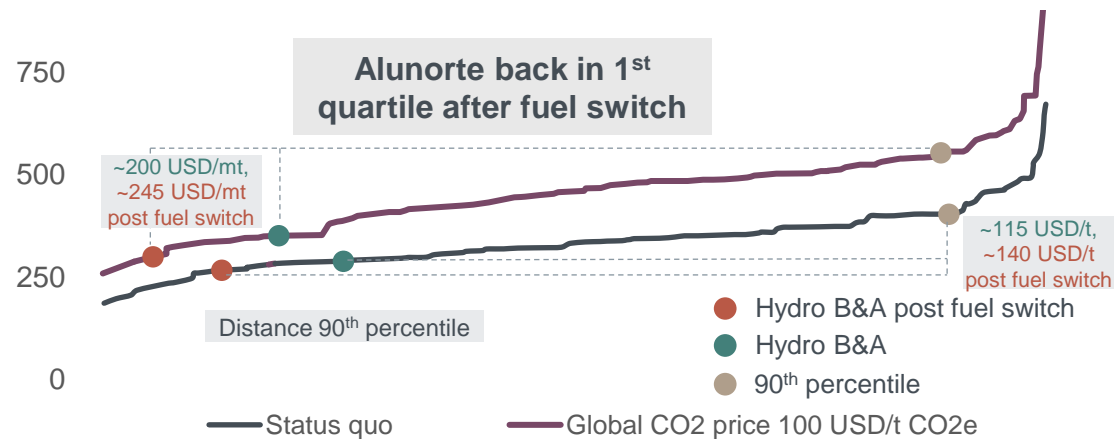


# Steeper cost curve, low-carbon demand and robust position drive margin potential



## Bauxite & Alumina

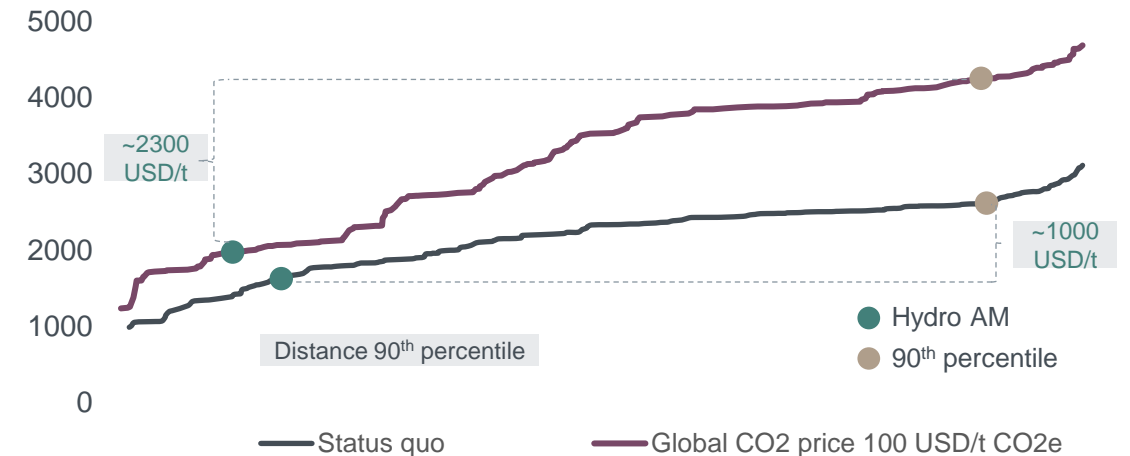
Alumina Business Operating Cost curve (2022)



- Competitively positioned on the global cost curve at the 30<sup>th</sup> percentile
- Fuel switch & electrical boilers project reduce carbon emissions by 30% by 2025
- Global carbon price would improve relative competitive position in Hydro B&A

## Aluminium Metal

Smelter Business Operating Cost curve<sup>1)</sup> (2022)

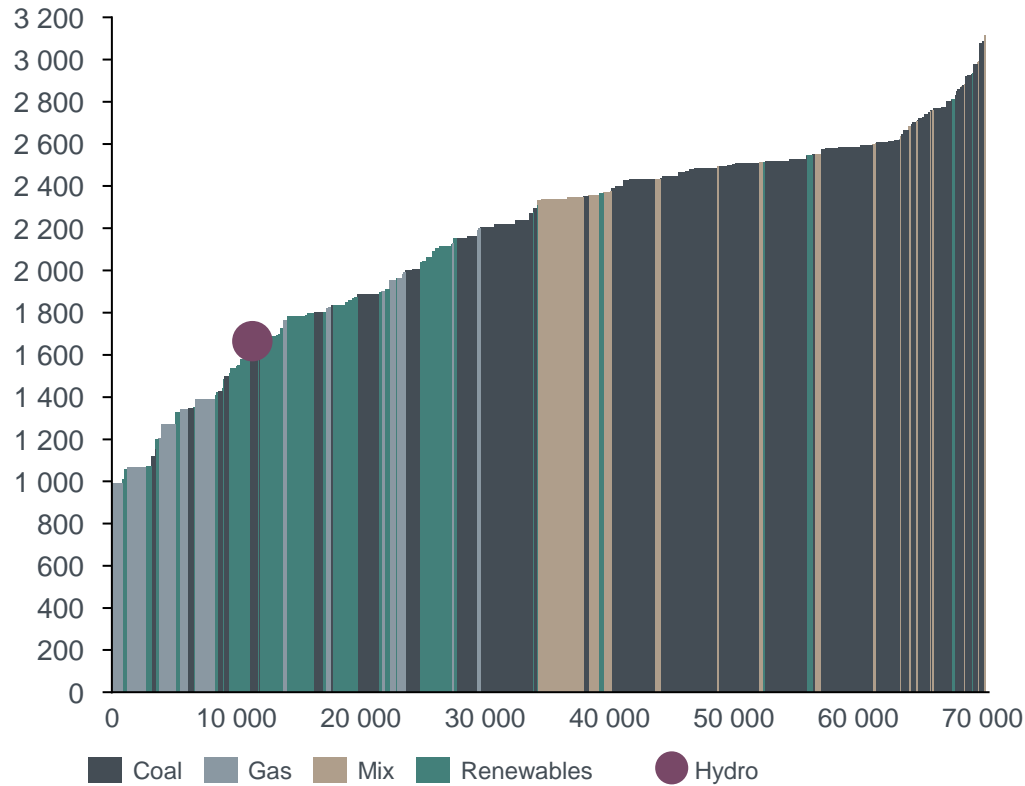


- Competitive relative position on the global cost curve at the 17<sup>th</sup> percentile
- Strong portfolio of low-carbon smelters
- Global carbon price would improve relative competitive position in Aluminium Metal



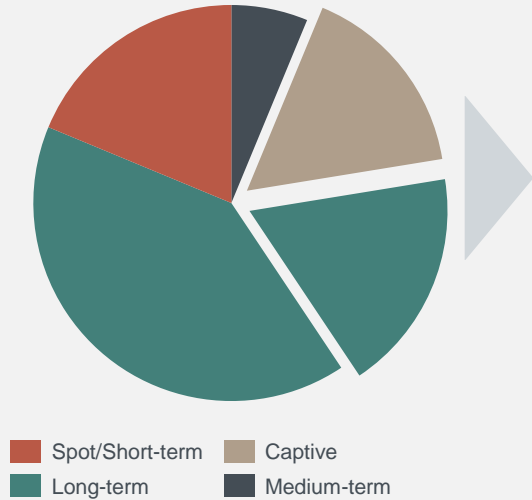
# Long term renewable power contracts ensure robustness

Smelter business operating cost curve 2022  
USD/tonne

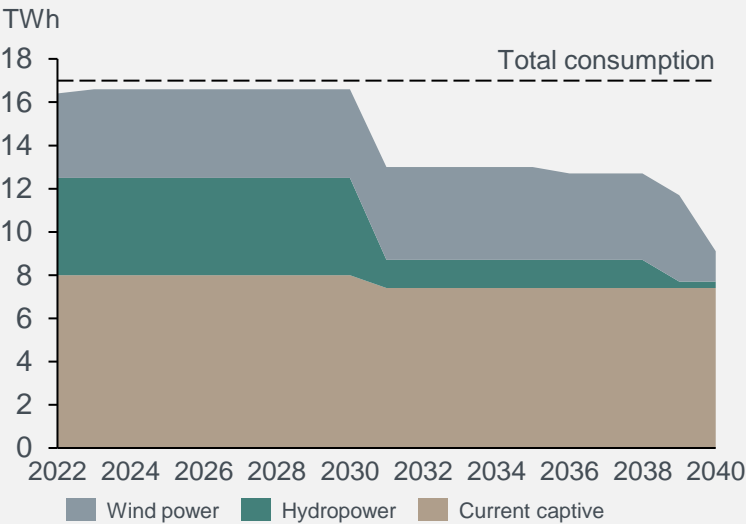


Source: CRU, Hydro analysis  
1) Net ~8 TWh captive assumed available for smelters. 2) Hydro Share: Qatalum captive (50%), Alouette (20%), Tomago (12.4%), Albras (51%). 3) Total Alunorte and Paragominas – all consumption sourced through Hydro

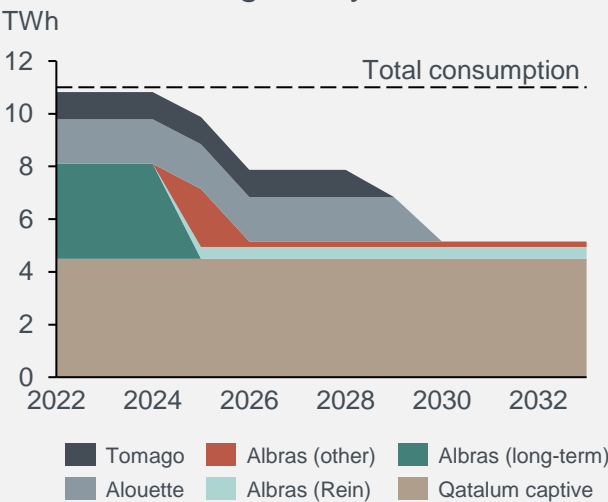
Power sourcing for smelters in Europe



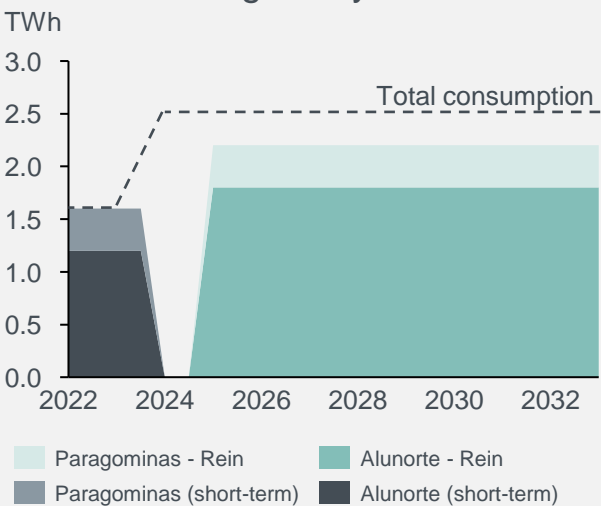
Power sourcing for Hydro smelters in Norway<sup>1)</sup>



Power sourcing for Hydro JV smelters<sup>2)</sup>



Power sourcing for Hydro B&A<sup>3)</sup>

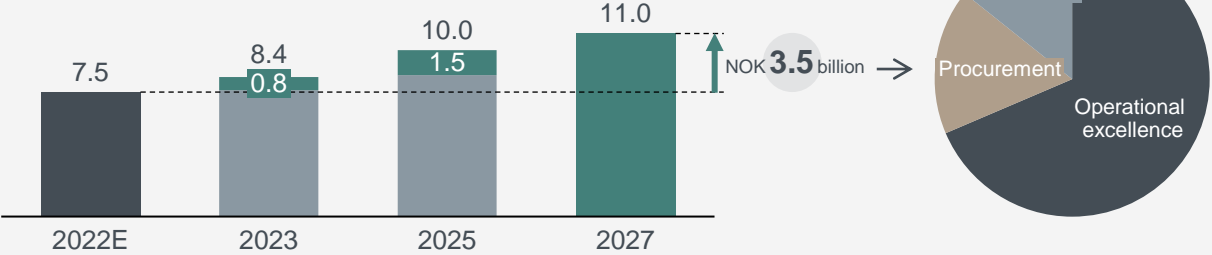


# Increased improvement ambitions

Strengthening future competitiveness and positioning with additional NOK 0.8 and 1.5 billions in 2023 and 2025. Further stretched with additional NOK 1.5 billion by 2027

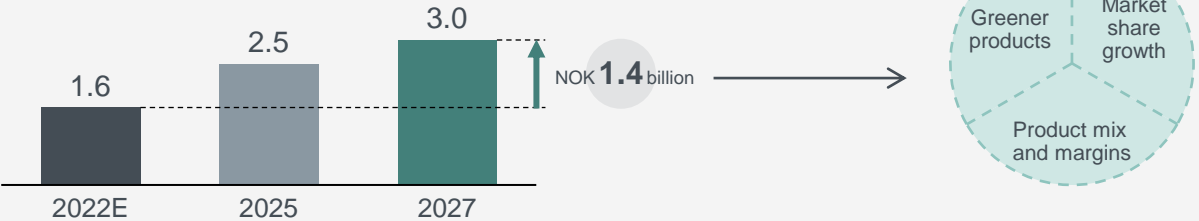
## Improvement program

Ambitions increased in 2023 and 2025, and extended with additional NOK 1 billion until 2027



## Commercial initiatives

Ambition extended with additional NOK 0.5 billion until 2027



2018 baseline on accumulated improvements until 2021, 2021 baseline from 2022. Rebase effect of NOK 0.7 billion for improvement program. NOK 2 billion in annual average CAPEX to meet remaining improvement and commercial ambitions.

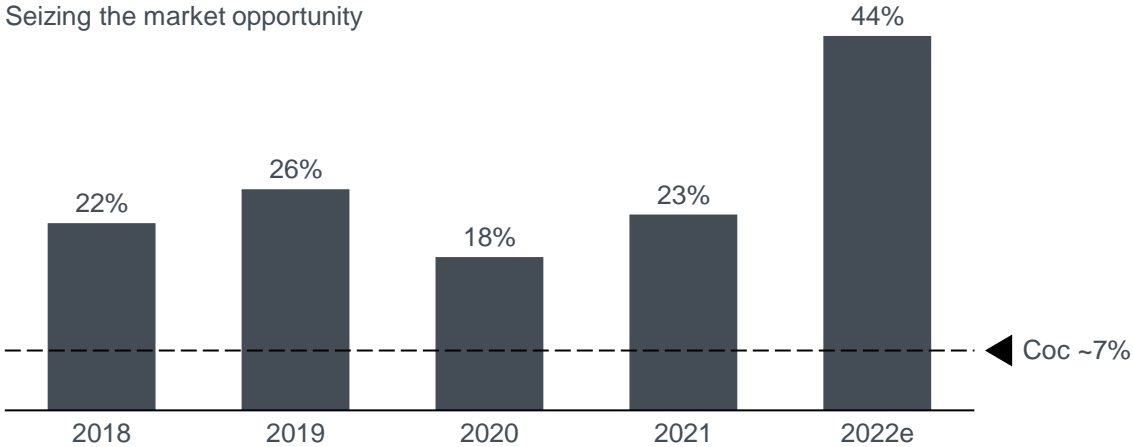


# Increasing PCS recycling ambitions by 140kt

- Delivering on our recycling ambition - several investment decisions made, IRR 15-30%
- Increasing ambitions to use PCS by 140kt, lifting EBITDA ambitions by NOK 1 billion



Attractive RoaCE in our AM recycling portfolio  
Seizing the market opportunity

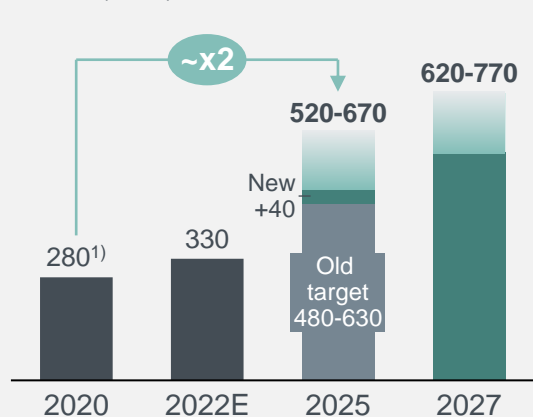


1) Baseline 2020 PCS volume reduced from 290 to 280 kt due to reclassification

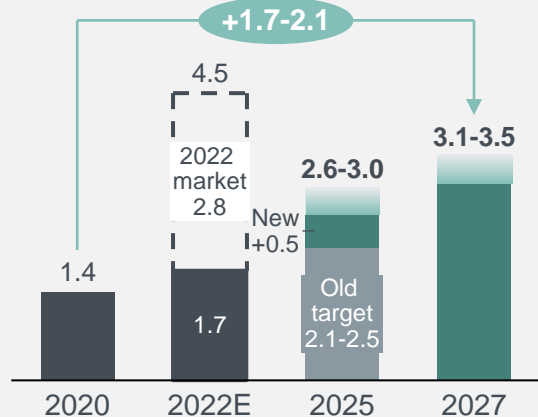
## Recycling 2025 and 2027 targets

All approved project pipeline

PCS usage and ambition  
Tonnes (000s)



EBITDA  
BNOK





# Extrusions on track to deliver NOK 8 billion EBITDA 2025



## Portfolio restructuring

- Automotive, systems business and commercial transport
- Exited non-attractive operations and segments



## Cost reductions

- Dedicated improvement program for procurement and operational excellence (EBS)



## Growth projects

- Capacity and capabilities in attractive segments such as E-mobility and recycling
- Strengthening flagship plants in the portfolio



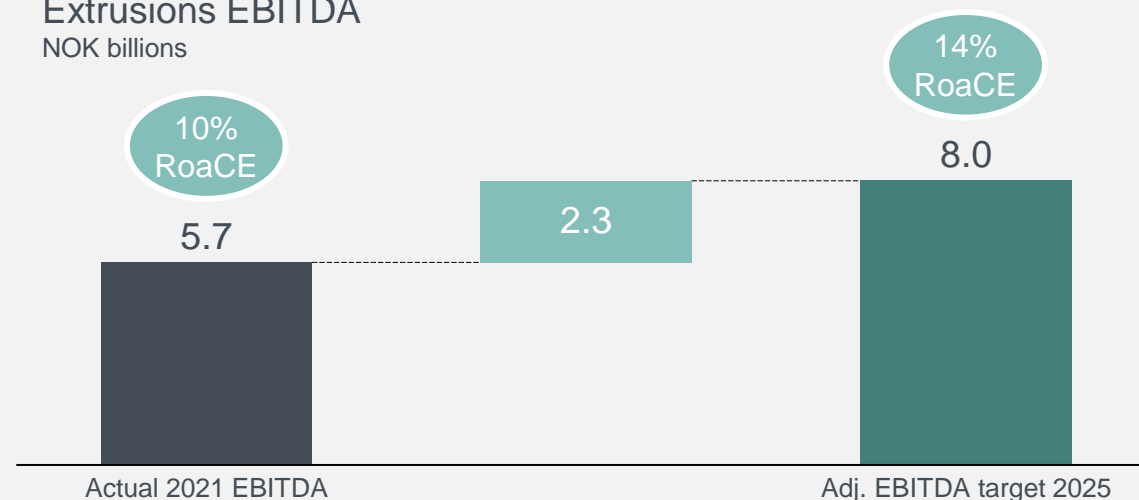
## Sustainability

- Improvements in margins and market share from greener products
- Creating “closed-loops” with customers



## Extrusions 2025 growth target

### Extrusions EBITDA NOK billions





# Growing in energy

Leveraging strong platform and capabilities

## Energy Operations & Energy Markets

- Approx 3.5 BNOK earnings “platform” (LTM adjusted to normal production and no area price gain)
- In addition, commercial contribution of approx. 400 MNOK average last 3 years

REIN 

- USD 2.7 billion contracted revenues<sup>1)</sup>
- NOK 400 - 450 million estimated EBITDA contribution from projects in construction in 2026
- NOK 2.5 billion remaining capex for projects in construction

HAVRAND 

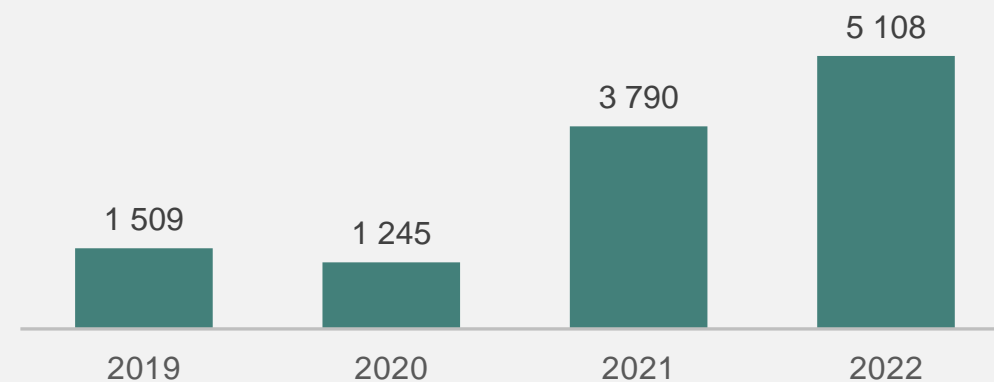
- Establishing as developer, owner and operator of green hydrogen production facilities
- Large fuel switch potential next decade internally, enabling hub development for external customers

## Batteries

- NOK 3 billion capital allocated 2020-2025
- Targeting 3x value uplift on equity invested by 2025



Adjusted EBITDA Energy 2019 – Q3 2022 LTM  
NOK million



1) Projects in construction: Stor-Skälsjön, Mendubim, Boa Sorte, Feijão

# Driving sustainability: Future-proofing our company



- On track to meet 30 percent reduction in scope 1 and 2 CO<sub>2</sub>e by 2030
- Net-zero by 2050 or earlier
- Reduce specific scope 3 emissions by 30% by 2030



- 1:1 reforestation on track
- No net-loss biodiversity ambition for new projects
- Tailings dry backfill technology reducing the need for permanent landfilling
- Continued focus on waste elimination, including new project on recycling bauxite residue



- On track to deliver on target of empowering 500,000 people with skills and education by 2030
- Significant social projects completed in Brazil
- Transparency and traceability of key product sustainability data by 2025 or earlier

# New target to reduce specific scope 3 emissions by 30% by 2030

## Reducing footprint of purchased raw materials

Reducing footprint of external purchased metal is the main source to reduce scope 3 emissions, in addition to external alumina, alloying elements, anodes, caustic soda, fuel and other goods and services

## Increasing the use of post-consumer scrap

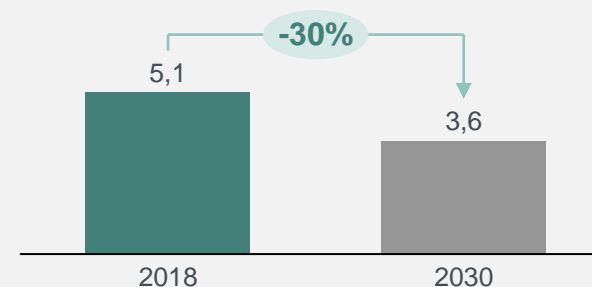
Replacing ingots and pre-consumer scrap input with post-consumer scrap drives down the inherent footprint of the product.

## Alunorte fuel switch and decarbonization

The planned fuel switch and decarbonization will lead to less emissions from production and transportation of fossil fuels

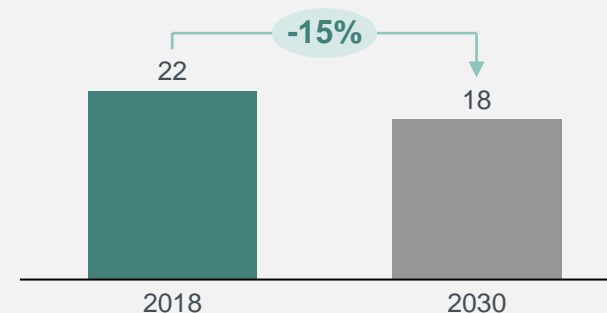


Upstream scope 3 GHG target  
pr tonne aluminium\*



\*Per tonne delivered from Aluminium Metal and Hydro Extrusions combined

Upstream scope 3 GHG target  
Million tonnes CO<sub>2</sub>e



# Improvements and growth drive higher profitability



## Growth and strategic initiatives

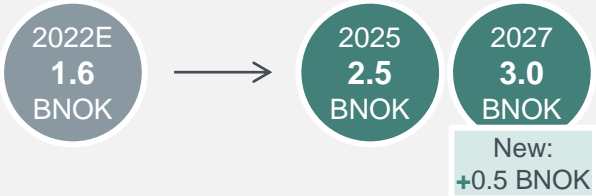
Major changes in business portfolio and/or strategic direction

- **Recycling:** Double PCS and EBITDA by 2025<sup>1)</sup> increased
  - By 40 kt PCS by 2025 and additional 100 kt PCS by 2027
  - Lifting EBITDA by additional NOK 1 billion
- **Extrusion:** Increase EBITDA to NOK 8 billion by 2025 on track
- **Energy:** Grow in new energy solutions
  - Rein, Havrand and Batteries



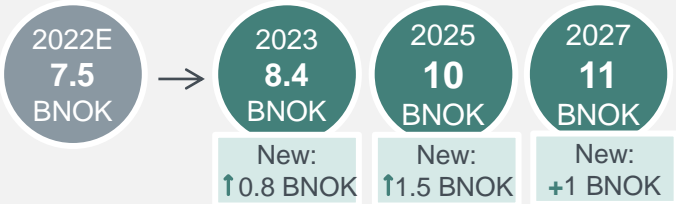
## Commercial ambition<sup>2)</sup>

Pursing market and customer-driven growth opportunities



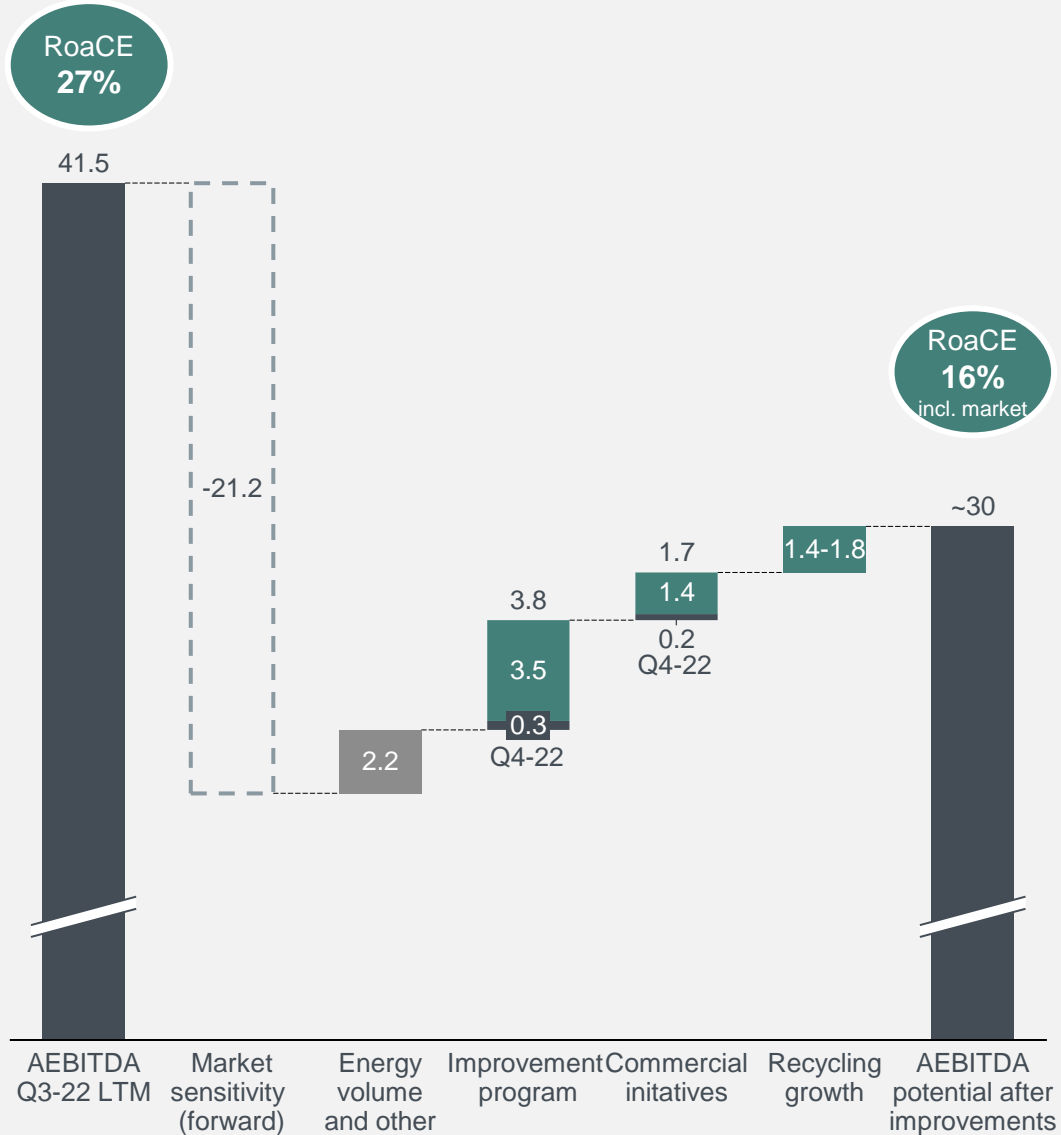
## Improvement program<sup>2)</sup>

Maximizing value-creation from current assets/operations



## Profitability roadmap

AEBITDA Q3-2022 LTM - 2027 BNOK, excluding new energy



1) 2020 baseline  
2) 2018 baseline on accumulated improvements until 2021, 2021 baseline from 2022. ~2 BNOK in annual average CAPEX to meet remaining improvement and commercial ambitions



# Well positioned for future value creation



## People

- Global, highly skilled workforce
- Strong focus on development, diversity, inclusion and belonging



## Technology

- Leading innovation throughout value chain
- Product development in collaboration with customers
- Clear decarbonization roadmap



## Market position

- Close customer collaboration and partnerships
- Integrated value chain
- Strong positions with Europe and North America
- Value added products



## Sustainability

- Comprehensive low-carbon aluminium offerings
- Renewable energy foundation
- Leading post-consumer scrap competence



# Energy

## Leveraging energy capabilities and portfolio

Capital Markets Day 2022

Arvid Moss

EVP Energy

# Geopolitics accelerating the energy transition

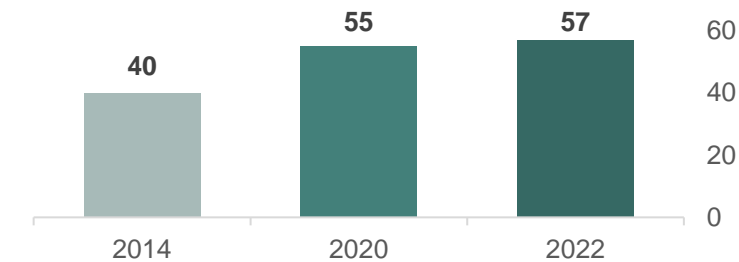


The war in Ukraine is putting the global energy system to a test

## EU increasing 2030 renewables targets

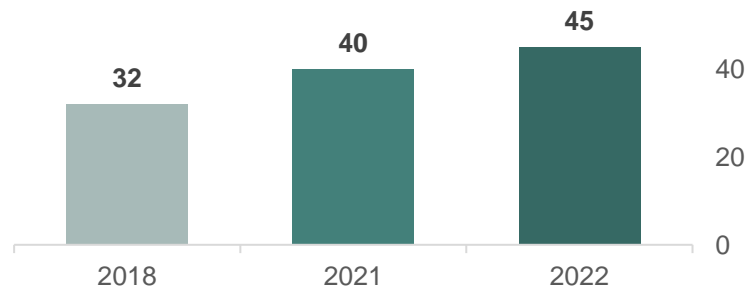
2030 - reduction target

% net reduction in GHG emissions, from 1990 levels



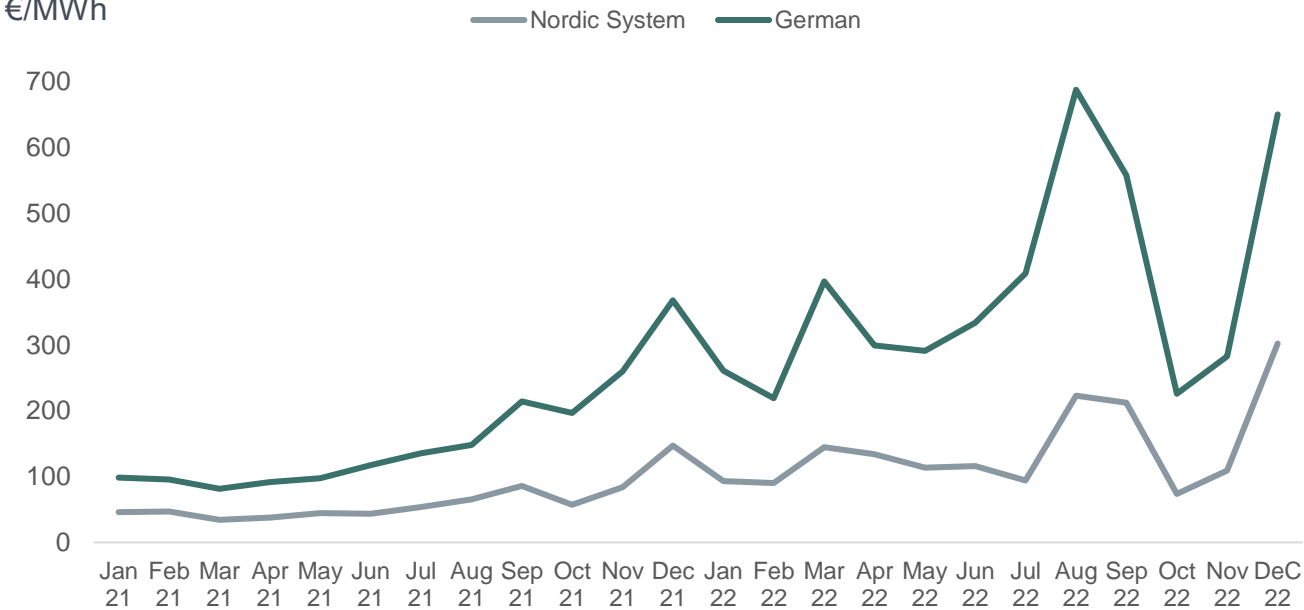
2030 - renewable energy share in EU

% share of overall energy mix (Fit for 55)



## European power prices 2021 – 2022

€/MWh



**2030:**

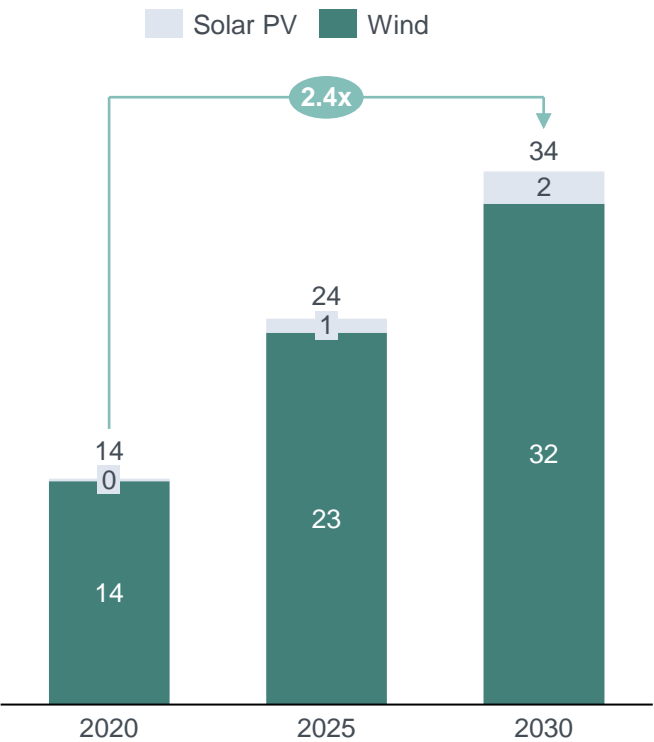
LCOE wind Nordics: 20-32 €/MWh

LCOE wind Germany: 24-44 €/MWh

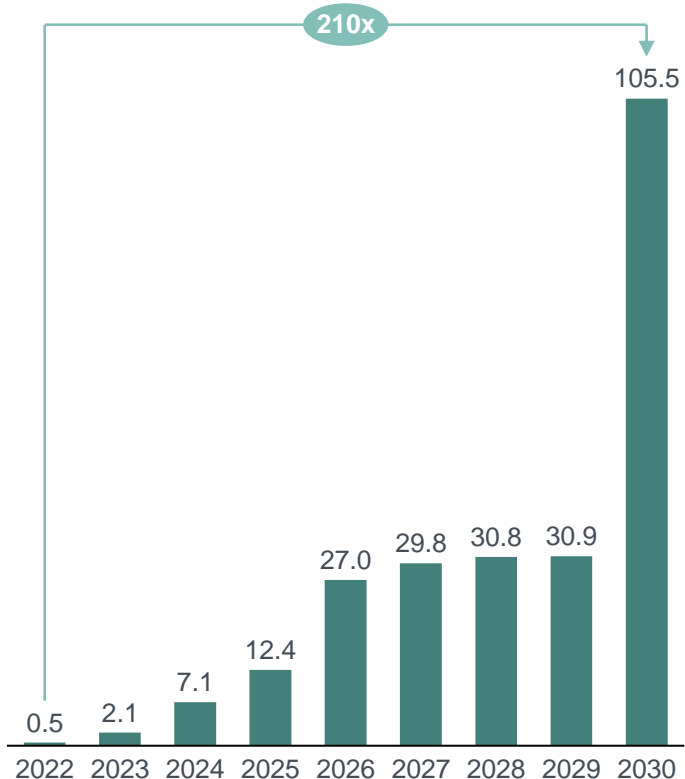
# Expect strong demand for renewables and storage/energy carrier solutions



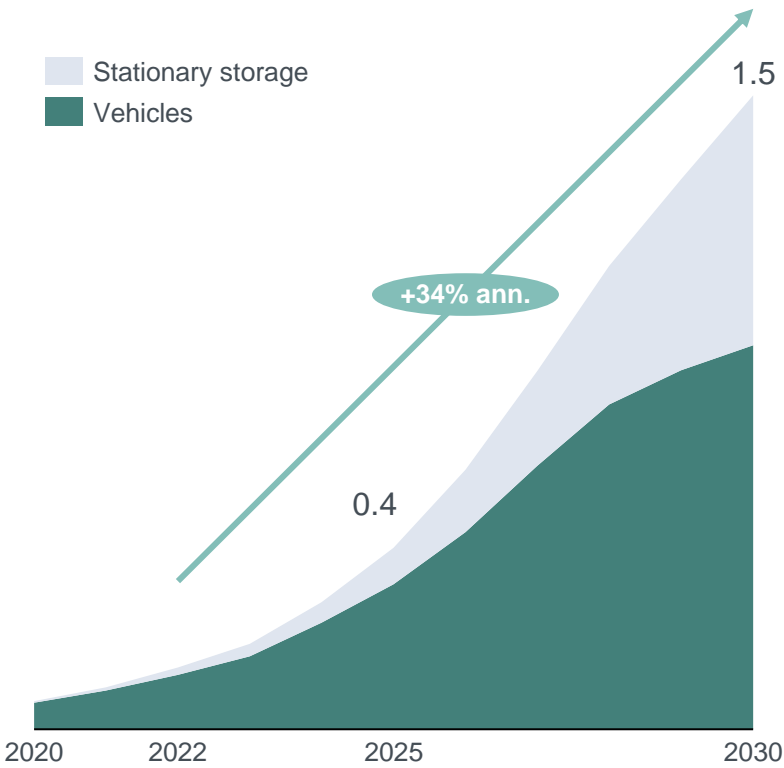
Norway and Sweden renewable capacity forecast<sup>1)</sup>  
GW



Cumulative pipeline of green hydrogen electrolyzers proposed by EMEA developers  
GW



European battery demand  
TWh



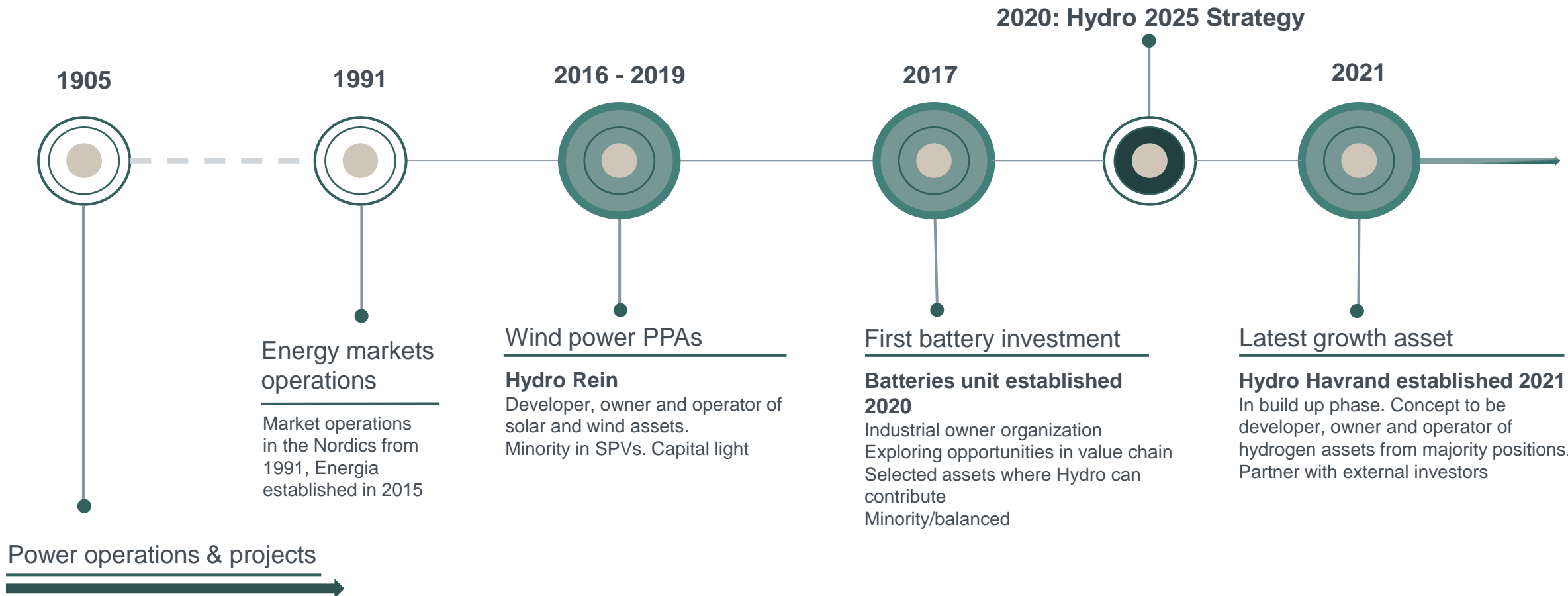
Source: BloombergNEF, Rystad Energy (scenario tracking UN IPCC 1.6 DG scenario; not constrained by potential supply chain limitations)  
1) Non-hydro



# Pursuing growth opportunities at different stages



Realizing value potential in Batteries, Hydro Rein & Hydro Havrand



# Strong production platform, market performance and growth opportunities



## Excellent hydropower operations & growth projects

### 14.0 TWh

Operations of power assets in Norway.  
9.4 TWh equity owned hydropower.  
Karmøy 4 TWh smelter control room service

### NOK 1 billion

Potential Hydro investments in Lyse Kraft DA giving 150 MW and 60 GWh supporting green shift and high-end volatile market

### 200 GWh

Potential increased production in Fortun by building pumping power station at Illvatn and Øyane

## Leading power market player

### Top 5 in Europe on PPAs

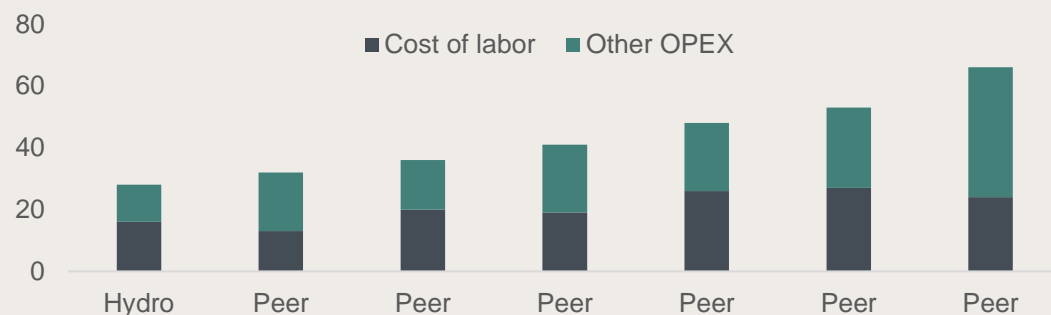
Among the largest PPA buyers in Europe, measured in MW over the last 6 years

Market analysis, market operations, sourcing, trading & portfolio management

Among the top 10% largest energy trading companies and managing the 2nd largest power consumption portfolio in Brazil

## Industry leader on cost and operational performance

Resource spend Norwegian hydropower players 2020  
NOK/MWh



1) Based on a normal production of 9.4 TWh with a 2021 seasonal profile at last 12 months prices of NOK 2 / kWh  
Sources: THEMA, Schneider Electric: Neo Network PPA Deal Tracker 2017-2022

## Strong platform for value creation

- EBITDA “platform” from operations:
  - 8 TWh** on long term contracts (predictable prices) + **2 TWh** (avg.) net long spot volume in merchant market:
  - App. **NOK 3.5 billion** LTM adjusted with normal production and no area price gain<sup>1)</sup>
- Commercial contribution in addition of app. **NOK 400 million** average last 3 years
- Well positioned portfolio to benefit from area price differences
- Maturing portfolio growth options; emphasis on flexible production & selected geographies

# Energy assets and unique competence drive value creation across Hydro



## Strong platform for production, sourcing and advisory



**Operations and projects:** HSE excellence, operating 40 power plants across Norway (hydropower and wind). Large scale project execution across new units and Hydro



**Commercialize positions:** PPA originator, from “as produced” to PPA profile, highly competitive sourcing and optimal energy solutions



**Market, grid & regulatory insight:** Strong market presence and insight, monitoring regulatory initiatives across Norway, the EU and Brazil. Grid and infrastructure development

## Decarbonizing Hydro and external industries

### Decarbonizing Hydro

- Power sourcing, managing and matching profiles and consumptions
- Hydro Rein offering renewable power and energy solutions
- Hydro Havrand replacing fossil fuels with green hydrogen
- Hydrovolt delivering post consumer aluminium scrap from used EV batteries

### Decarbonizing industries

- Investing in renewables in the Nordics, Europe and Brazil and PPAs to external customers
- Battery materials investments focused on reduced CO<sub>2</sub>-footprint from LCA<sup>1)</sup> perspective
- Green hydrogen to fuel switch industries and transport

# Position and capabilities across entire value chain

Major renewable energy producer, market player and offtaker

## In Operation

Hydropower in Norway (equity): 9.4 TWh

Hydropower in Norway (operator): 13 TWh

Wind power in Norway (operator): 0.7 TWh

## Sourcing

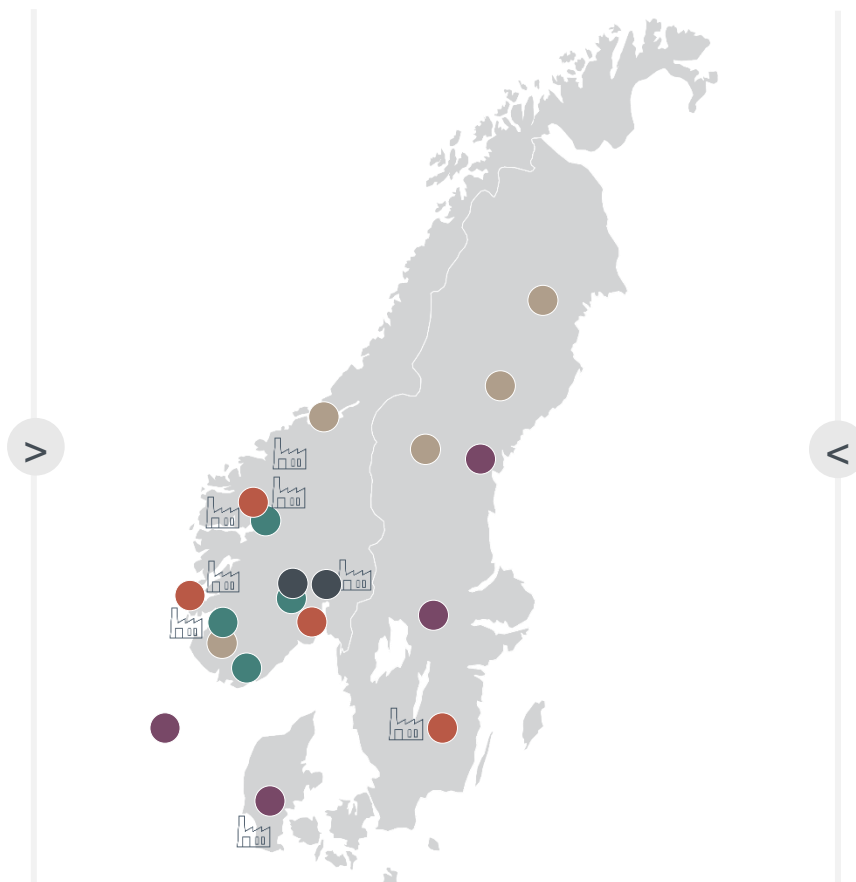
Hydropower in the Nordics: 4.8 TWh

Wind power in the Nordics: 4.3 TWh

## Hydro Rein projects under development

Wind power in the Nordics: 2.8 TWh<sup>1)</sup>

Solar power in the Nordics: 0.4 TWh



## Offtake Aluminium Metal

Norwegian smelters: 17 TWh

## Offtake Extrusions

Selected Extrusion plants: 0.1 TWh

## Potential offtake Batteries

Potential sites portfolio companies: 1 TWh

## Potential offtake green Hydrogen

Hydrogen hubs at selected strategic sites

● Equity power

● Sourcing

● Hydro Rein projects

● Hydrogen hub

Industrial offtake

● Market operations

1) Sørliche Nordsjø II not included



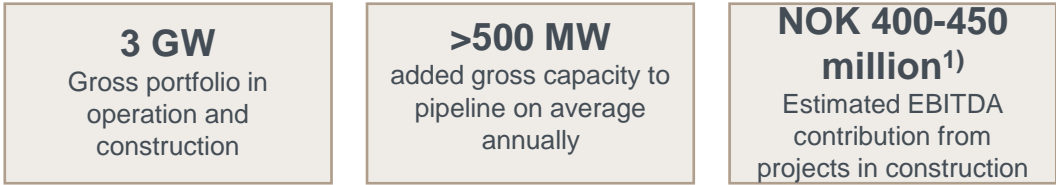
# Hydro Rein: Delivering on Hydro's ambitions in renewable growth. Active capitalization process ongoing



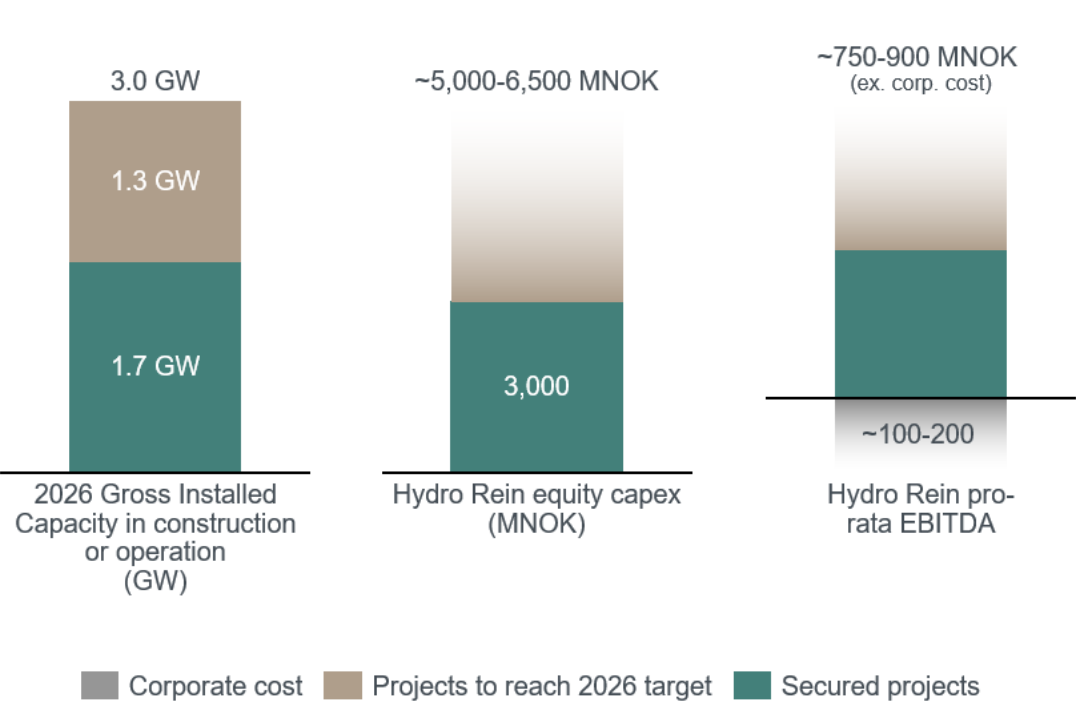
## Significant progress last 24 months



## Hydro Rein in 2026



## Hydro Rein EBITDA estimates 2026/27. CAPEX 21-26



All financial figures in MNOK has been converted by using fixed FX of 9.7 on EUR/NOK and USD/NOK  
Capex and EBITDA figures for indicative/pipeline projects to secure the additional 1.3 GW are based on high-level multiples for targeted wind and solar project in Nordics and Brazil, based on an assumed technology mix, targeted ownership share and leverage. All figures exclude Energy Solutions and Offshore wind.

# Hydro Rein: Focus on early-stage development portfolio in the Nordics

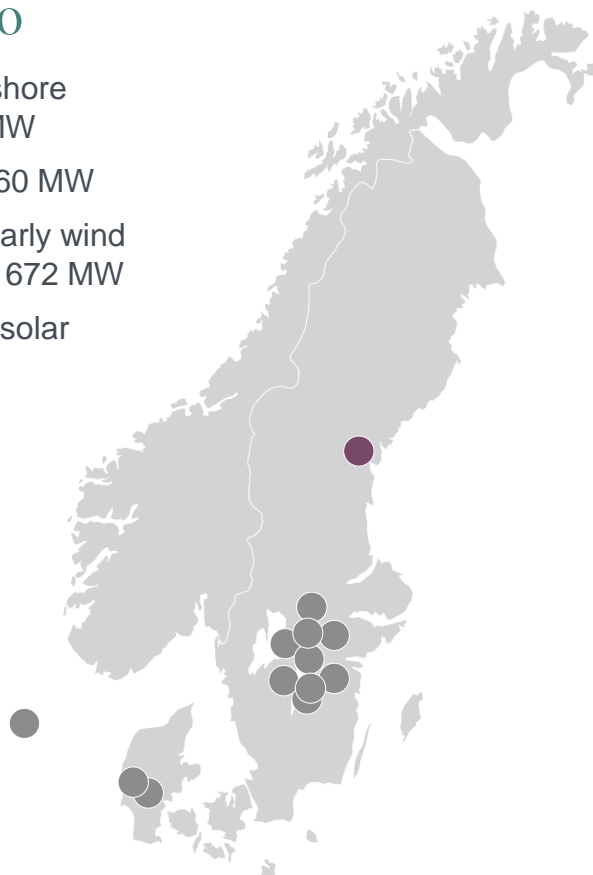
## Nordic portfolio

Sørlige Nordsjø II, offshore wind, phase I: 1,500 MW

Stor-Skälsjön, wind: 260 MW

Southern Sweden, 9 early wind development projects: 672 MW

Jylland in Denmark, 2 solar projects: 362 MW



● Operation    ● Construction    ● Pipeline

## Developing renewable power to fuel greener industries



Focus on early phase opportunities



Development model based on strategic partnerships with relevant stakeholders, from landowners to customers



Portfolio based on complementary technologies, including growing position in solar PV



Increasing share of services, from development to operations

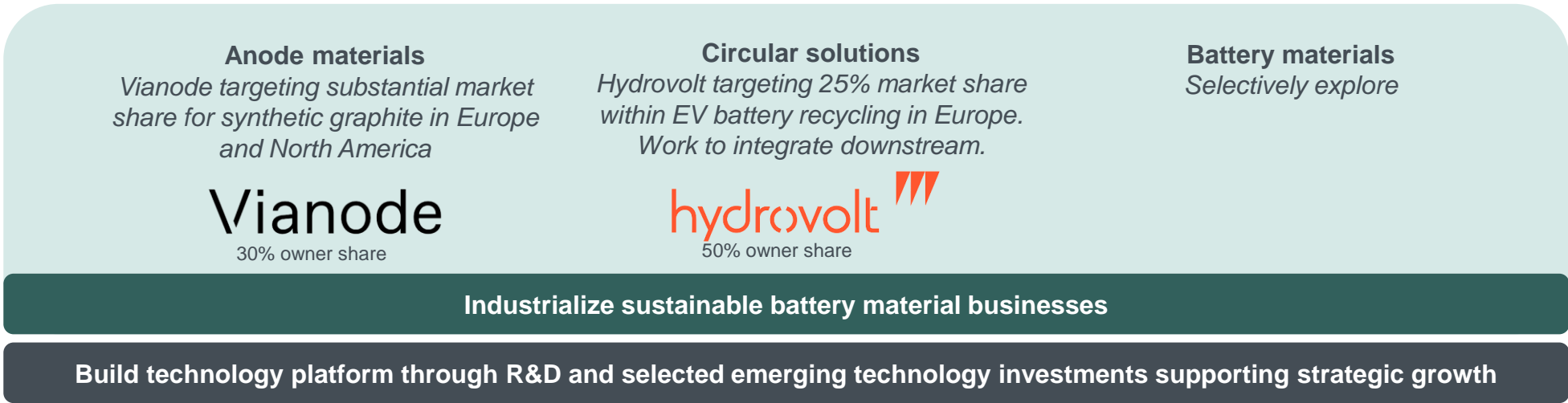


Large portfolio of complementary “inside the fence” projects (storage, onsite generation, efficiency)

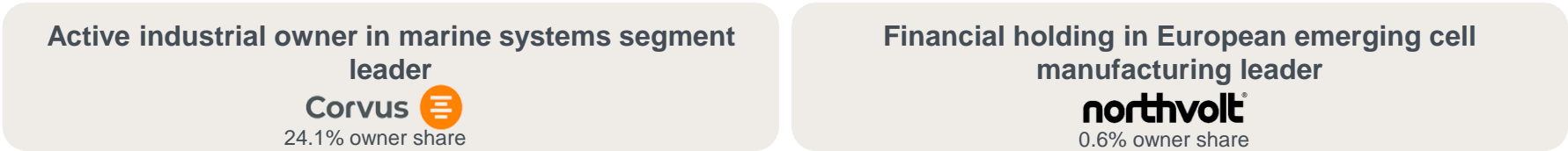
# Focused battery strategy: Grow within sustainable battery materials by leveraging Hydro's capabilities



## STRATEGIC GROWTH










## PORTFOLIO HOLDINGS



**Active industrial ownership leveraging capabilities:** Industrial scaling of innovative technologies, energy expertise, automotive experience, battery investor

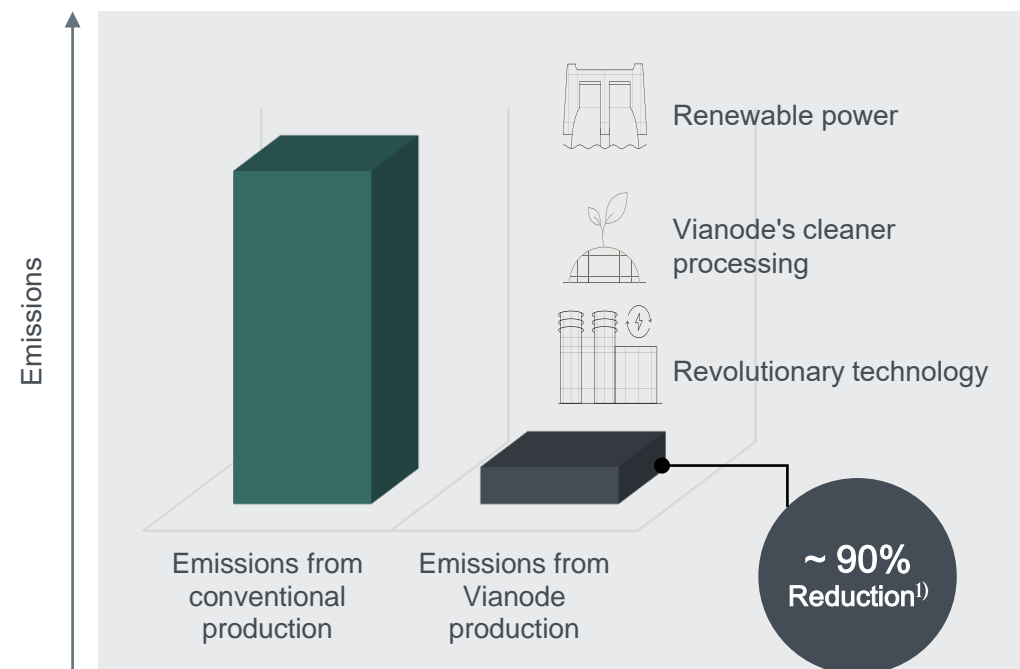
**Hydro foundation:** Mission, values, and group finance, M&A, HSE, and sustainability

# Vianode targeting the largest undersupply in the battery value chain. First full-scale production line underway

	Description	Status	Capacity
Pilot	 <ul style="list-style-type: none"> <li>All process steps</li> <li>Small size industrial equipment</li> <li>Located in Kristiansand, Norway</li> </ul>	In operation	R&D Samples 
Industrial pilot	 <ul style="list-style-type: none"> <li>All process steps</li> <li>Industrial environment</li> <li>New R&amp;D center</li> <li>Located at Kristiansand, Norway</li> </ul>	In operation	Customer samples 
Vianode Phase 1	 <ul style="list-style-type: none"> <li>Full scale production lines</li> <li>Located at Herøya, Norway</li> </ul>	Operational from 2024	~20,000 EVs per year 
Vianode Phase 2	 <ul style="list-style-type: none"> <li>Modular design for rapid expansion based upon phase 1</li> </ul>	Operational from 2026	~1 million EVs per year
Vianode by 2030			~2 million EVs per year

## Enabling near zero emissions

Emissions reduction compared to the production process in today's market

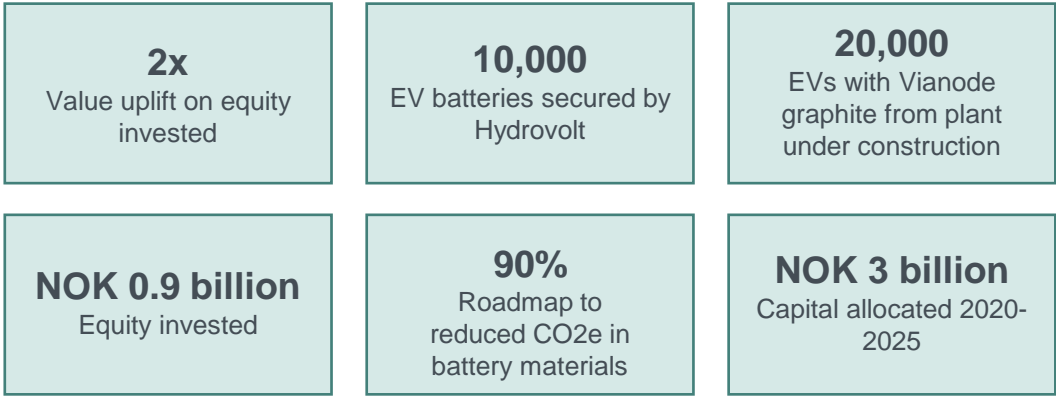




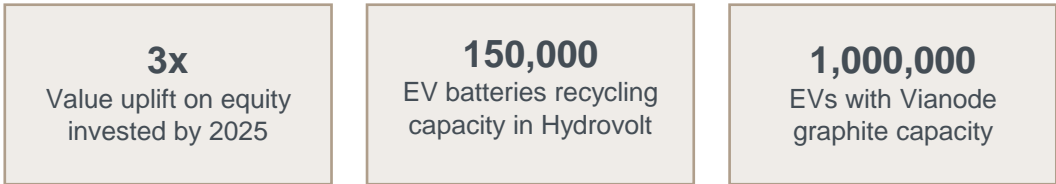
# Batteries delivering on strategy and stated value creation potential



## Significant progress last 24 months



## Batteries in 2027



## Key capabilities



Scaling capability, energy expertise and automotive experience



Working in strong partnerships to build scale and accelerate growth



Leading sustainability expertise – driving and implementing sustainability ambitions

# Hydro Havrand: Creating a competitive green hydrogen player

## First mover position from industrial consumption in Hydro

<b>Multi-GW</b> potential internal Hydro offtake	<b>30%</b> reduction of Hydro emissions by 2030	<b>70+</b> potential Hydro locations worldwide
<b>&gt; 1 GW</b> Working with partners on large scale	<b>1st</b> pilot for zero carbon aluminium in Høyanger	<b>~30 FTEs</b> Multinational and diverse team

## Hydro Havrand in 2027

<b>International</b> Plants in operation in several markets	<b>Fuel switch</b> Proven for key industrial processes	<b>Partnerships</b> Both capital and projects
---	--	---

## Strategic approach and overview



Establishing as a developer, owner and operator of green hydrogen production facilities.

Initiating first-mover projects to decarbonize Hydro with green hydrogen. Scaling and exploring next steps in partnerships



Ongoing technology qualification of hydrogen for decarbonization of aluminium value chain, through laboratory and full industrial scale tests



Maturing projects in Norway and internationally, working in strong partnerships to build scale and accelerate growth



Incentives for scaling the market is emerging, and will unlock demand

REPower EU and US IRA act demonstrate that political ambitions for green hydrogen are increasingly supported by financial mechanisms

# Value creation across the energy space going forward

- 1** | Expanded footprint in the Nordics in terms of power and market operations, projects and sourcing
- 2** | Sourcing and management of power and fuels for Hydro operating assets across geographies
- 3** | Hydro Rein successfully established as separate company with external capital and partners
- 4** | Hydro Havrand developing portfolio, with external capital and partners delivering speed in green fuel switch in industries and transport
- 5** | Preferred partner for industrializing sustainable battery material businesses in Europe





# Ambitious pathway to net-zero and sustainable value creation

Capital Markets Day 2022

Hilde Merete Aasheim

President and CEO



# Product qualities and roadmap to zero make aluminium key for green transition

Key **properties** of aluminium match requirements – lightweight, conductive, corrosion resistance



**Infinitely recyclable** with very low energy need and high resource efficiency



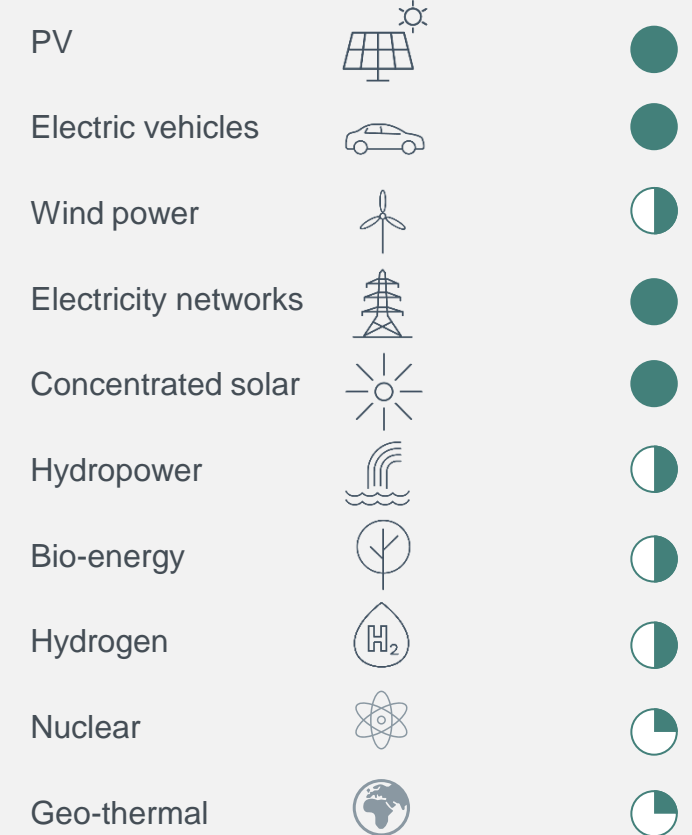
Aluminium based on renewables has **lower footprint** than global average



Aluminium has a **clear roadmap** to zero emissions



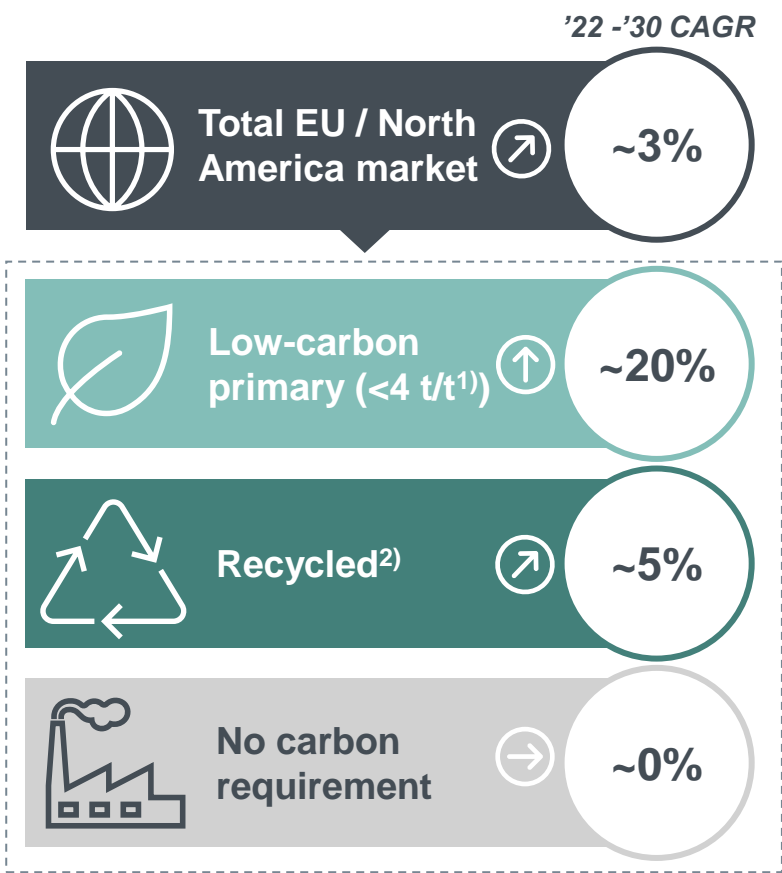
## Importance of aluminium within key green transition technologies<sup>1</sup>



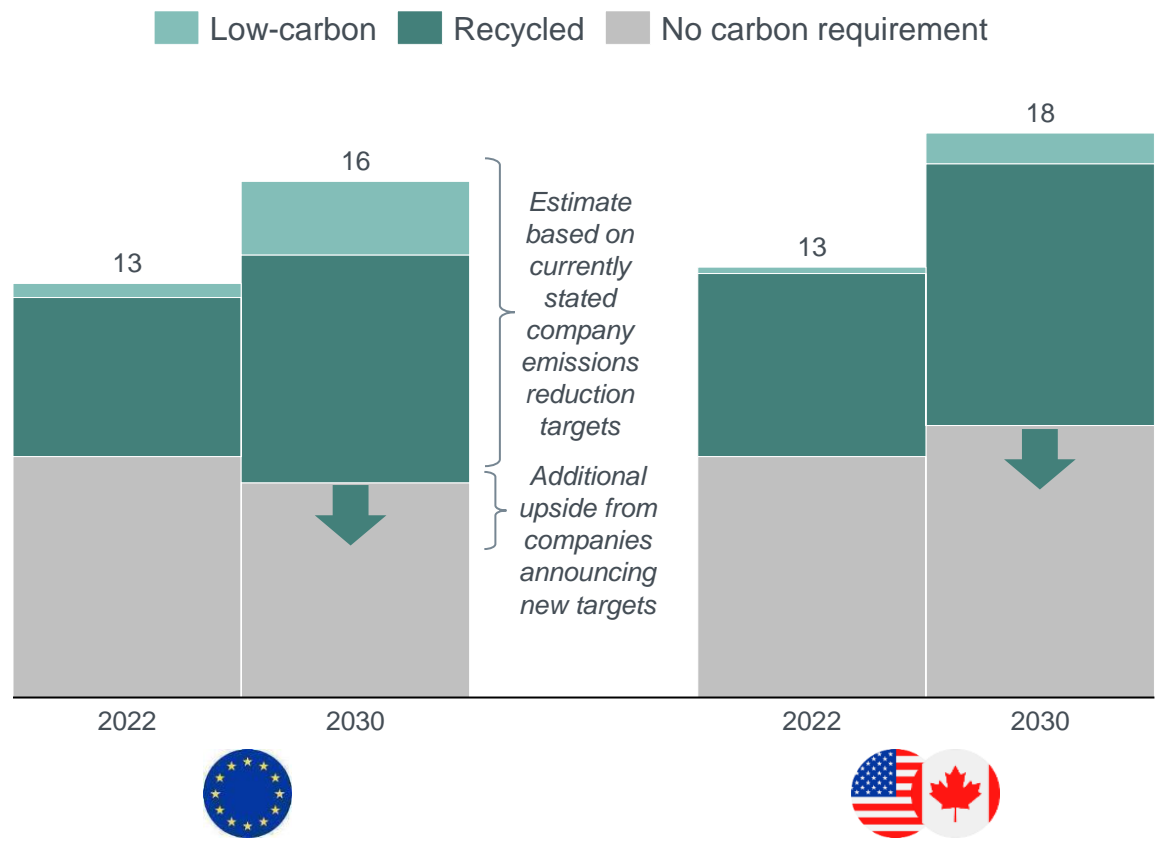
# Demand for greener aluminium accelerates

Low-carbon and recycled aluminium to make up majority of EU and North America market by 2030

Greener demand growth is outpacing the rest of the market



Estimated demand from currently stated company emissions reduction targets – demand upside as new targets are expected

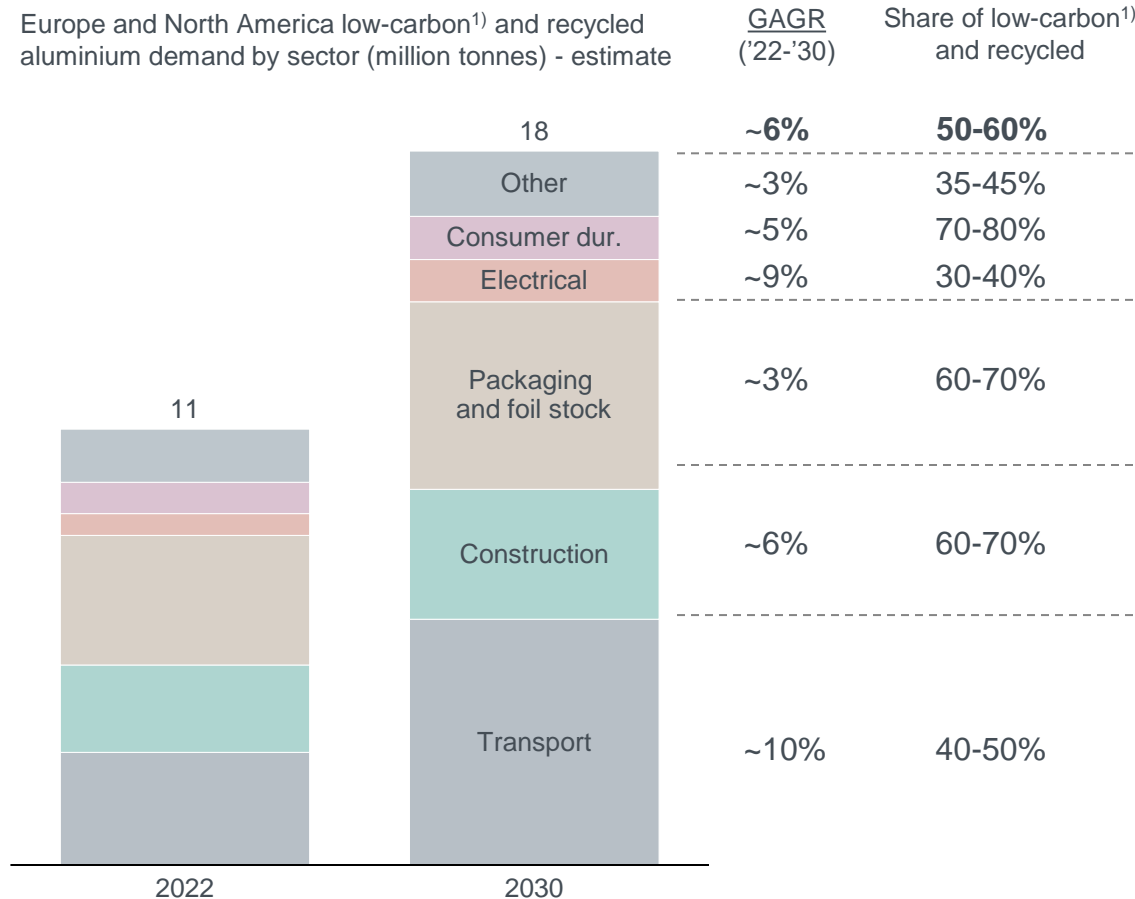


1 ) Tonnes of CO<sub>2</sub>e per ton of primary aluminium produced, including full value chain emissions. 2) Does not distinguish between post-consumer scrap and process scrap

# Carbon reduction targets growing across market segments



## Estimated demand based on currently stated ambitions



## Examples of front runners with ambitious 2030 targets

	Scope 3 reduction targets	Specific aluminium commitments
	CO2e neutral value chain	10% of primary at <3 t/t
	45% per MWh generated	
	52% per MW constructed	
		10% of primary at <3 t/t
		10% of primary at <3 t/t
	50% for absolute emissions	Max. 2.0 kg carbon emitted / kg
	30% for absolute emissions	
	20% for absolute emissions	
	CO2e neutral balance sheet	
	CO2e neutral (2039)	
	25% per vehicle (2025)	10% of primary at <3 t/t
	22% per vehicle	
	30% per vehicle	

1) <4 tons of CO<sub>2</sub>e emissions per ton of primary aluminium produced, including full value chain emissions

# Hydro provides products with low emissions

Primary aluminium produced on renewable energy



**4-6 times**

lower than the world global primary average

Recycled aluminium from Hydro



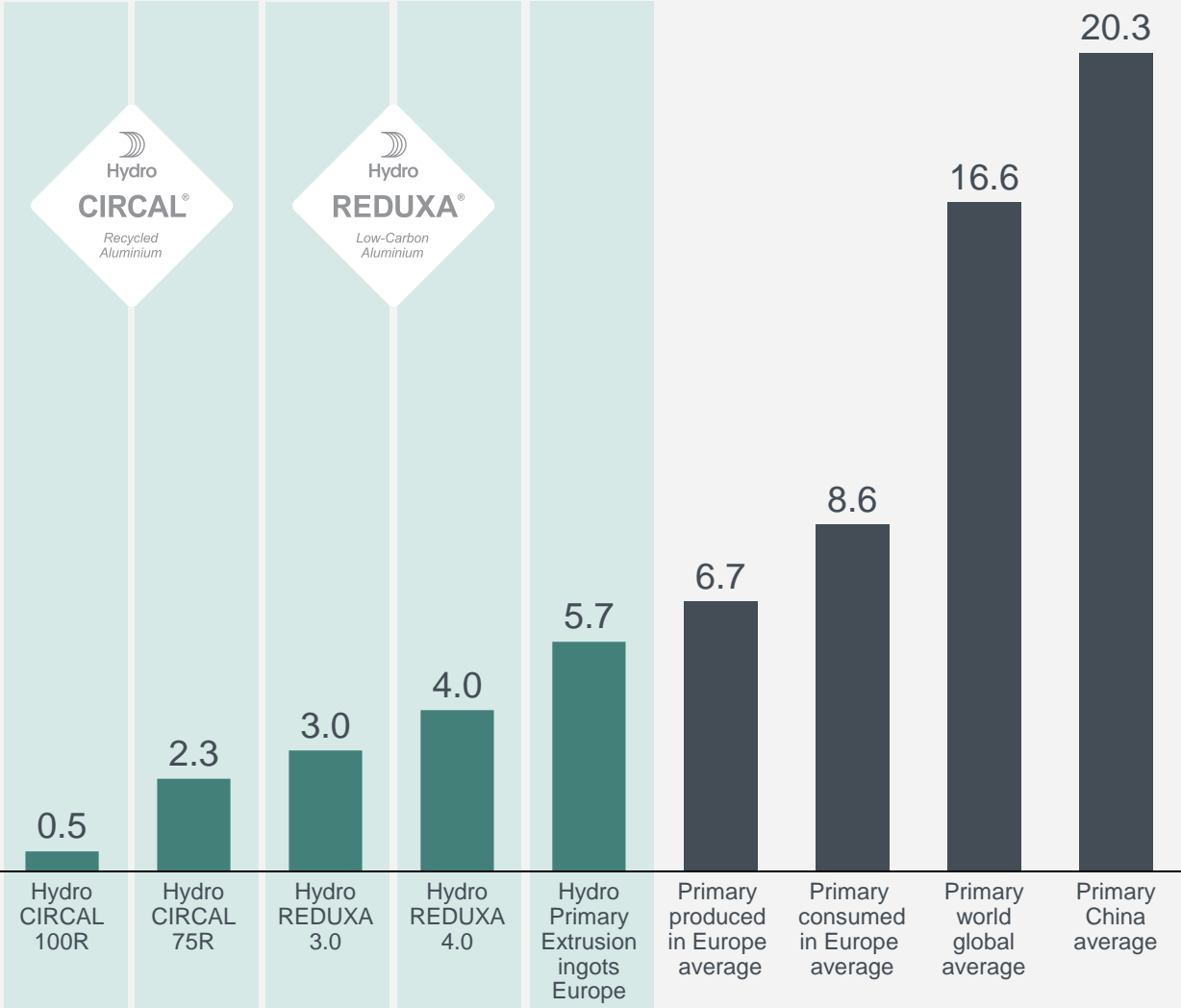
More than  
**7 times** for 75R, and  
**33 times** for 100R

lower than the world global primary average

Sources: EAA, IAI, Hydro internal analysis



Kilos of CO<sub>2</sub>e emissions per kilo aluminium

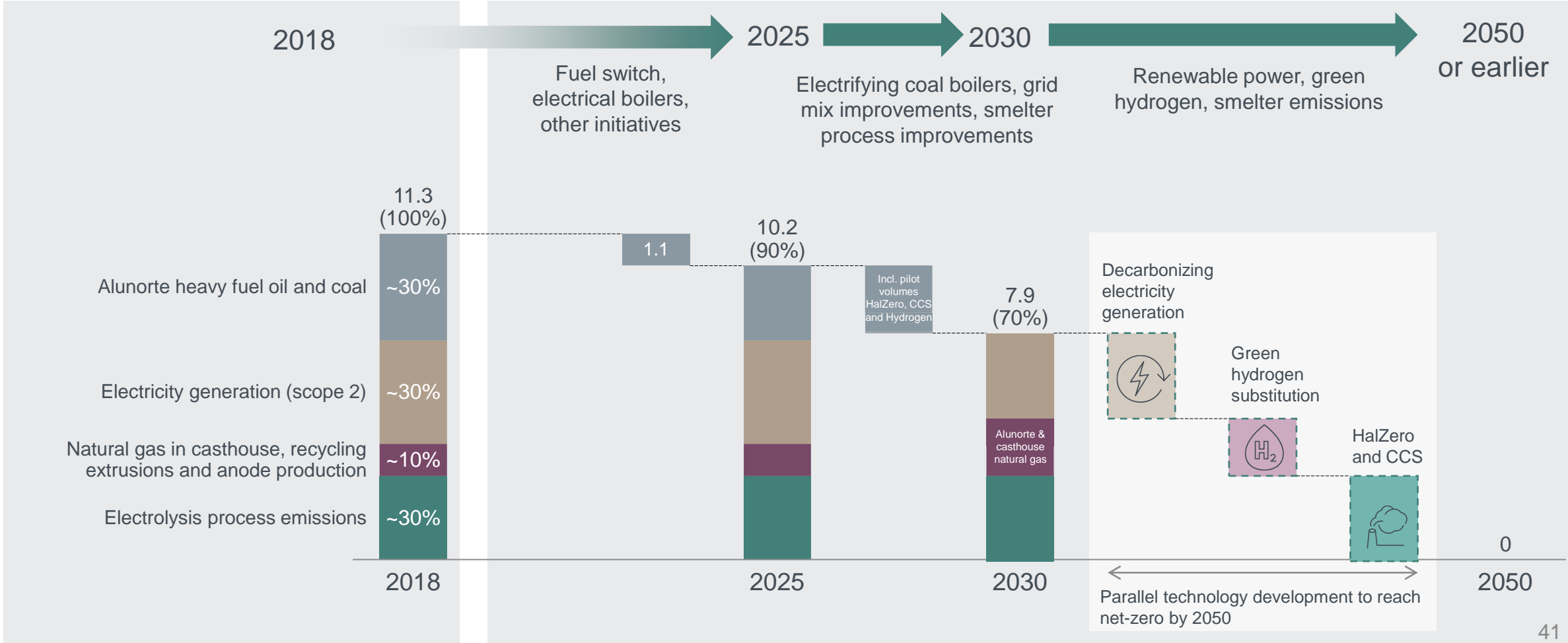


# Net-zero Hydro: The roadmap



On track to achieve 30% carbon emissions reduction by 2030 and net-zero by 2050 or earlier

GHG emissions – ownership equity  
Million tonnes CO<sub>2</sub>e (% of 2018 baseline emissions)

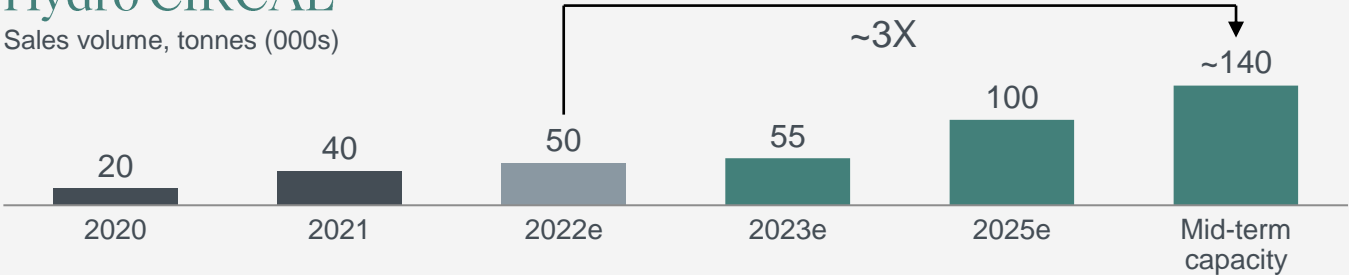




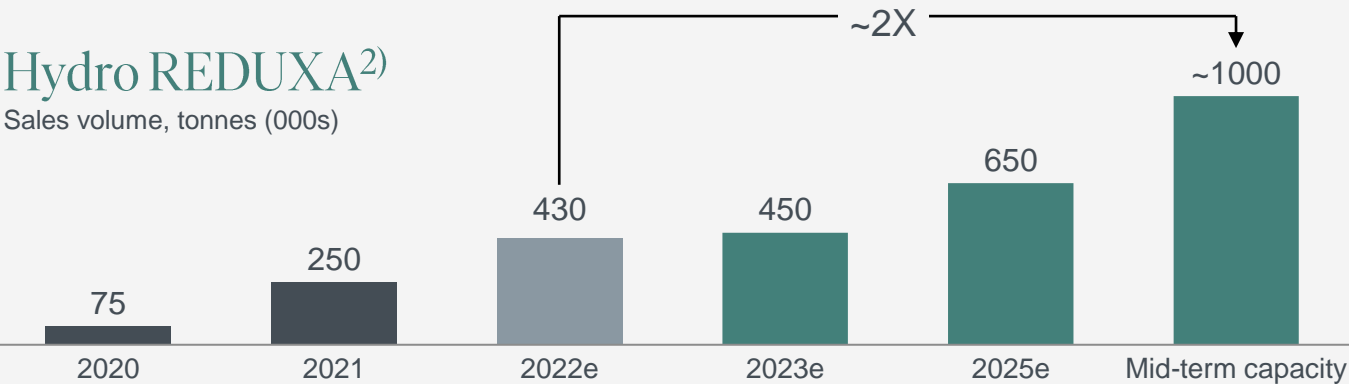
# Ambition to more than double sales of greener products to meet market demand



Hydro CIRCAL<sup>1)</sup>  
Sales volume, tonnes (000s)



Hydro REDUXA<sup>2)</sup>  
Sales volume, tonnes (000s)



1) Post-consumer scrap < 75%. 2) Footprint < 4.0



# Bauxite & Alumina Sustainability

Capital Markets Day 2022

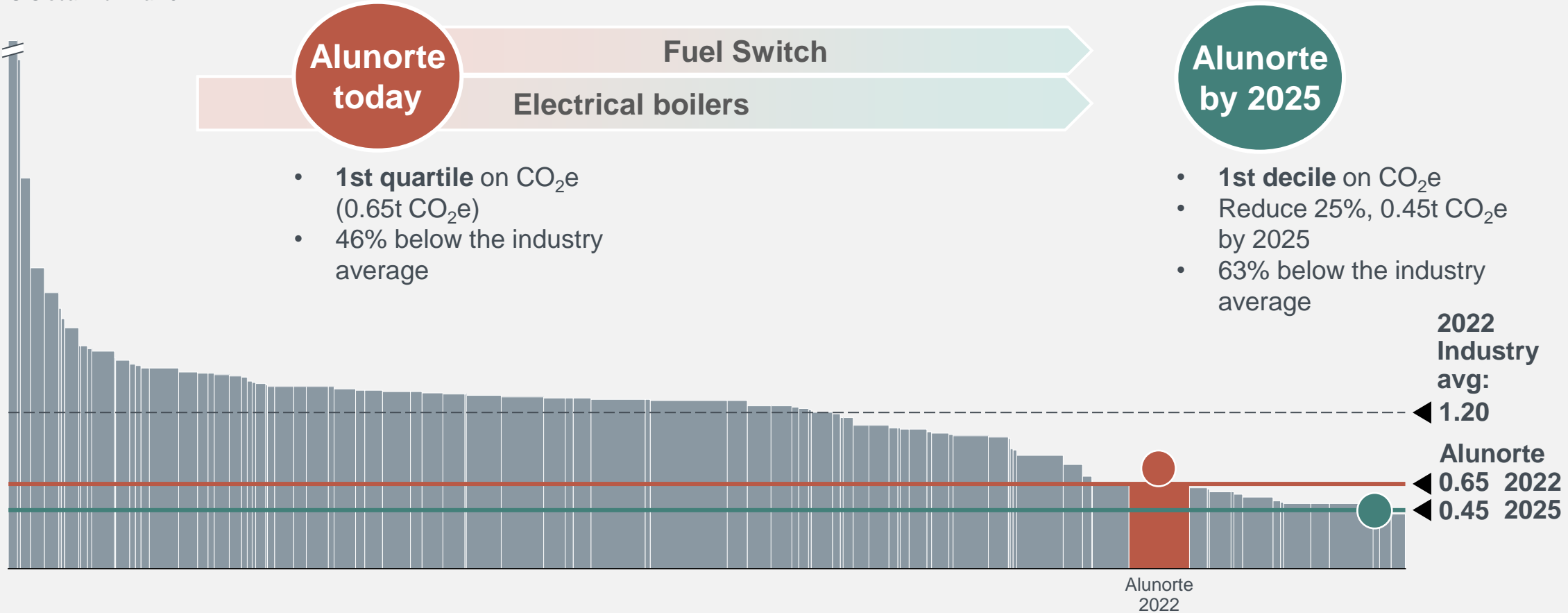
John Thuestad

EVP Bauxite & Alumina

# Decarbonization ambition: Alunorte is 1st quartile in CO<sub>2</sub>e with a clear plan to 1st decile by 2025



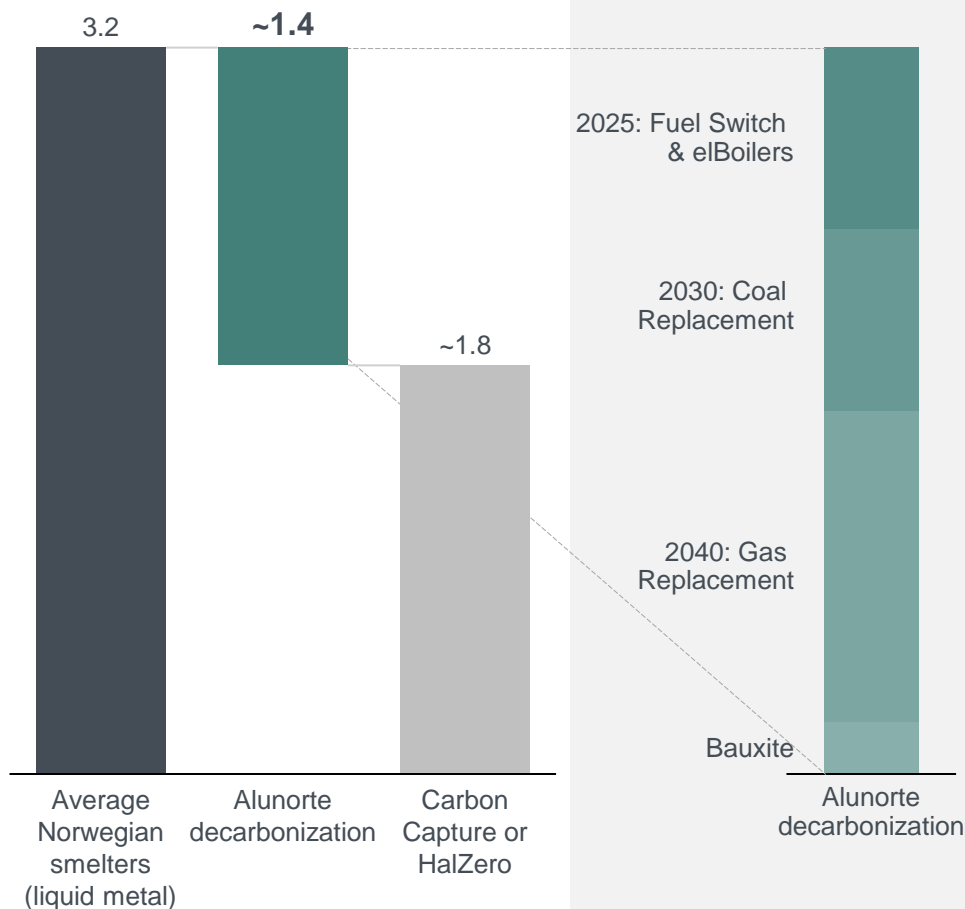
CO<sub>2</sub>e per ton of Alumina (scope 1 and 2)  
CRU Global Alumina 2022



# Decarbonization ambition: Significant progress on decarbonization of Alunorte alumina

Tonnes CO<sub>2</sub>e / tonne aluminium  
Scope 1 and 2 emissions

Towards lowest CO<sub>2</sub>e per tonne alumina relative to peers by 2025



## Fuel switch project

- Replacing heavy fuel oil with natural gas
- Reducing annual CO<sub>2</sub>e emissions by 700,000 tonnes
- Cost BRL ~1.3 billion (NOK ~2 billion)
- First gas consumption in Q2 2023 and all oil assets converted to gas by 1H 2024

## Electrical boiler – Hydro Rein supports decarbonization

- First electrical boilers in operation in first half 2022
- Two more electrical boilers in operation by 2024
- 2 times 20-year PPA's were signed with Hydro Rein (255 MW) to power boilers, from the Mendubim and Feijao projects and providing competitive terms for Alunorte

## Coal replacement by 2030

- Coal only as a secondary energy source for security of supply by 2025
- Multiple paths to replace coal and targeting stand-alone business cases
- Ambition to fully replace coal by 2030

## Gas replacement by 2040

- Gas will be replaced in Calcination by either Hydrogen or Renewable energy

## Bauxite

- Replacement of diesel with biofuel and electric equipment



# Aluminium Metal

## Three technology paths to net-zero

Capital Markets Day 2022

Eivind Kallevik

EVP Aluminium Metal



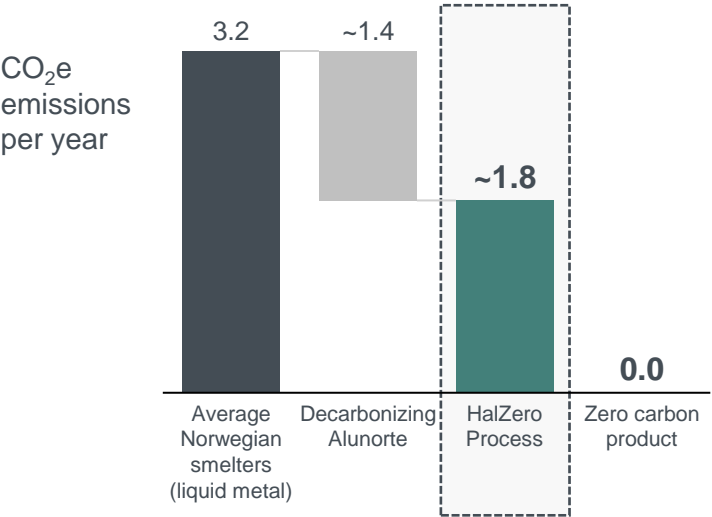
# Decarbonization ambition: Three paths to net-zero



Clear technology roadmap to deliver industrial volumes of zero carbon aluminium by 2030

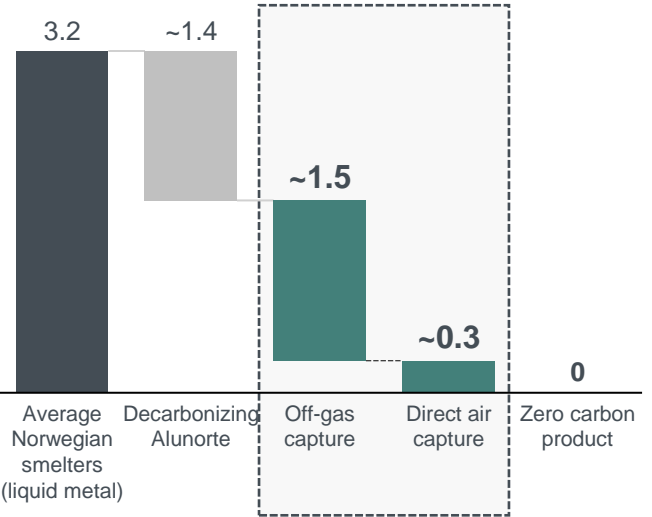
## HalZero process

New process technology for decarbonizing new capacity



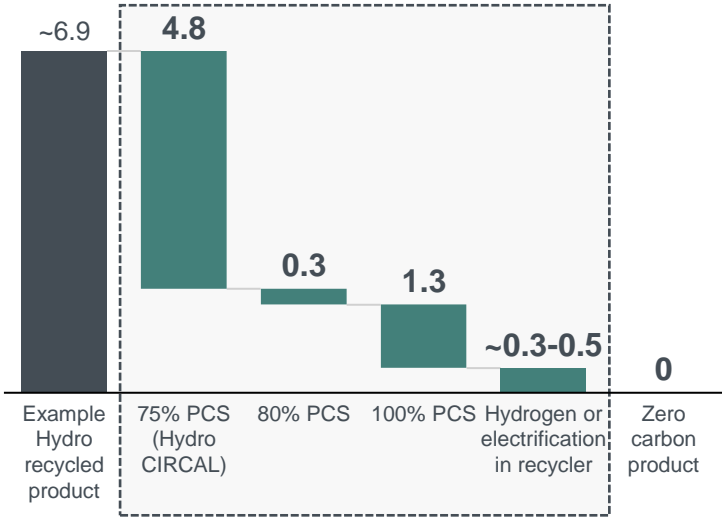
## Carbon capture and storage

Technologies for decarbonizing existing smelters



## Recycling and Casting

Technologies for more PCS-use and casthouse decarbonization



# HalZero: Technology ready for testing at scale



On track to deliver first metal by 2025 and industrial scale pilot volumes by 2030

Promising technology basis confirmed



Funding received

Norwegian Research Council and Gassnova



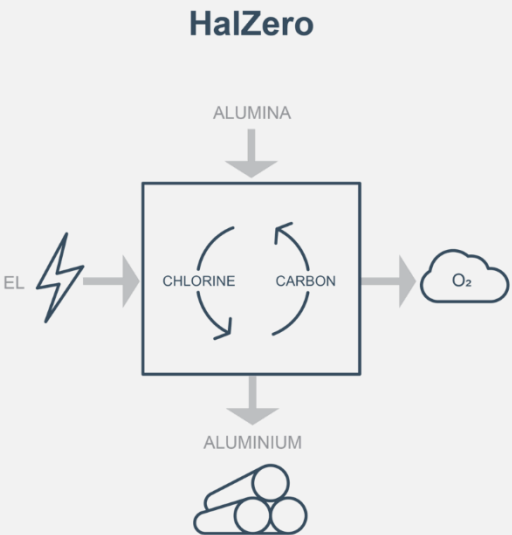
Test site chosen

Hydro Porsgrunn Technology Center

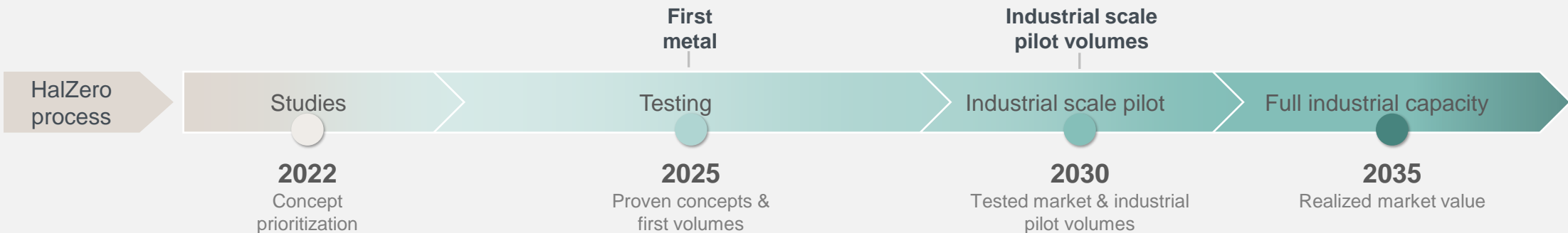


Final engineering of test facility close to completion

Construction planned to start in 2023, pending soft funding



## Timeline



# Carbon capture and storage: First test completed



On track to deliver first metal by 2025 and industrial scale pilot volumes by 2030

Successfully completed first test at the Sunndal smelter



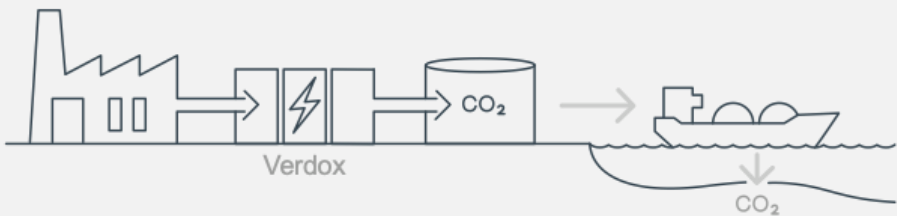
Further testing in progress for 2023

Second test planned for early 2023, received funding from Gassnova

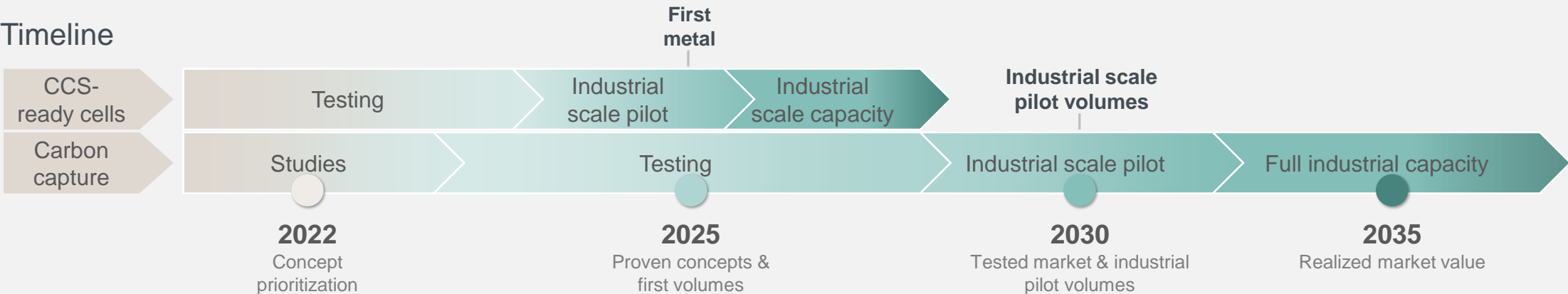
Location of industrial scale pilot to be decided

Verdorex DAC capabilities maturing towards industrialization

Hydro in dialogue with potential storage providers



## Timeline



# Recycling: The fastest route to full decarbonization



Advanced sorting technology ready. Progress on casthouse decarbonization technology

## Advanced sorting technology for more PCS use

HySort technology ready for industrialization

Enabling further growth in Hydro CIRCAL and scaling production of 100R



## Casthouse decarbonization technology to reach net-zero

Program to test viable technologies in progress

Green hydrogen test pilot by Hydro Havrand to be built at Høyanger recycling plant





# Hydro Høyanger: Planned pilot for decarbonizing post consumer scrap

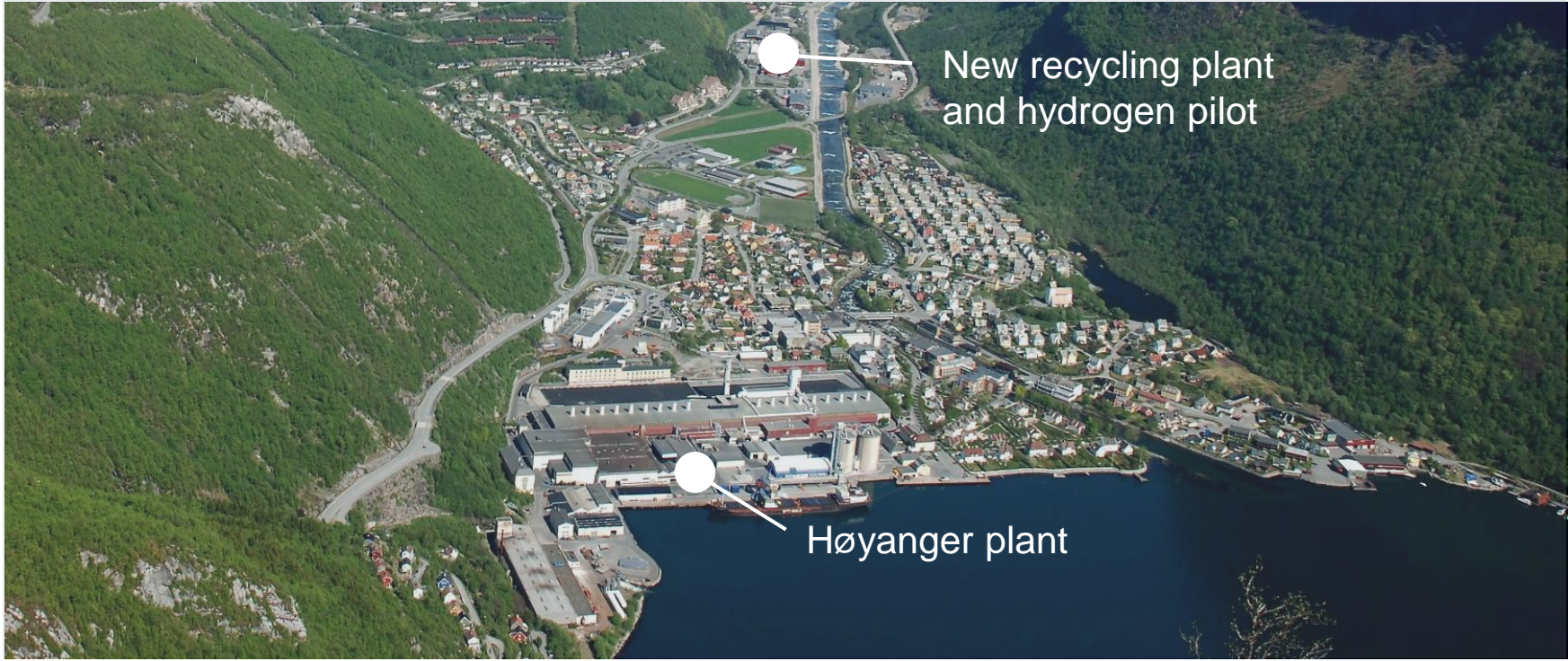


Pilot:

5 MW

Phase 2:

>13MW



In production:  
2024

Fuel switch process	Recycler melting furnace
Fuel switch type	LNG to green H2
Technology	PEM

Pilot:

4000 tonnes of CO<sub>2</sub>e

Saves

Phase 2:

> 8000 tonnes of CO<sub>2</sub>e annually



# Mercedes-Benz partners with Hydro on road to zero

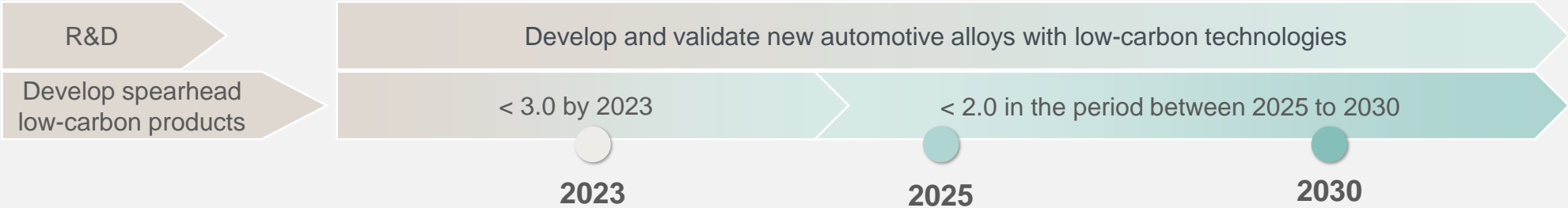


Hydro is shaping the market for low and zero carbon aluminium through strategic partnerships

Decarbonizing Mercedes-Benz' value chain through strategic partnership

Collaborate from 2023 to 2030 on a common roadmap with the target to find low-carbon aluminium solutions suitable for automotive applications.

Hydro will support Mercedes-Benz' strategy to reduce the footprint of all aluminium used in their cars with 50%





# Recycling Growth and profitability

Capital Markets Day 2022

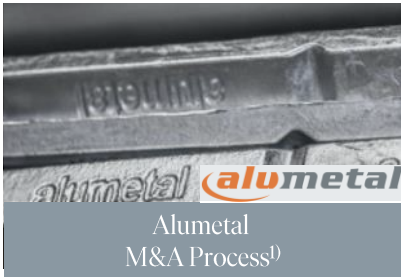
Eivind Kallevik

EVP Aluminium Metal

# Delivering on recycling strategy at high speed, increasing ambition

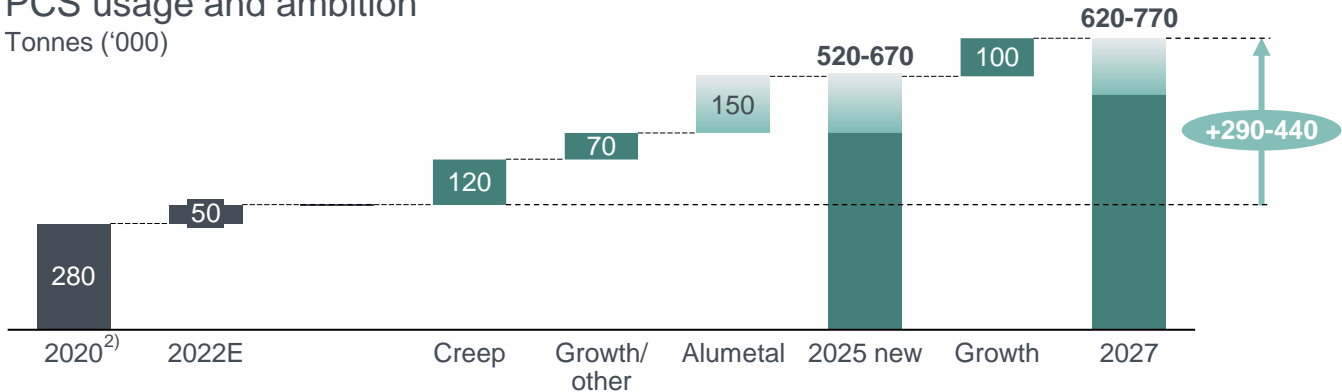


## Key investment decisions made



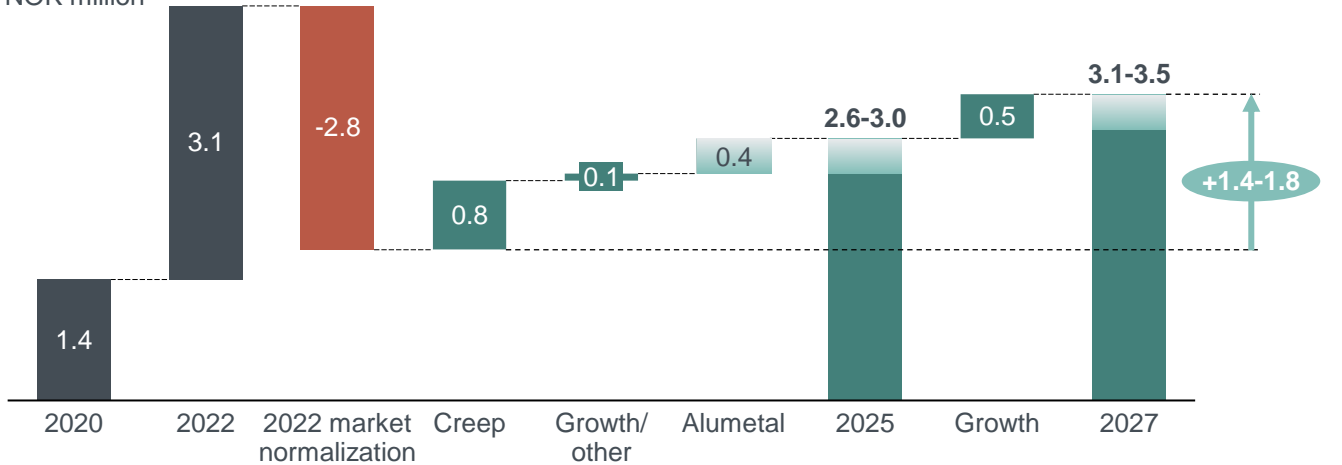
## PCS usage and ambition

Tonnes ('000)



## EBITDA uplift

NOK million

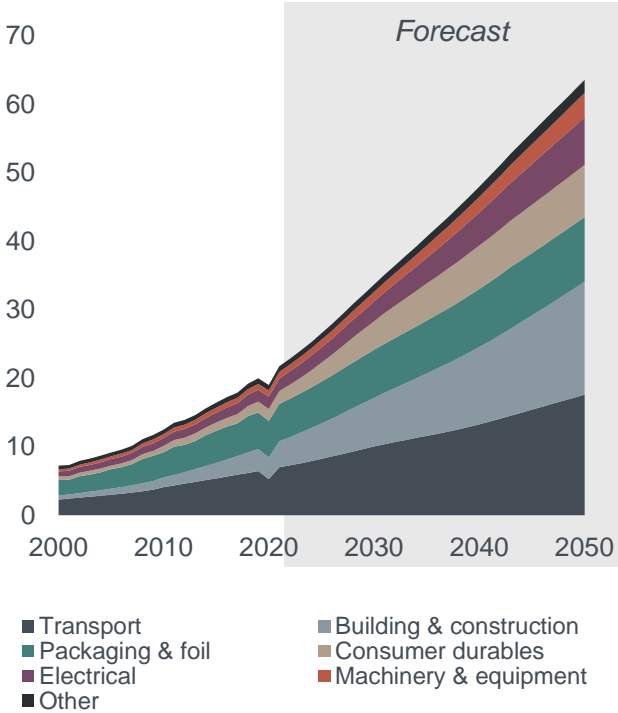


1) Currently undergoing Phase II merger control review by the European Commission  
2) Baseline 2020 PCS volume reduced from 290 to 280 kt due to reclassification.

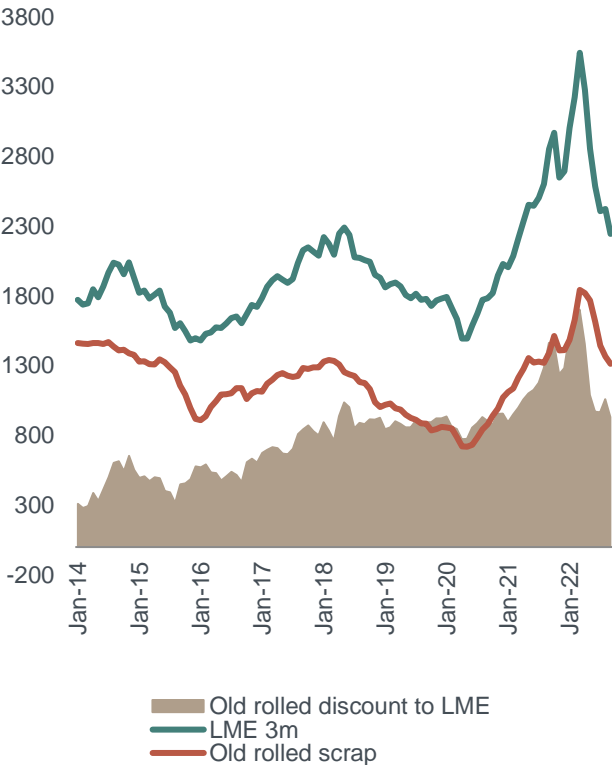
# Recycling: A profitable business case strengthening the sustainability positioning of Hydro and industry



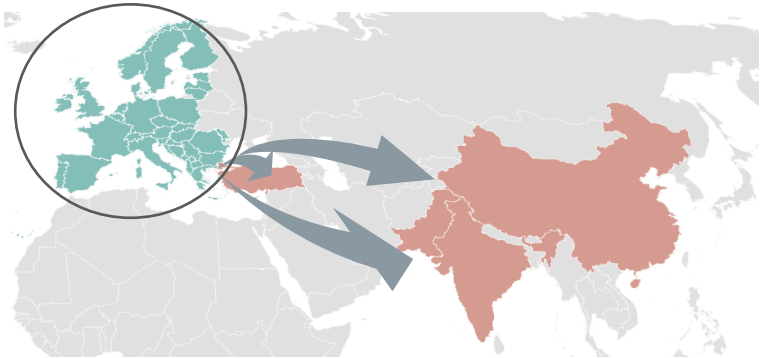
Global estimated recovery from post-consumer scrap collected increases  
Million tons



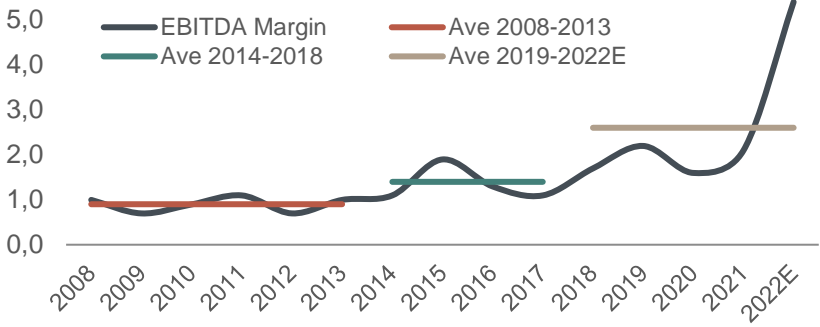
Price spread LME vs. complex post-consumer scrap increased  
USD/tonne



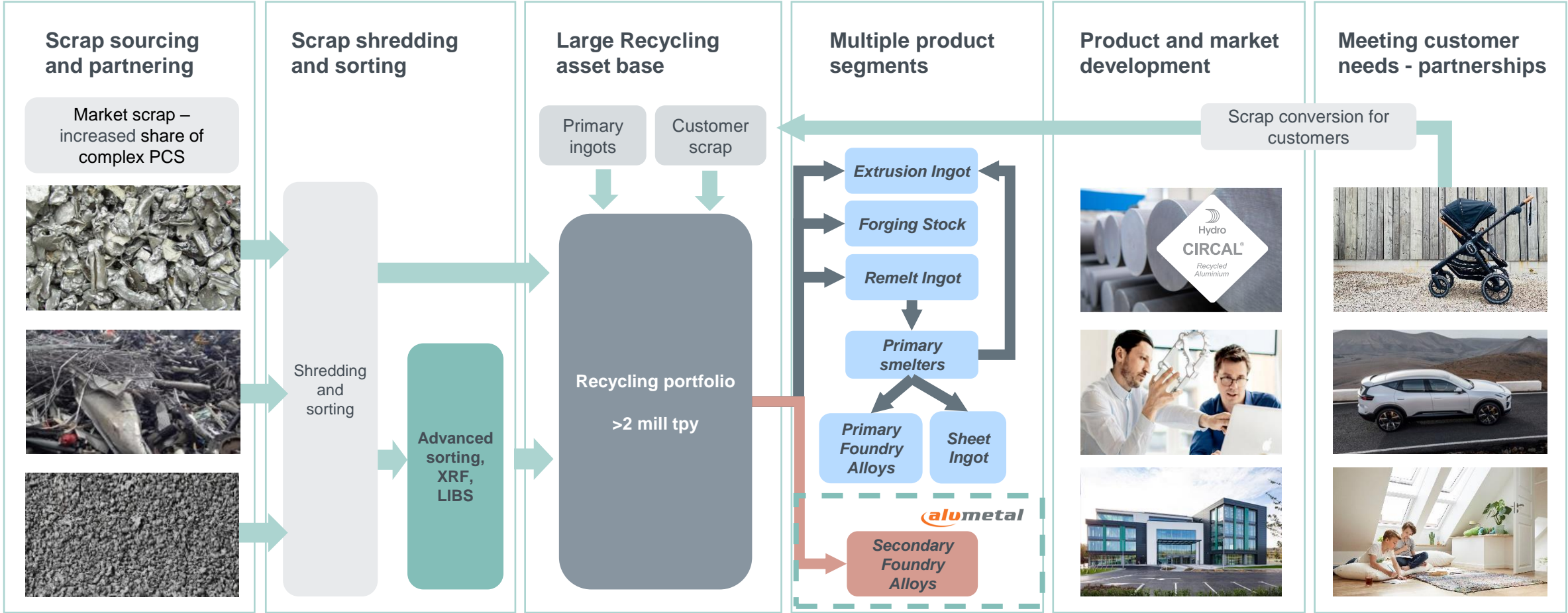
Large scrap volumes leaving Europe, ~1 million tons – an untapped potential



AM Recycling indexed EBITDA margin  
USD/tonne (2008 set at 1)



# Growing in recycling by ‘digging deeper in the scrap pile’ is not straight forward – strong focus throughout value chain required





# Hydro well positioned in recycling



Utilizing our combined competencies, strong asset base, market position and value chain



Scrap sourcing flexibility



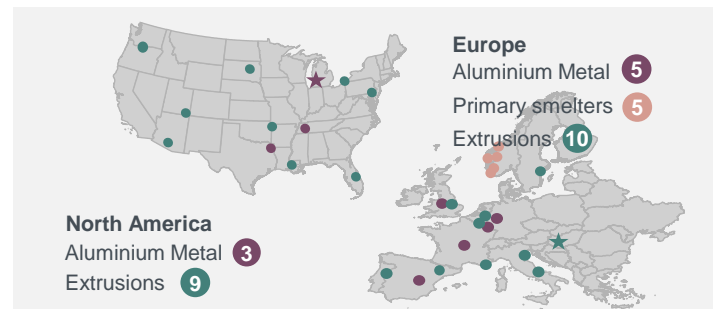
Integrated value chain



Innovative product portfolio



Developing advanced sorting



Large & growing asset base



Partnering with customers



# Extrusions

## Growth and profitability

Capital Markets Day 2022

Paul Warton

EVP Extrusions

# Attractive value add Systems and Precision Tubing business in addition to strong EU & US extrusion positions



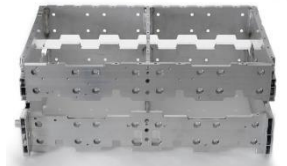
Building Systems and Precision Tubing offering unique value added and specialty solutions growth opportunities

Business Unit

Attractive growth and business development opportunities

## Extrusion Europe

- Increased penetration in E-mobility supported by substitution
- Recycling capacity to facilitate increased PCS usage



## Extrusion North America

- Grow in automotive and commercial transport
- Shape the market for greener products in North America



## Building Systems

- Leverage CIRCAL, increase market share driven by sustainability and brand offerings
- Leverage strong European product and digital platforms in new geographies



## Precision Tubing

- Substitution away from copper towards aluminium in HVAC&R
- Higher penetration of aluminium in E-mobility



Aluminium battery cable  
Significant advantages in material, weight and cost

# Strategic initiatives continue to transform Extrusions into a more robust and customer driven business



More competitive cost base, stronger customer interaction, targeted capacity expansion and sustainability agenda provide for business resilience going forward

## Key Initiatives

## Key actions

### Portfolio restructuring

- **Strong focus on selected segments where Extrusions has competitive advantage**
- Exited non-attractive operations and segments

### Cost reductions

- **Several cost reduction initiatives**, including procurement and operational improvements through Hydro Extrusions Business System (EBS)

### Customer partnerships and commercial focus

- **Increased customer interaction through value added activities and fabrication**
- Focus on **customer solutions** and service to ensure value creation, long-term interaction and loyalty

### Capacity growth in attractive regions and segments

- **Increase in large press, state-of-the-art technology capacity**
- Focus on growth in attractive geographies

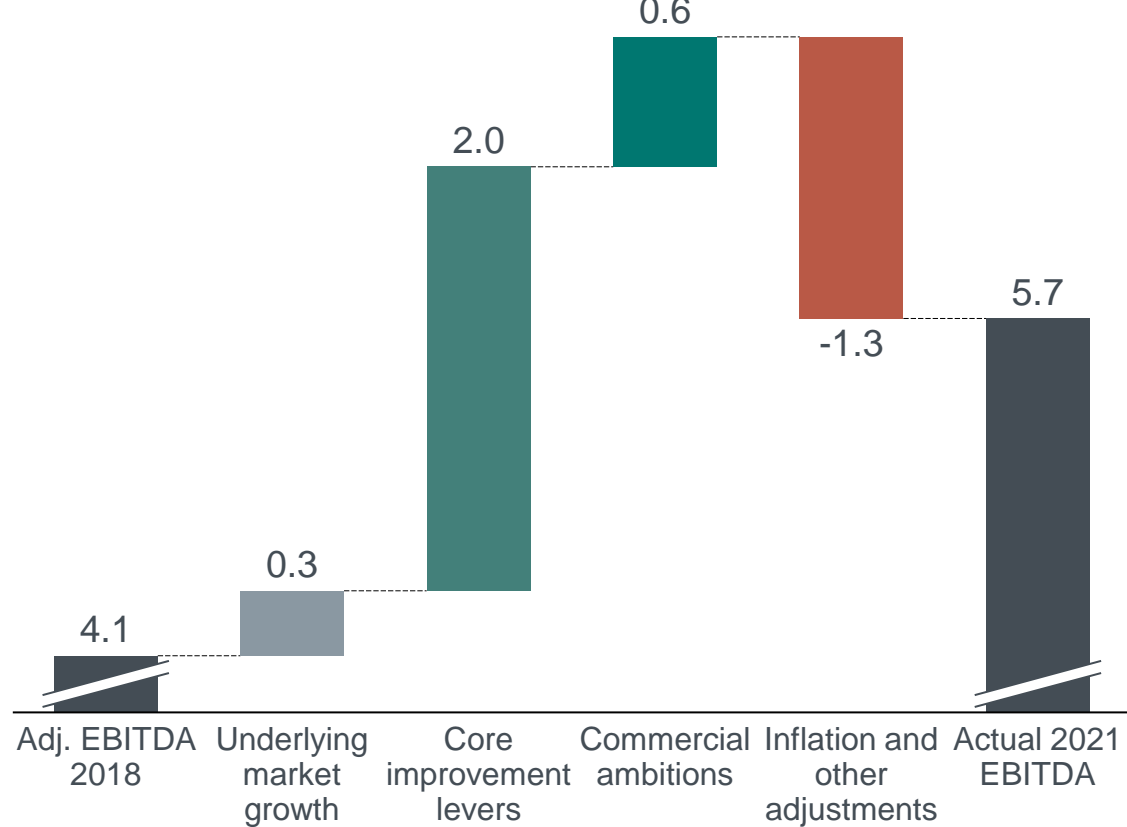
### Sustainability platform

- Established competitive advantage in building systems area, **leveraging Hydro CIRCAL**
- **Growth and enhanced position in recycling** capacity to optimize value, scrap flows and PCS

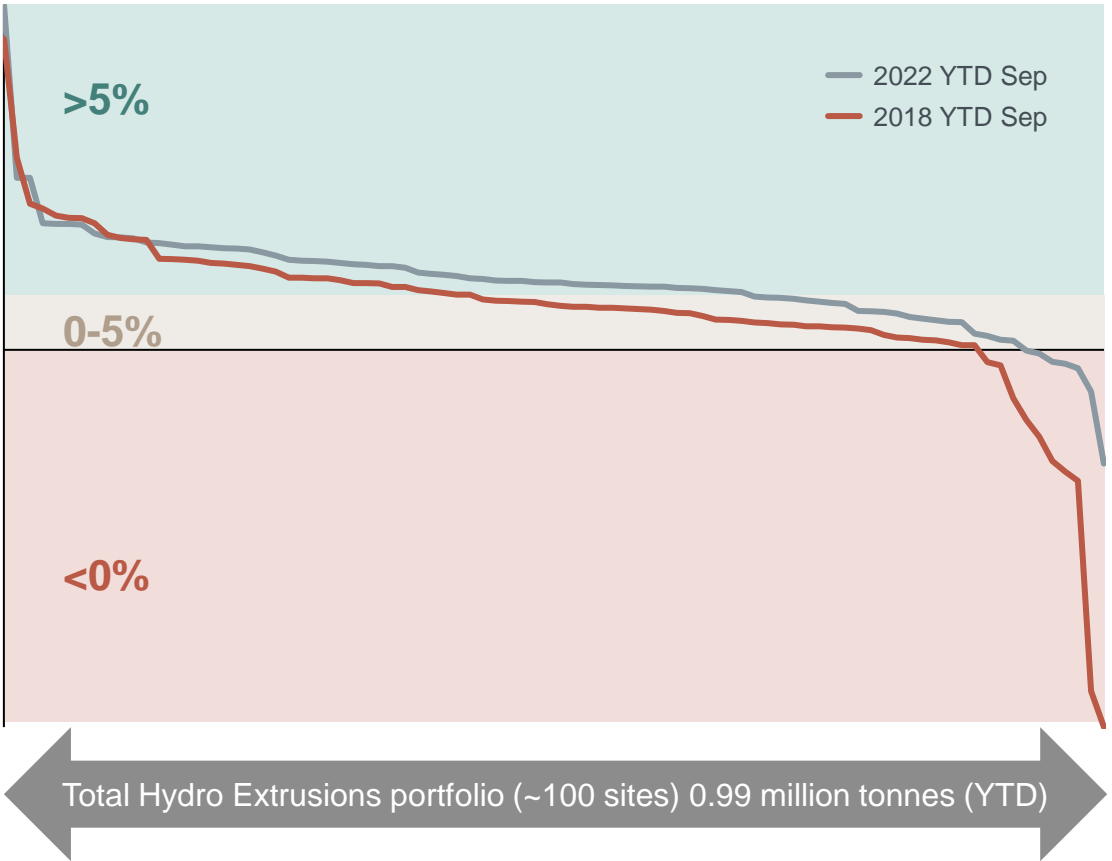
# Extrusions has structurally improved EBITDA since 2018 mainly through cost improvements and restructuring



Extrusions EBITDA  
NOK billions



EBITDA-margin per unit in Hydro Extrusion (%)

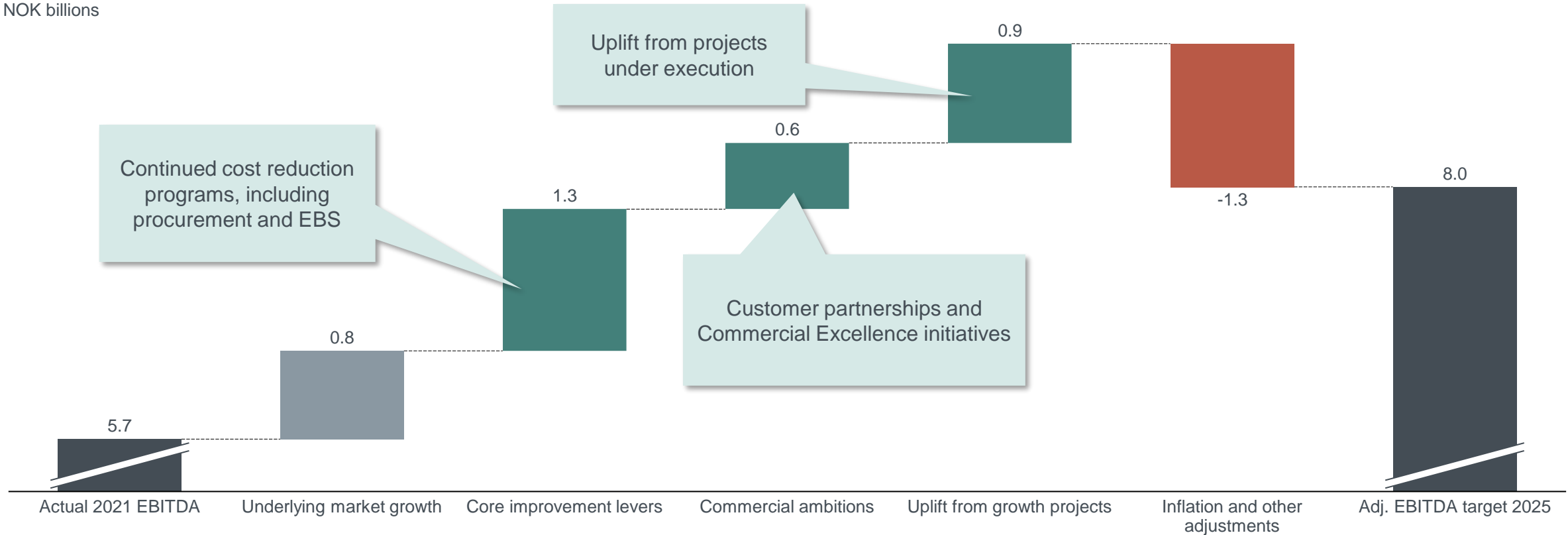




# Lifting Extrusions EBITDA towards 2025 through cost improvements and leveraging growth projects



Extrusions EBITDA  
NOK billions



# Critical growth projects in execution, further projects being matured to enable profitable growth



Further strengthening flagship plants in the portfolio, leveraging key trends

## Key trends



- Sustainable products with low-carbon footprint
- Recyclability and keeping materials “in the loop”
- Greener energy sourcing



- E-mobility
- Light-weighting of vehicles



- Customer collaboration: high level of service, tailored solutions, short lead times
- Proximity as clear competitive advantage

## Project under execution

Hungary recycling

The Dalles upgrade

Navarra recycling

Sjunnen recycling



PT China press

PE coating line



Nenzing press

Cressona press



## Project pipeline

Cressona Bay-Zero  
(recycling upgrade)



Automotive presses  
in Europe:  
• Tønder  
• Hungary



Rackwitz press

City of Industry press



# Strengthening share in attractive German market by acquiring Hueck Systems and Extrusions

Synergies driven business case with clear upside for customer offering

## Strong strategic rationale

- German family owned extrusion and building systems business located close to Düsseldorf
- Provider of aluminium window, door, and façade systems to the European market
- ~500 employees
- Integrated casthouse operation with 50,000 tonnes annual capacity
- Two extrusion presses (12- and 8-inch) with 25,000 tonnes total capacity
- Reported EBITDA of EUR 12.8 million in 2021
- Enterprise value of EUR 60.3 million
- Subject to regulatory approval, expected closing during Q1 2023

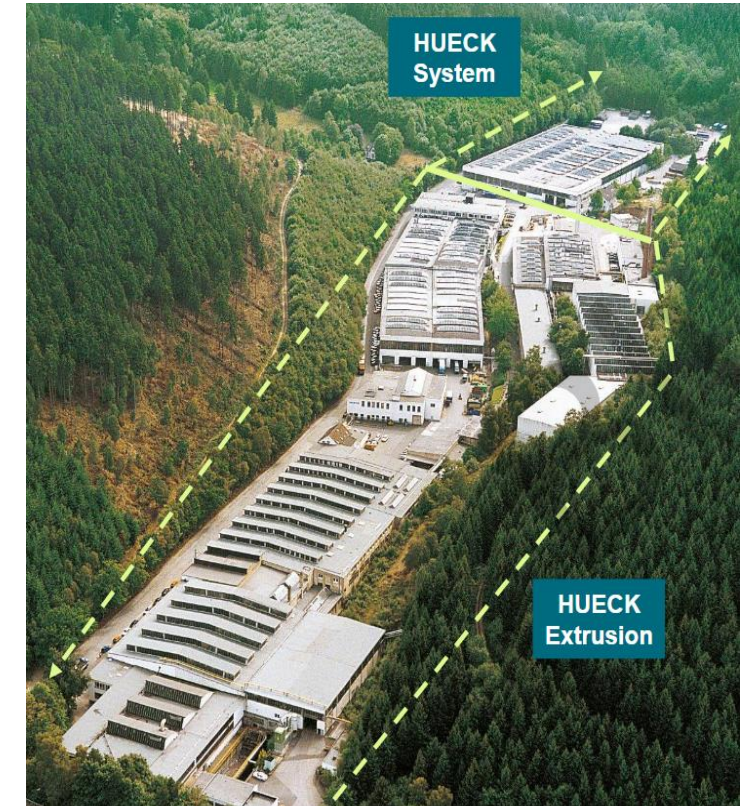
Attractive platform for growing Hydro's moderate market share in Germany

Complementary geographical footprint of production facilities

Matching product offering in building systems business

Access to 12-inch press capabilities and closed loop recycling to serve high-margin segments

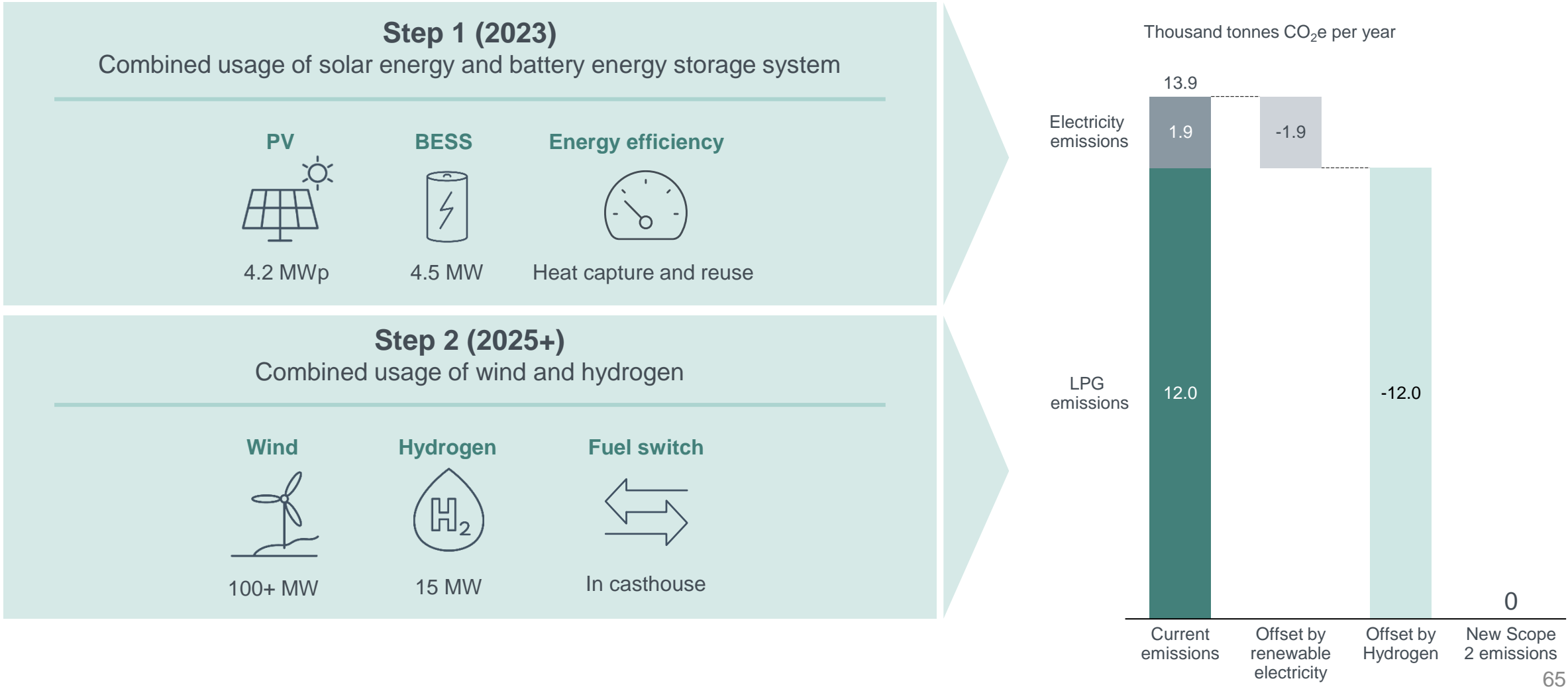
Gaining recycling capacity in attractive location, close to scrap shredding facility



# Greener Sweden: Pilot project in two steps towards net-zero



Extrusion Sweden, Hydro Havrand and Hydro Rein to produce a platform for net-zero carbon aluminium in two steps





# Hydro CIRCAL 100R

Innovationsbogen – Augsburg, Germany



**Owner:** Walter AG  
**Fabricator:** SCHINDLER FENSTER + FASSADEN GMBH  
**Architect:** Hadi Teherani  
**Delivery date:** Q1/2023

  
Hydro  
**CIRCAL®**  
Recycled  
Aluminium

## Decarbonize the building market with Hydro CIRCAL 100R

- **Innovationsbogen** is the first development of the Augsburg Innovation park. A futuristic office building, designed to match the needs of modern companies.
- Sustainability, efficiency and flexibility are at the heart of the project and using Hydro CIRCAL 100R was a great opportunity for both the owner and the architect
- In total, Hydro Building Systems will deliver **100 tonnes of Hydro CIRCAL 100R**, which represents a reduction of more than 600 tonnes of CO<sub>2e</sub>

ALUMINIUM  
CIRCAL 100R

**50**  
tons of CO<sub>2e</sub>

ALUMINIUM PRODUCED  
AT EUROPE AVERAGE

**670**  
tons of CO<sub>2e</sub>

**-95%**



# Preferred partner to net-zero aluminium

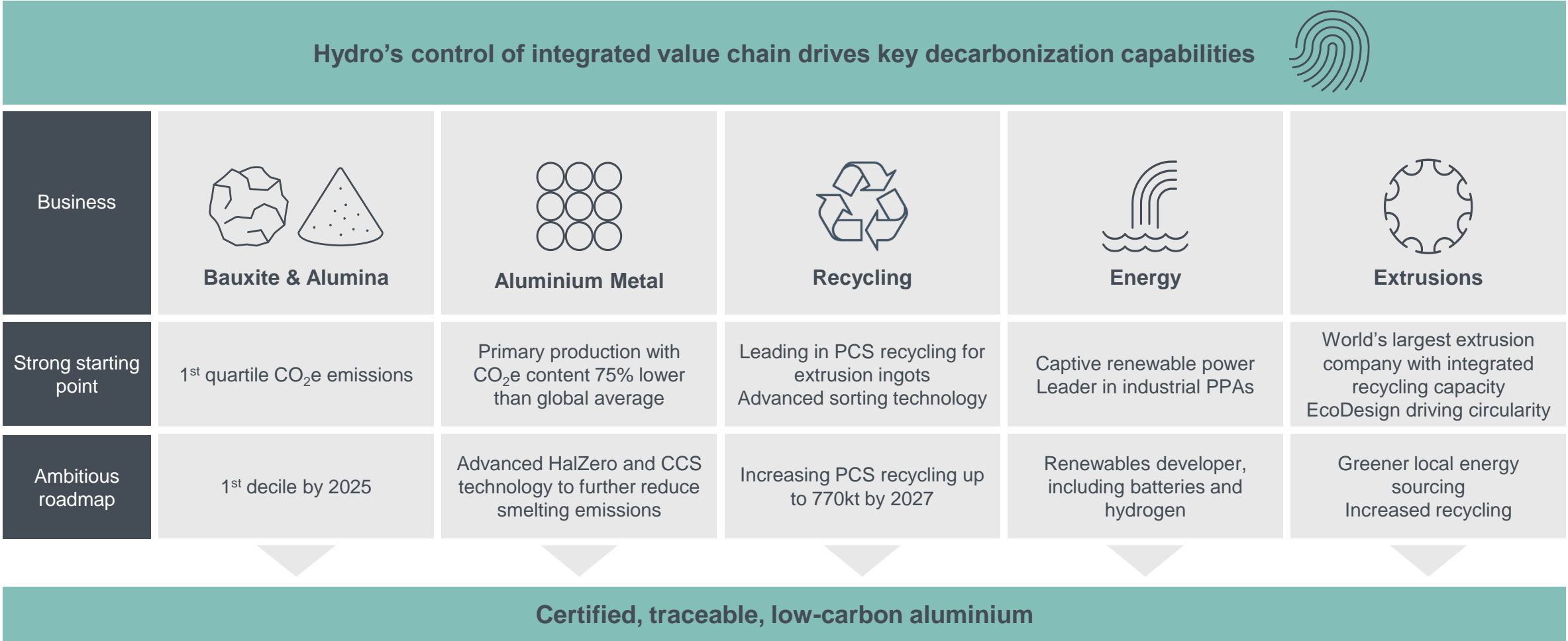
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Trond Olaf Christophersen

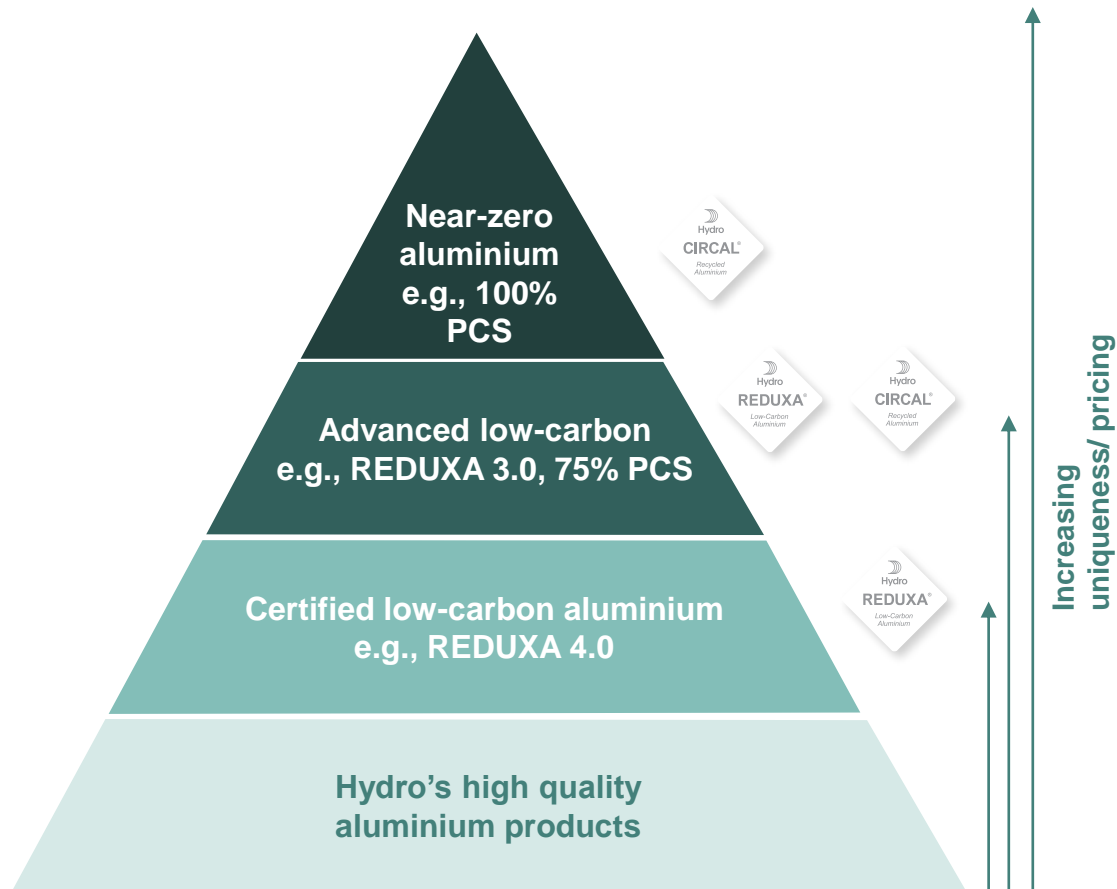
EVP Corporate Development



# Hydro uniquely positioned in the low-carbon aluminium market



# Hydro offers the leading low-carbon product portfolio



## Leading low-carbon aluminium offering and capabilities

- Strong **scale position** within recycling and low carbon aluminium
- Ambitious, yet concrete, **decarbonization roadmap** across entire value chain
- Delivering pilot volumes of **ultra low carbon and 100% PCS** to frontrunner partners
- Differentiated suite of low-carbon products enables **adaptable pathway** to net-zero - unique to Hydro

Scale with  
high ambition  
players



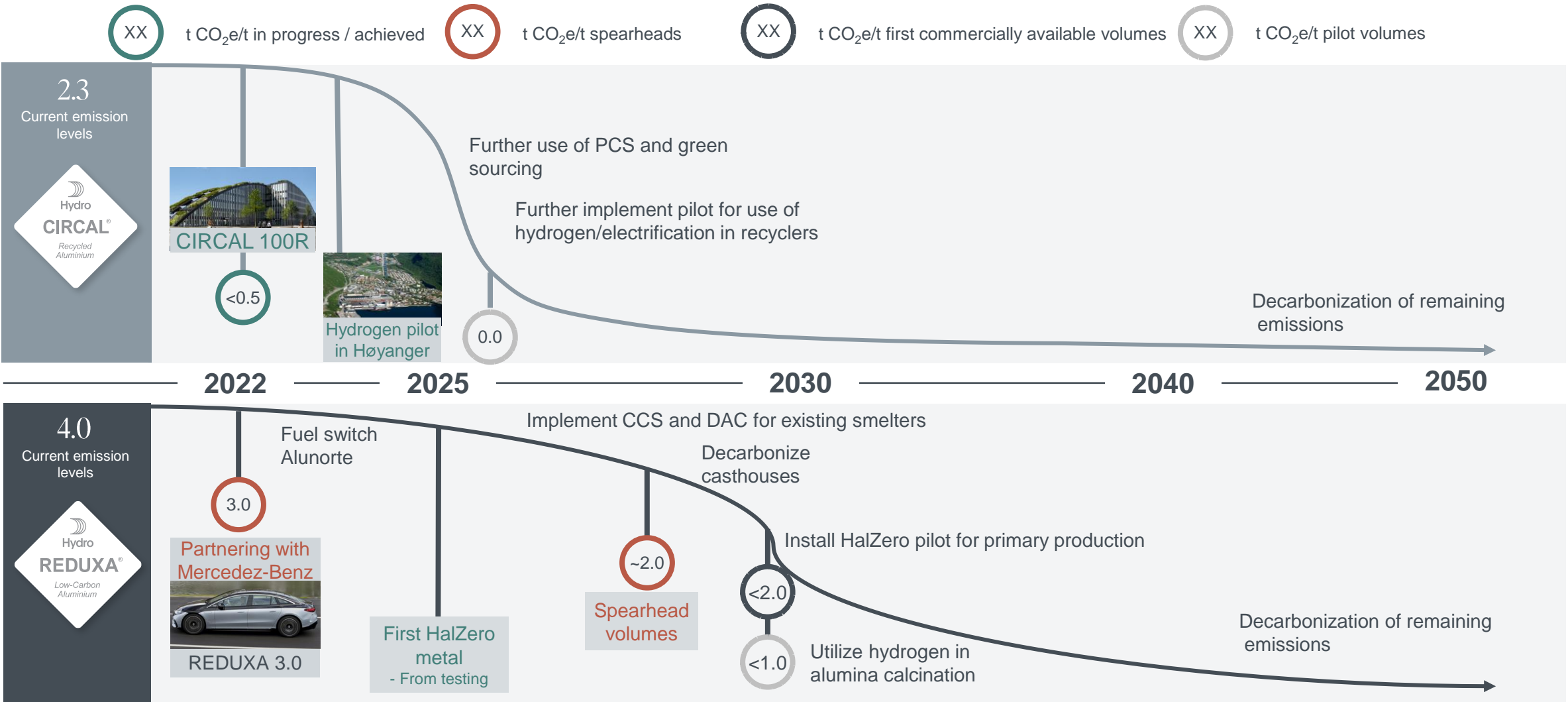
Unique pilot  
volumes  
for front runners



# Ambitious product roadmap driving industry frontiers



Capitalize on market demand through circularity while decarbonizing primary value chain



# Hydro a preferred partner on journey to net-zero



Utilizing integrated value chain and trusted partner position to deliver decarbonization to industry front runners

Unlocking **commercial and technological** solutions

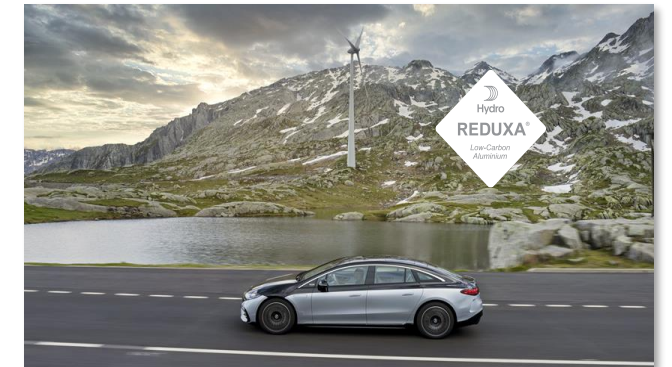
Enabling **decarbonization journey** transition

Driving **demand**

Access to **full suite of greener aluminium** solutions

Support in making the **right decarbonization steps**

Hydro as **R&D partner**



Lifting profitability, driving sustainability





# Increasing robustness of cash flows and returns

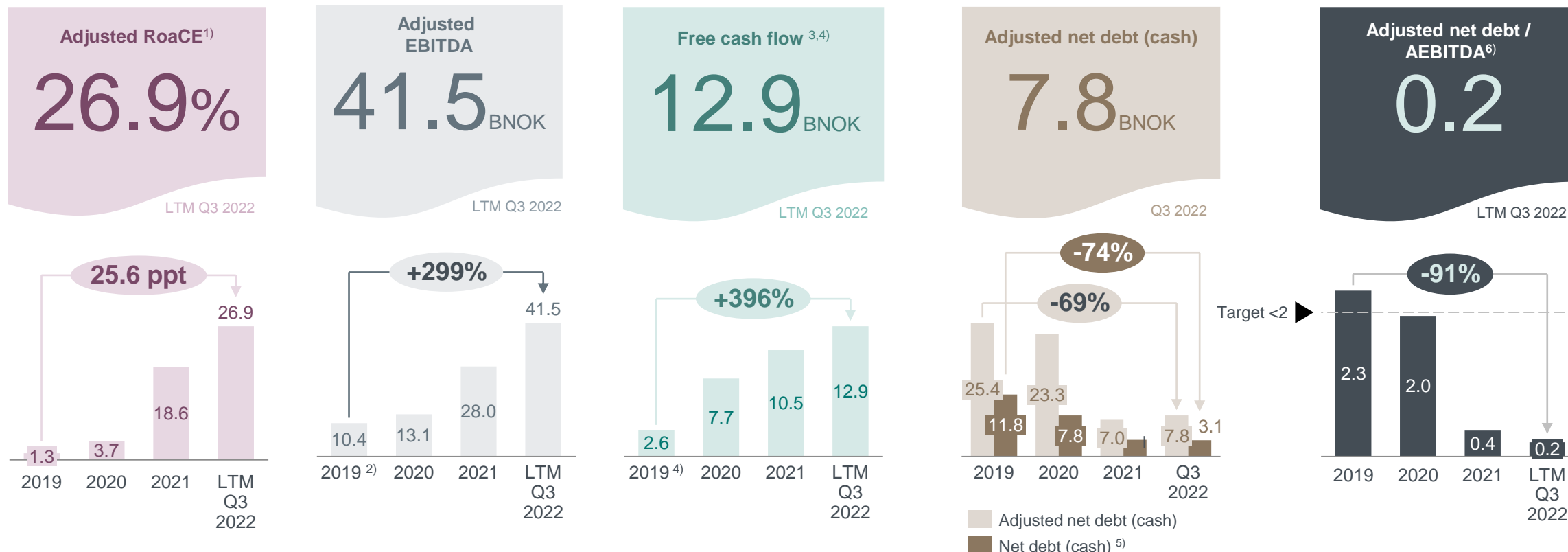
Capital Markets Day 2022

Pål Kildemo

EVP and CFO



# A record year, with a solid balance sheet to meet uncertainty and pursue opportunities



1) RoaCE figures as reported, where rolling is excluded from 2021.

2) Adjusted EBITDA figures as reported and excludes Rolling, except for 2019 which is estimated to exclude Rolling

3) Free cash flow defined as net cash provided by operating activities plus net cash used in investing activities less purchases of short-term investments, less process from sales of short-term investments

4) Figures are as reported and excludes Rolling, except for 2019 which is estimated to exclude Rolling

5) Net debt figures are as reported. Net debt changed definition from and including 2020. 2019 as reported with old definition

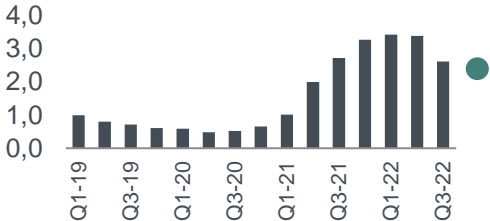
6) Adjusted EBITDA from 2019-2020 includes Rolling (as reported), no rolling in 2021

# Uncertain outlook for 2023

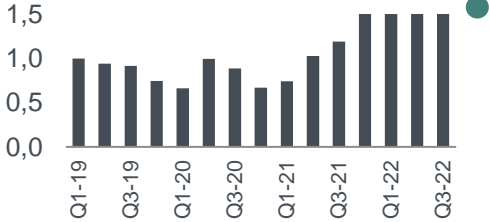
However, current market prices indicate still healthy financials

## Revenue and cost drivers

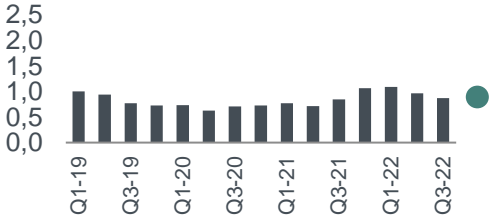
El Billet premium (indexed)



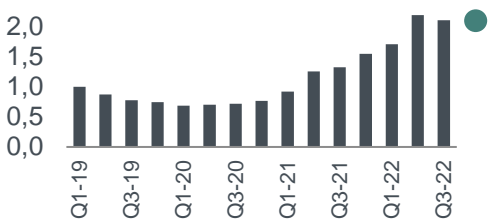
Caustic soda (indexed)



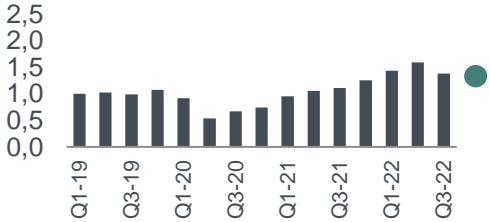
Alumina PAX index (indexed)



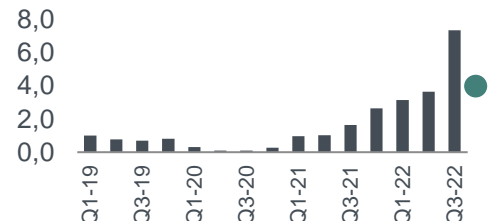
Petroleum coke FOB USG (indexed)



Fuel oil A1 (indexed)



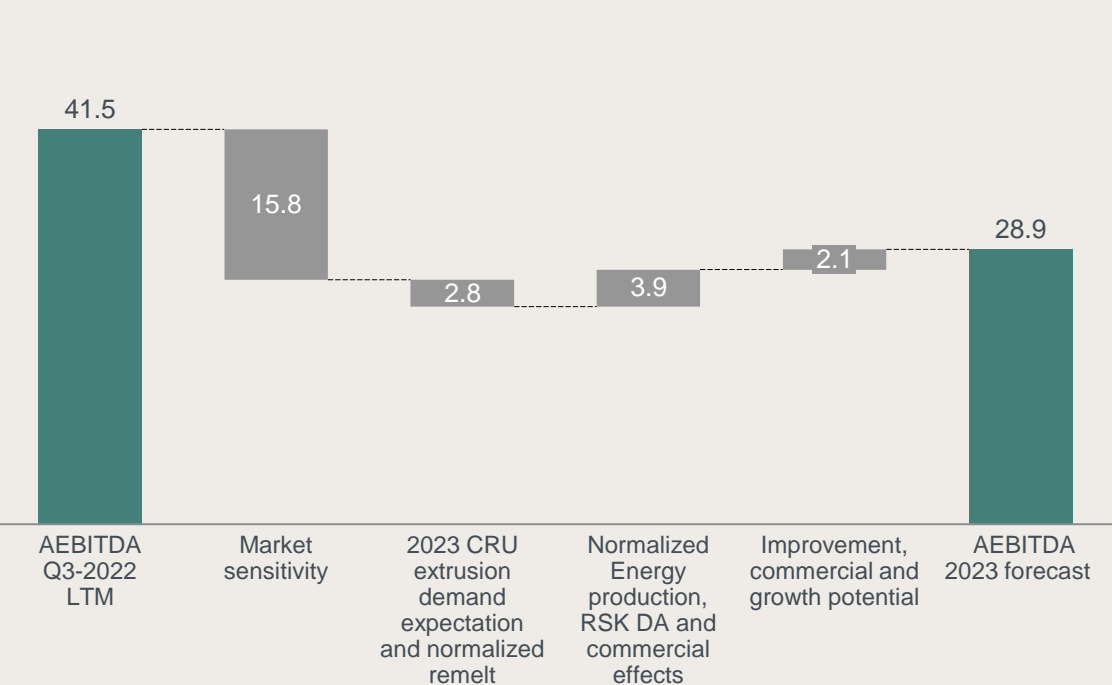
NO2 spot price (indexed)



● Indication of current market prices

Source: Thomson Reuters, PACE, IHS Markit, Platts, ANP, CRU, Nord Pool

## AEBITDA sensitivity 2023 NOK billion



# Managing short-term risk and long-term opportunities

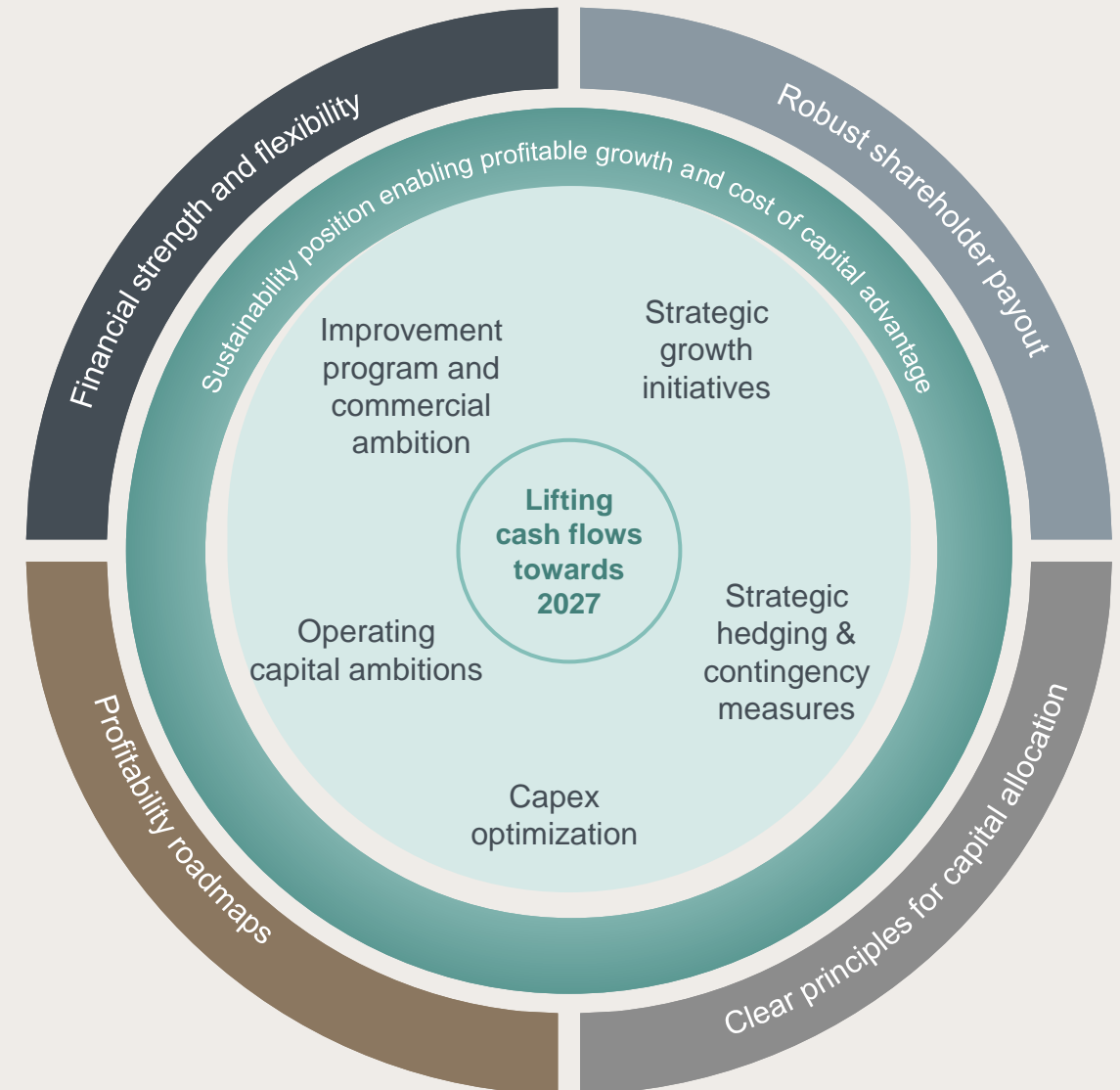
## Short term improvement and mitigation

- Increasing improvement program target for 2025 and extending program to 2027
- Setting ambitious operating capital ambitions for 2023
- Contingency measures in place
- Integrated aluminium margin hedge in place for 2023, 2024, and partly 2025

## Long-term opportunities and measures

- Clear principles for capital allocation
- Continue to deliver on strategic capex roadmap
- Sustainability driving cost of capital advantage
- Clear profitability roadmaps
- Robust shareholder payout

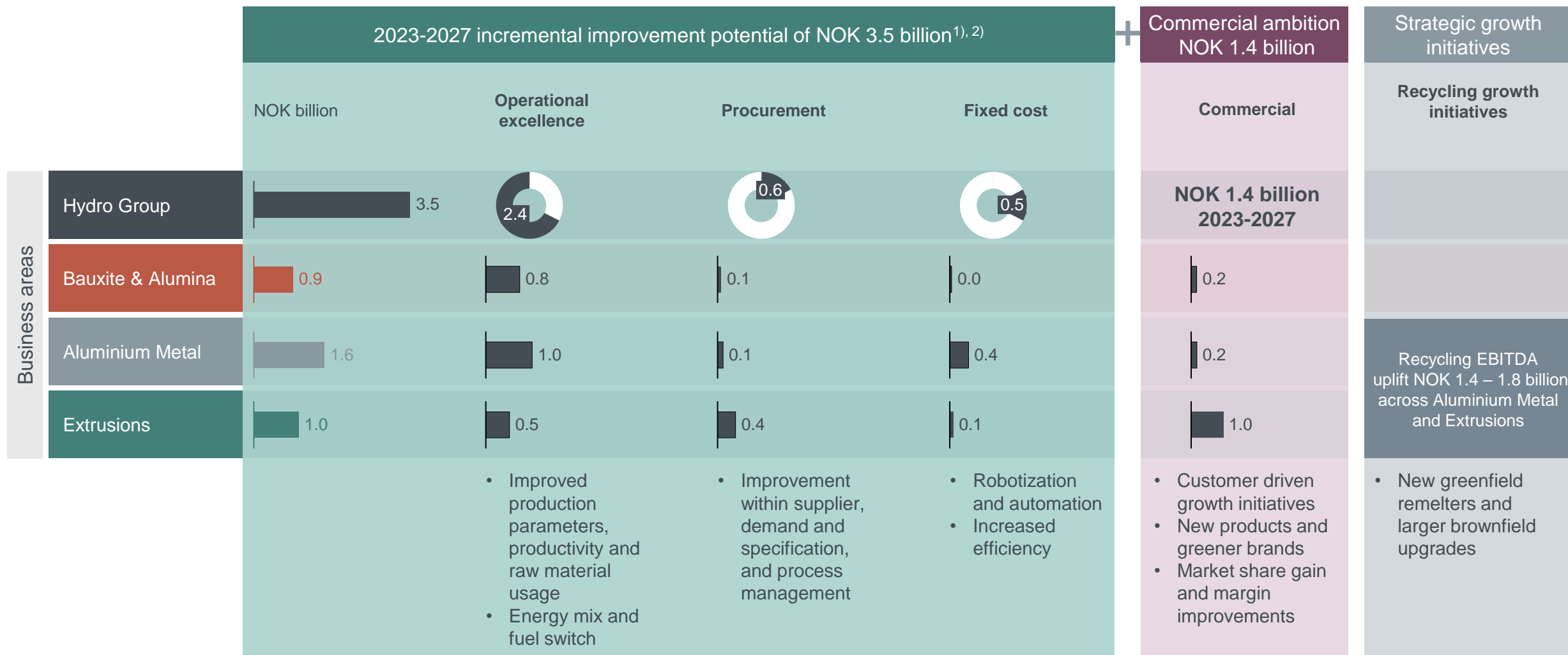
Solid framework for lifting returns and cash flow and managing uncertainty



# NOK 4.9 billion additional improvements to be delivered



Targeting NOK 14.0 billion in improvements by 2027

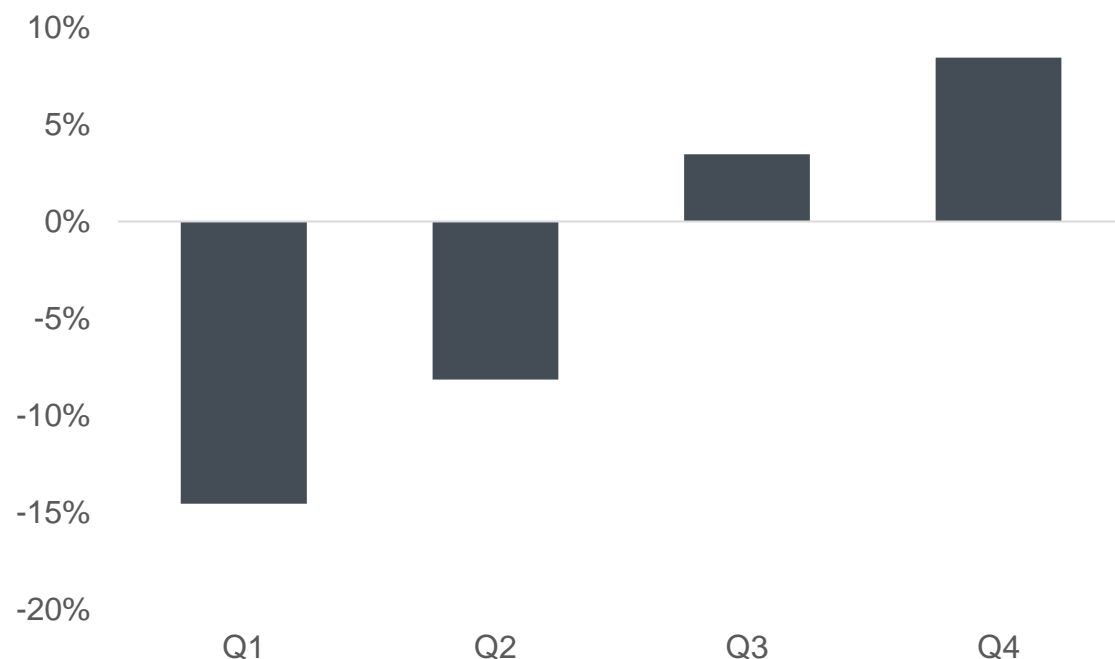


1) 2018 baseline on accumulated improvements until 2021, 2021 baseline from 2022

2) ~1.5-2 BNOK in annual average CAPEX to meet remaining improvement and commercial ambitions

# Temporary and medium-term contingency measures

European primary demand 2023 (% change Y/Y)



Source: CRU

## Market demand adjustments

### Aluminium Metal

- Electrolysis production curtailed by ~100kt, aim at 110 -130kt (Norwegian smelters)
- Additional primary casthouse production reduced by ~50kt
- Recycling production reduced by ~ 45 kt
- Volumes shifted between product segments
- Further measures continuously evaluated

### Extrusions

- European recycling production reduced by ~ 45kt
- North America, recycling production reduced by 35kt
- Continuous adaption of capacity through reduced number of shifts

## Short- and medium-term hedging

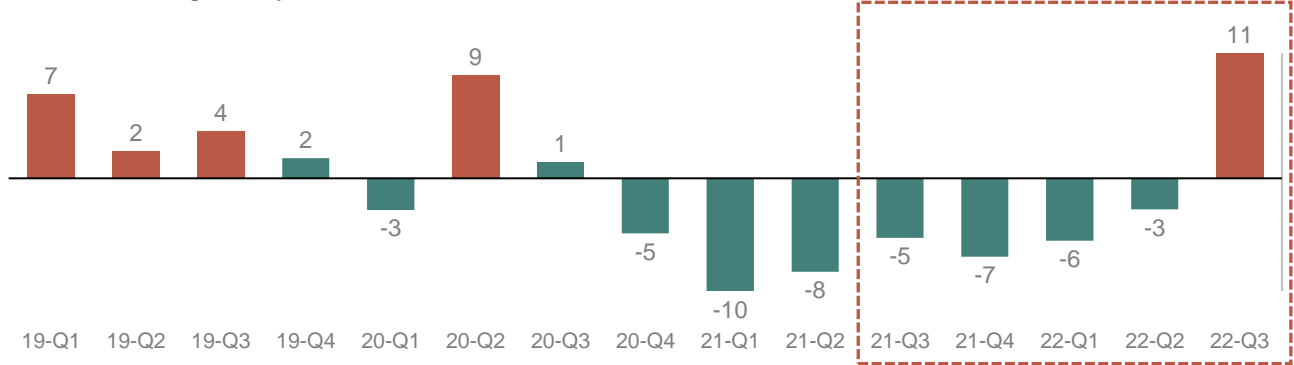
- 2023 gas and power hedges in place for majority of exposure in Metal Markets and parts of exposure in Extrusions
- Integrated margin hedge in place for 2023, 2024 and parts of 2025
- USD/BRL hedges in place for Alunorte and Albras
- Smaller volumes hedged in Energy
  - Part of power sales from Aluminium Metal and Energy net long position



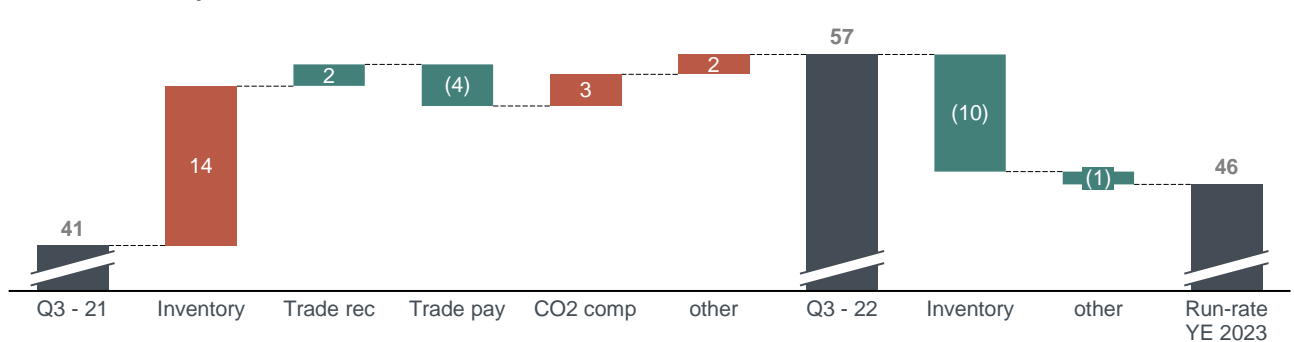
# NOK ~8 billion NOC release targeted Q4 2022/ FY2023

## Net Operating Capital Days<sup>1)</sup>

Variance +/- avg 46 days



## YoY development



1) NOC-days calculated as: (average of opening balance and closing balance NOC book value for the quarter / adjusted revenue during the quarter) \* number of days in quarter

Net operating capital days and net operating capital are estimates excluding Rolling in 2019-2020

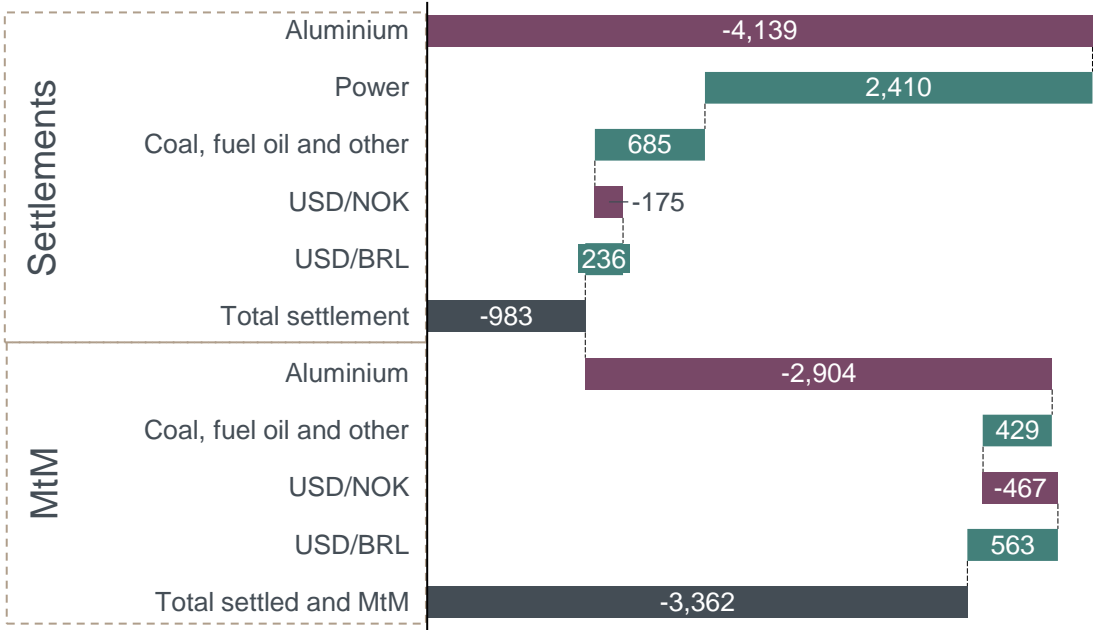
2) Sensitive to price and demand assumptions

## Spike driven by inventory and CO2 compensation

- Strong demand and raw material supply challenges reduce relative inventory levels in 2021
- Safety stock- and seasonality build 1H 2022 offset by high revenues
- Q3 2022 downturn caused demand to fall faster than production, driving increase in relative and nominal inventory levels
- Q3 2022 increase in CO<sub>2</sub> compensation receivables
- Transition period in 2023 with expected average of ~ 50 NOC days and year end run rate of 46 in line with historical average
- Expected NOC cash release of NOK ~8 billion<sup>2)</sup> by year end 2023

# Strategic hedges limits effects of market decline

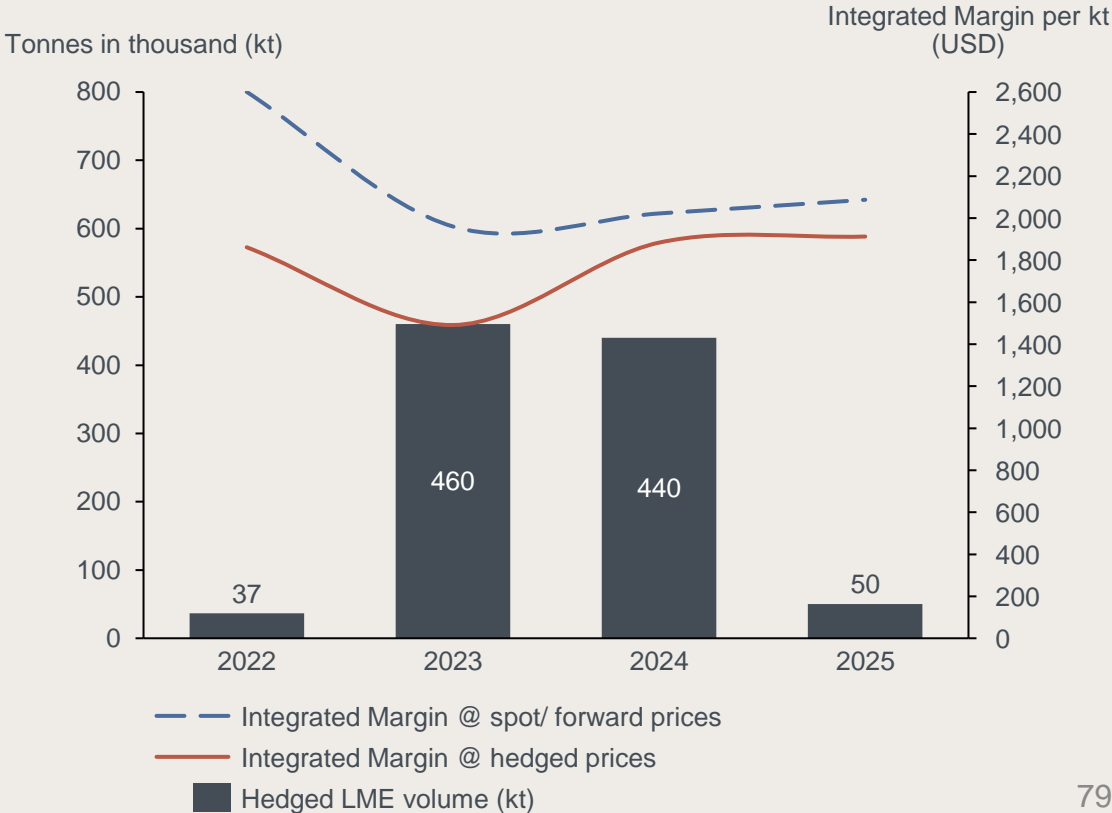
Strategic hedging status  
NOK Billion



Marked to Market as of November 30

- ✓ Derivative positions locked in at historical strong margins
- ✓ Negative values reflect an expectation to realise stronger business margins
- ✓ Hydro benefits from strong USD and LME price
- ✓ Hedged raw materials offset part of expected cost increase

## Hedged volumes and Integrated Margin



# Capital allocated according to strategic modes



Strategic modes reflect global megatrends and high-return opportunities

Safe, compliant and efficient operations  
– The Hydro Way



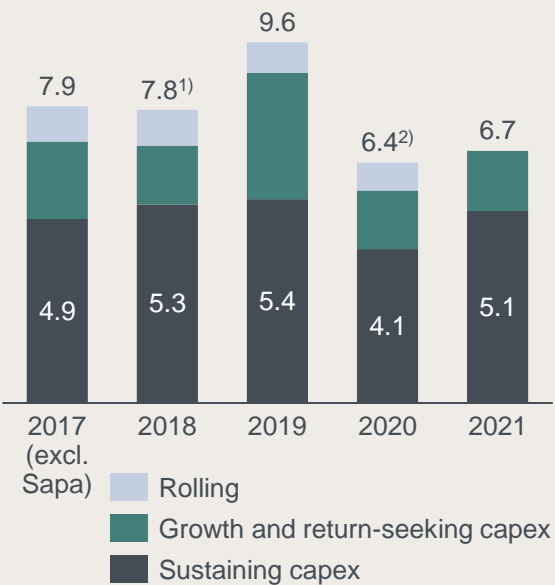
Businesses	 <b>Bauxite &amp; Alumina</b>	 <b>Aluminium Metal</b>	 <b>Recycling</b>	 <b>Energy</b>	 <b>Extrusions</b>
Strategic mode	Sustain and improve	Sustain and improve	Selective growth	Selective growth	Selective growth
Towards 2025	Reduce risk, improve sustainability footprint, improve cost position	Robustness and greener, increase product flexibility, improve cost position	Substantial shift in conversion of post-consumer scrap	Grow in renewables, hydrogen and batteries	Platform strategy executed, selective growth

# Annual capex guidance of BNOK ~13 for 2023-2026

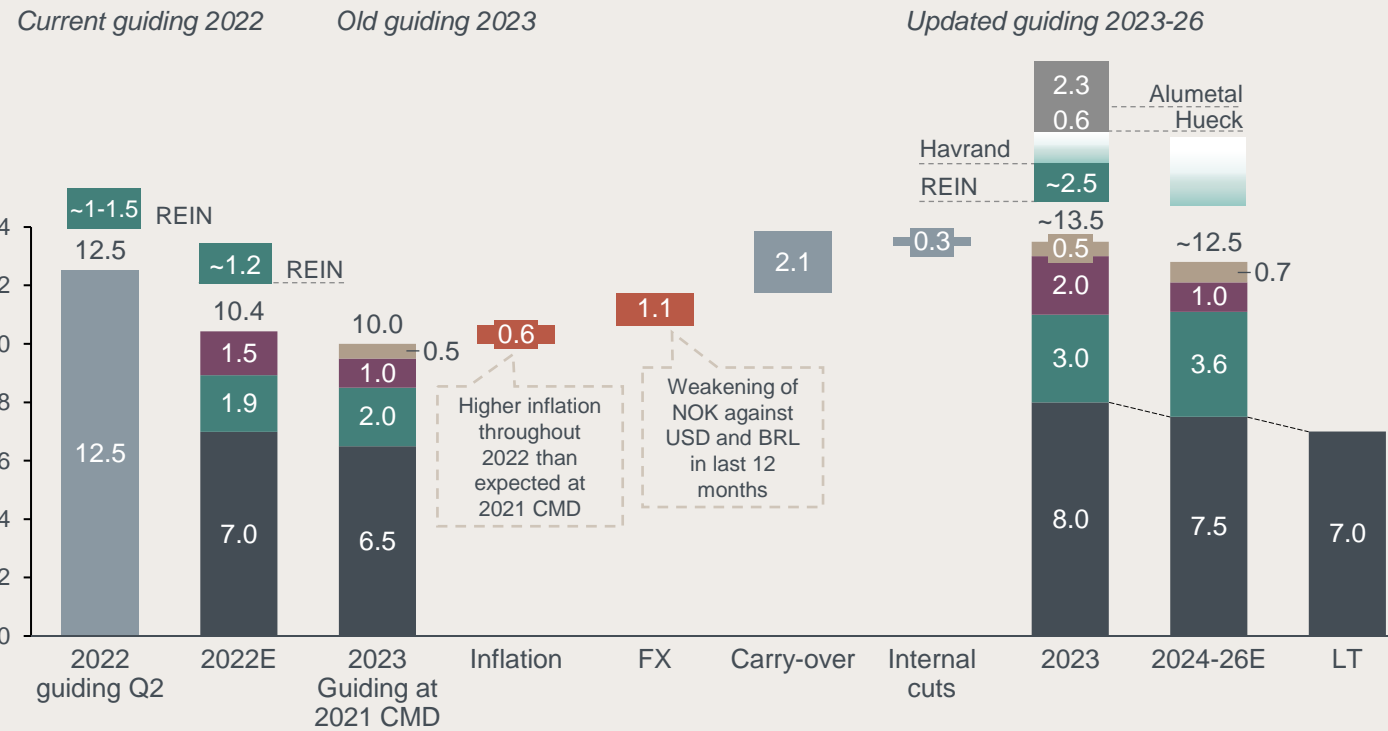


Inorganic growth in line with strategic modes could come in addition. Alumetal transaction dependent on regulatory outcome

Historical capex  
NOK Billion



Capex 2022E and guidance  
NOK Billion



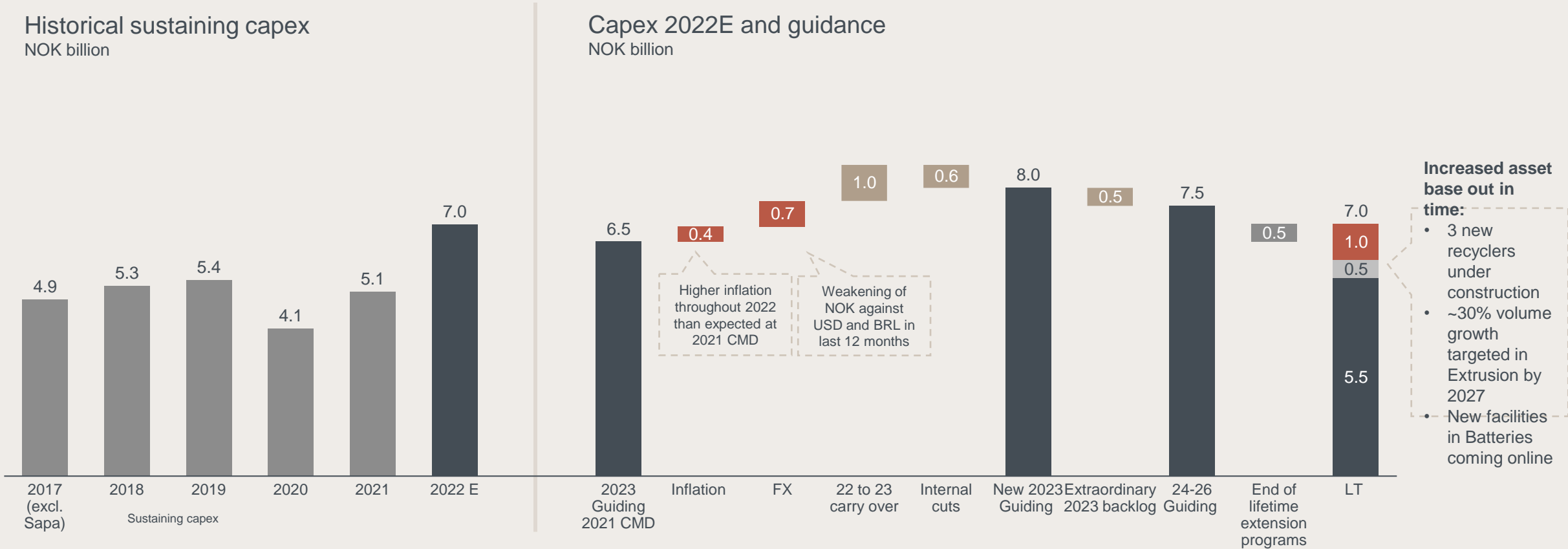
Capex including Extrusions  
Growth and return-seeking capex guidance 2023-25 avg only includes capex necessary for delivering on targeted improvement ambitions and commercial initiatives  
1) Excluding the Pis/Cofins adjustments in Brazil in 2018. Including the adjustment, 2018 capex amounted to BNOK 7.0  
2) Excluding NOK (0.1) billion from, e.g., changes in prepayments/payables for capex. Cash effective capex based on the cash flow statement amounts to NOK 6.5 billion (adjusted for changes in short-term investments)  
Based on FX assumptions BRLNOK ~1.9, USDNOK ~9.6, EURNOK ~10

Taxonomy: ~40% of capex classified as aligned

# Sustaining capex guidance of NOK ~7.5 billion in 2023-26



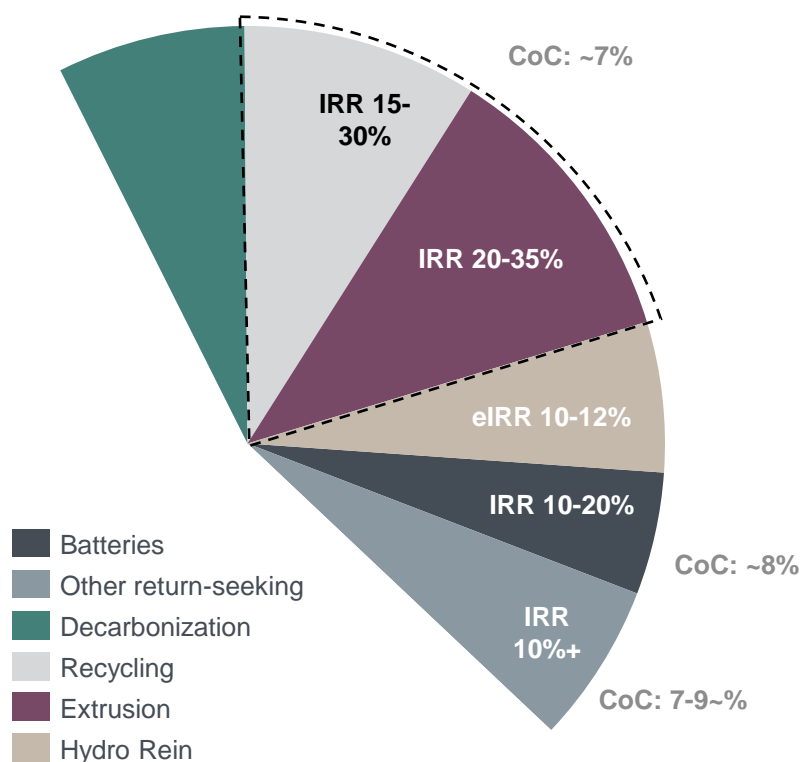
Short-term sustaining impacted by backlog from Covid, supply chain issues, inflation and FX. Long term normalizing at the end of lifetime extension programs





# Strong profitability in return-seeking and growth capex portfolio

Indicative profitability in current return-seeking and growth portfolio



## Recycling

- Increase proportion of post consumer scrap (PCS), lowering metal cost
- Improved economies of scale in brownfield expansions
- Sorting technology and equipment standardization

## Extrusions

- New presses with improved capabilities and commercial value, capturing market share
- Press replacements with significant cost reductions and increased productivity
- Focus on high growth segments including automotive, systems business and commercial transportation

## Hydro Rein

- USD 2.7 billion contracted revenues, 3.6 TWh signed under long-term EUR & USD PPAs
- 1.7 GW gross capacity in operation or construction
- Focus on early phase projects opportunities and strategic partnerships

## Batteries

- Focused strategy within sustainable battery materials, leveraging Hydro capabilities
- Establish positions in attractive growth segments in core markets
- Core investments: Hydrovolt (recycling) and Vianode (anode material)

## Decarbonization

- Alunorte Fuel switch project (IRR 10-20%)
- Carbon capture technology pilots in mid-term, industrial scale pilot volumes by 2030
- HalZero as technology pilots in mid-term, industrial scale pilot volumes by 2030

# Sustainable financing initiatives increase access to capital and provide cost of capital advantage

## Green and Sustainability Linked Financing Framework

- Framework published to facilitate issuance of green and sustainability linked bonds
- Linked to Hydro's sustainability ambitions
- CICERO Shades of Green provided Second Party Opinion allocating medium green shading and governance assessment at excellent

## Updated capital structure policy and EMTN Program

- Revised capital structure targets over the cycle
- EMTN program established to streamline bond issuance in line with capital structure policy

## Sustainability linked bonds (SLBs)

- NOK 3 billion SLBs (2022-2028) issued under framework and EMTN programme
- First SLB issue in the Norwegian corporate investment grade market
- SLB feature increased access to capital in challenging market conditions

### Linked to Hydro sustainability ambitions

**10%**  
carbon  
emission  
reduction  
by 2025

**660 000**  
**mt PCS**  
by 2025

### Revised capital structure in 2022

Adj. net  
debt/adj.  
EBITDA  
**< 2x**

Adj. net  
debt  
around  
**NOK 25**  
**billion**

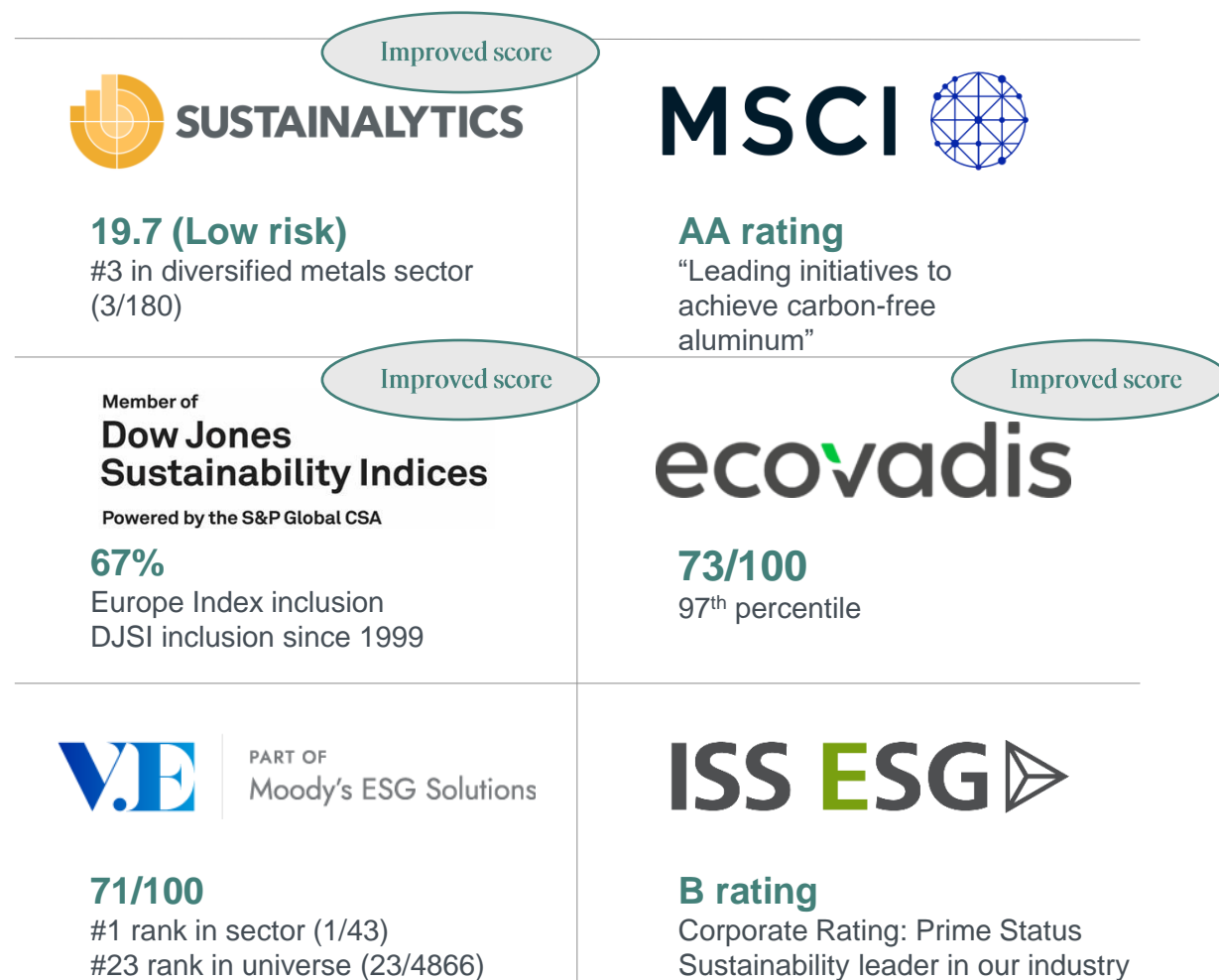
**NOK 3**  
**billion**  
SLBs

**1st corp**  
**IG SLB in**  
**Norway**

# Hydro continues to improve scores on key ESG ratings

## Continuing efforts to further increase transparency

- Transparent and consistent reporting approach for more than three decades
- Sustainability is fully integrated in Hydro's strategy
- Further improvements on several ratings in 2022
  - Sustainalytics: From *Medium risk* to *low risk* (20.6 -> 19.7)
  - Dow Jones Sustainability Indices: From 65% to 67%
  - Ecovadis: From 68/100 to 73/100



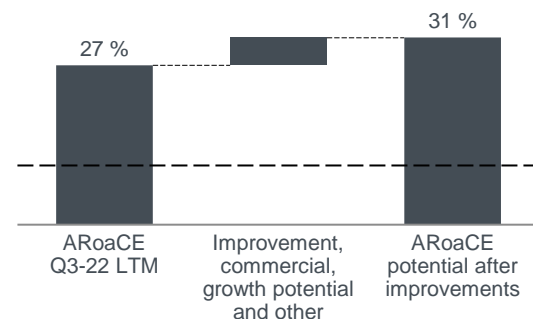
# Hydro profitability roadmap



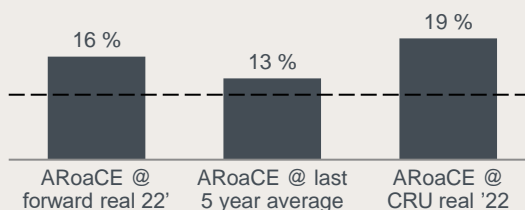
Main drivers – improvement, growth and market developments

## ARoaCE potential

Profitability target of >10%



## Market scenarios 2027



## Main further upside drivers

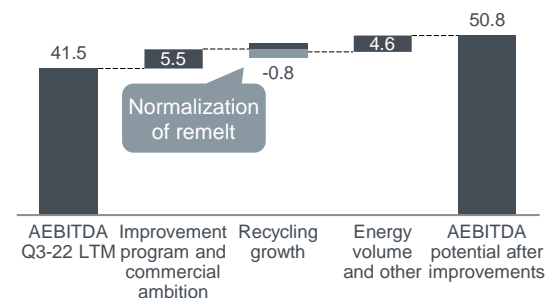
- Sustainability differentiation and ability to produce net-zero aluminium
- Positive market and macro developments
- High-return growth projects
- Technology and digitization
- Portfolio optimization

## Main downside risks

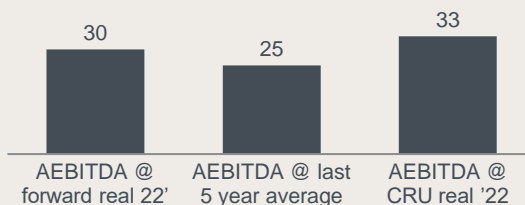
- Negative market and macro developments, incl. trade restrictions
- Operational disruptions
- Inflation pressure
- Project execution and performance
- Deteriorating relative positions
- Regulatory frameworks, CSR and compliance

## AEBITDA potential

NOK billion

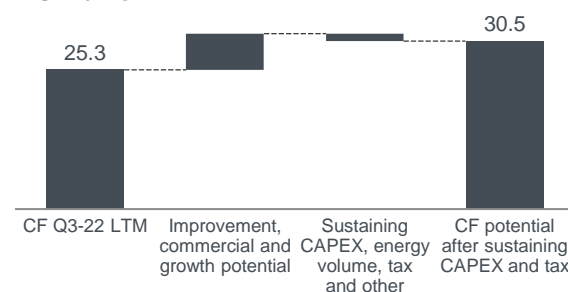


## Market scenarios 2027

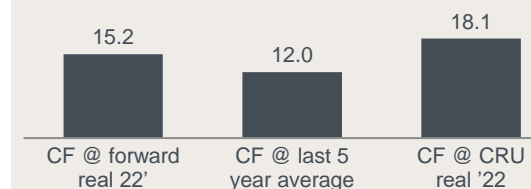


## Cash flow potential after sustaining CAPEX<sup>1)</sup>

NOK billion



## Market scenarios 2027



Note: Excluding growth from new energy areas

1) Cash flow calculated as EBITDA+tax+LT sustaining capex + other (lease payments, interest payments)

Assumptions and sources behind the scenarios can be found in the Additional information

Sources: Republished under license from CRU International Ltd.

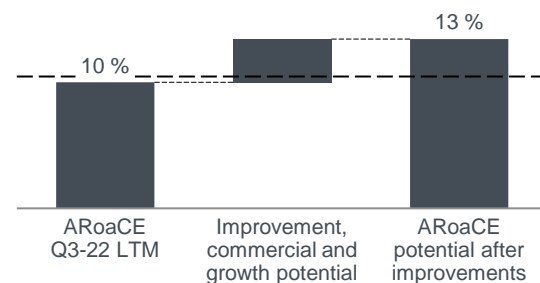
# Bauxite & Alumina profitability roadmap



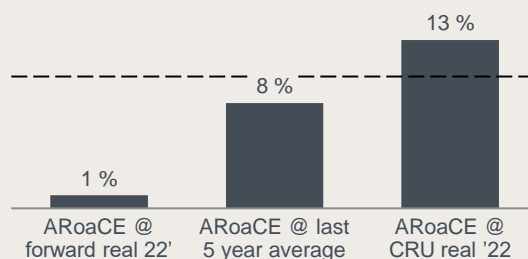
Main drivers – fuel switch, commercial differentiation and market development

## ARoaCE potential

Profitability target of >10%



## Market scenarios 2027



## Main further upside drivers

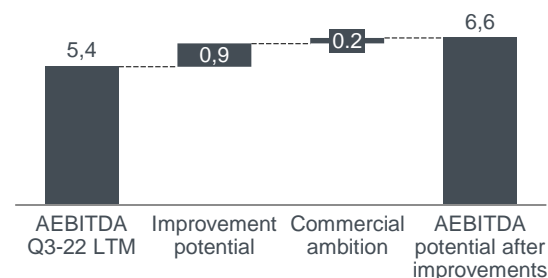
- Positive market and macro developments
- Commercial differentiation, incl. greener alumina
- Fleet optimization at the mine
- Sustaining capex optimization

## Main downside risks

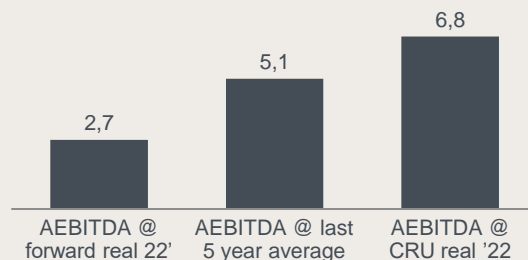
- Operational disruptions
- Negative market and macro developments
- Regulatory, CSR and country risk
- Supply chain disruptions
- Value chain concentration in Brazil

## AEBITDA potential

NOK billion

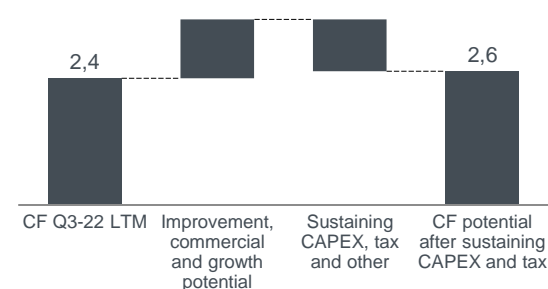


## Market scenarios 2027

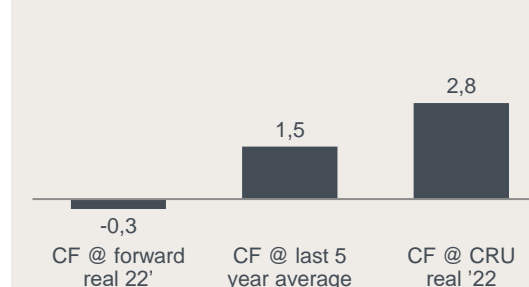


## Cash flow potential after sustaining CAPEX<sup>1)</sup>

NOK billion



## Market scenarios 2027



1) Cash flow calculated as EBITDA+tax+LT sustaining capex  
Assumptions and sources behind the scenarios can be found in the Additional information  
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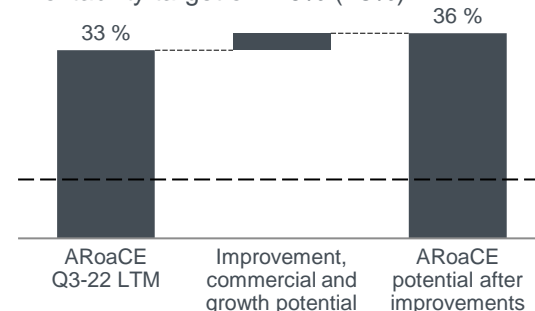
# Aluminium Metal and Metal Markets profitability roadmap



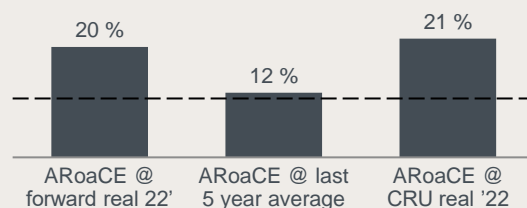
Main drivers – improvement efforts, commercial differentiation, and market development

## ARoaCE potential

Profitability target of >10% (>8%)



## Market scenarios 2027



## Main further upside drivers

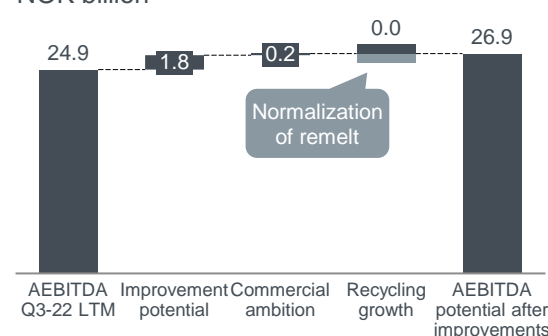
- Positive market and macro developments
- Commercial differentiation, incl. greener brands
- Recycling opportunities
- Portfolio optimization
- Further potential in automation, process control and efficiency, operational excellence

## Main downside risks

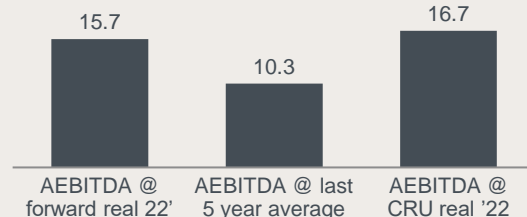
- Negative market and macro developments, incl. trade restrictions
- Deteriorating relative cost and market positions
- Operational disruptions
- Supply chain disruptions
- Regulatory and country risks, incl. tax

## AEBITDA potential

NOK billion

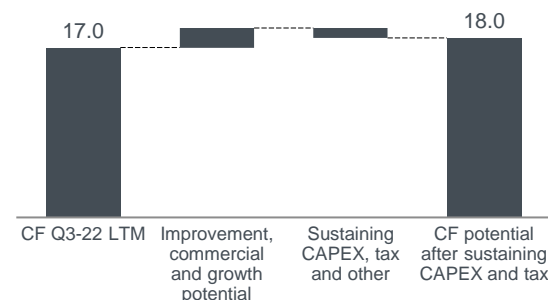


## Market scenarios 2027

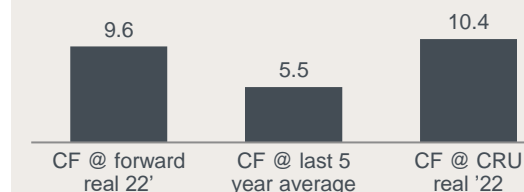


## Cash flow potential after sustaining CAPEX<sup>1)</sup>

NOK billion



## Market scenarios 2027



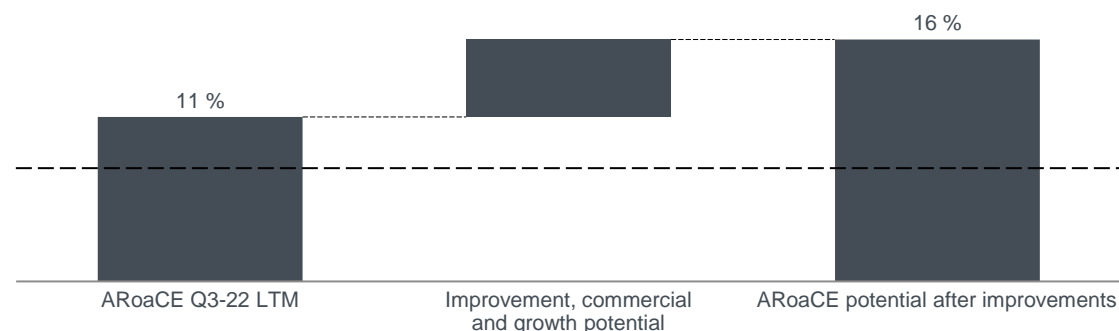
1) Cash flow calculated as EBITDA+tax+LT sustaining capex  
Assumptions and sources behind the scenarios can be found in the Additional information  
Sources: Republished under license from CRU International Ltd.

# Extrusions profitability roadmap

Main drivers – improvement program and commercial ambition

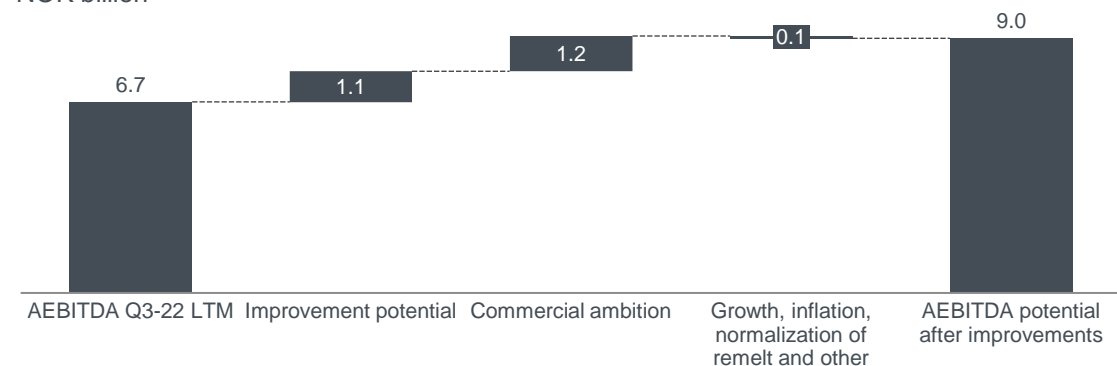
## ARoaCE potential

Profitability target of >8%



## AEBITDA potential

NOK billion



## Main further upside drivers

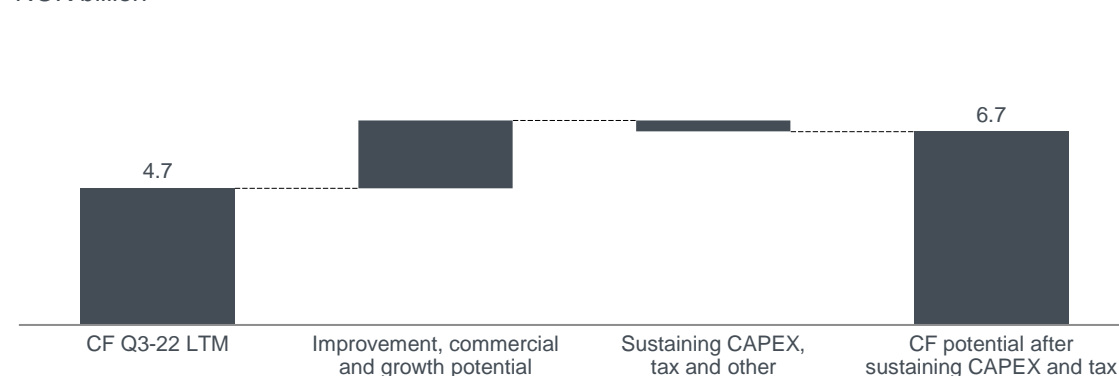
- Selective profitable growth including larger projects
- Continuous portfolio review and optimization
- Operating and fixed cost optimization
- Positive market and macro developments

## Main downside risks

- Negative market and macro developments, incl. trade restrictions
- Inflation pressure
- Loss of large customer contracts
- Supply chain disruptions
- Regulatory and country risks

## Cash flow potential after sustaining CAPEX<sup>1)</sup>

NOK billion

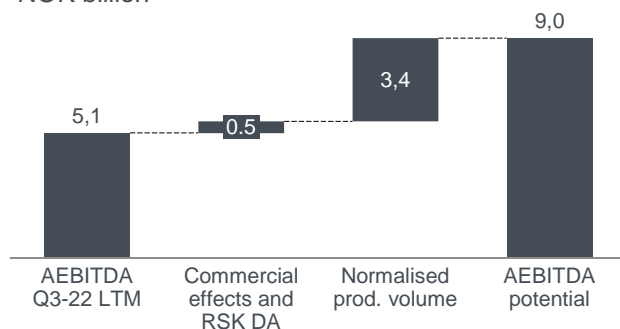


1) Cash flow calculated as EBITDA+tax+LT sustaining capex  
Assumptions and sources behind the scenarios can be found in the Additional information

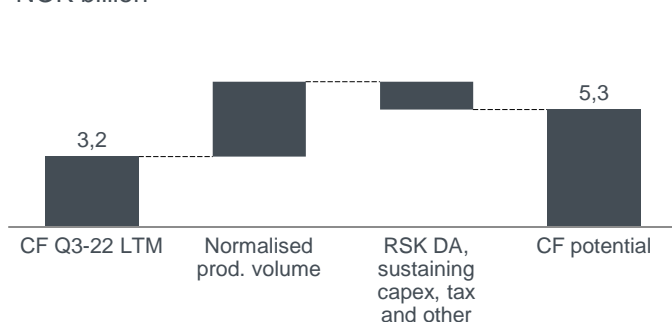
# Energy profitability roadmap

Main drivers – Net spot sales volume and market development

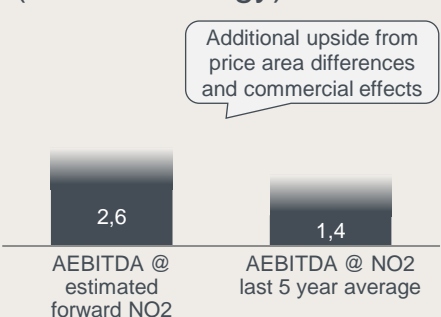
**AEBITDA potential (ex new Energy)**  
NOK billion



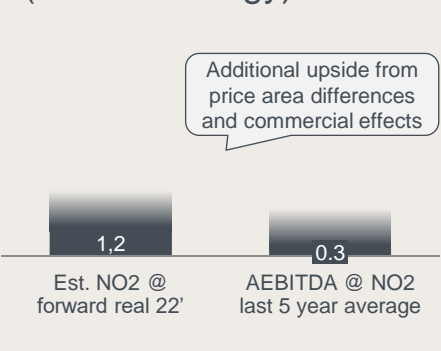
**Cash flow potential after sustaining CAPEX and tax (ex new Energy)**  
NOK billion



**Market scenarios 2027 (ex new Energy)**



**Market scenarios 2027 (ex new Energy)**



## Main further upside drivers

- Additional growth opportunities
- Further commercial and operational improvements
- Positive market and macro developments

## Main downside risks

- Negative market and macro developments
- Regulatory and framework conditions, incl. tax
- New project execution

## New Energy initiatives

- Growth projects in REIN, Havrand and Batteries

## Accounting treatment for Hydro REIN

### EBITDA

- Holding company fully included
- Investments in part-owned project companies included with share of net income

### Cash flow statement

- Includes cash flow to/from Hydro subsidiaries, including equity contributions from external companies

### Capex

- Capital contributions to part-owned vehicles included

### Balance sheet

- Parent companies fully consolidated, including any controlled project vehicles
- Part-owned project vehicles included with share of equity

Note: Excluding growth from new energy areas

\* Cash flow calculated as EBITDA+tax+LT sustaining capex

Assumptions and sources behind the potential can be found in the Appendix

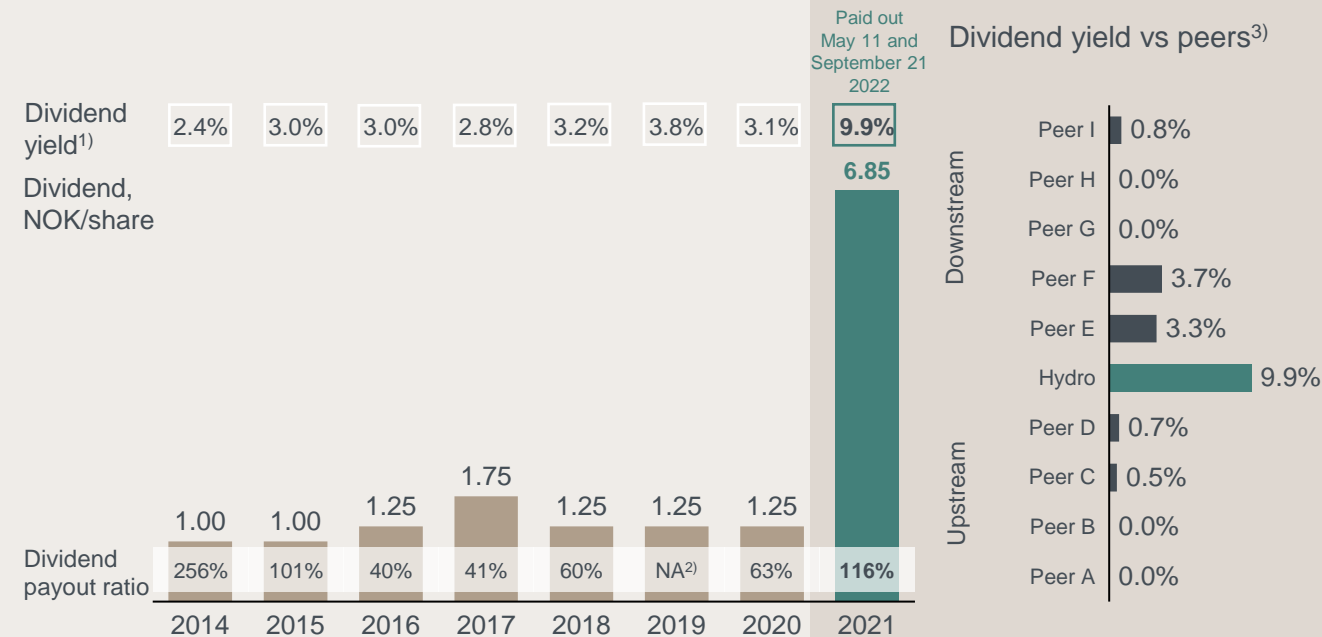
# Ambition for shareholder distribution

- Strong financials in 2022 allow solid shareholder distribution
- Hydro aims to pay out 50 – 70% of adjusted net income for 2022
  - A combination of ordinary dividends and share buybacks
  - Pay out depending on operating capital release YE, and preserving cash related to committed M&A transactions
- Final proposal for distribution at Q4 reporting in February
  - Proposal conditional upon Annual General Meeting approval
- Capital structure policy and targets updated in 2022, introducing an adjusted net debt target over the cycle around NOK 25 billion, leading to additional dividend distributed in September and launch of a share buyback program
- Share buybacks ongoing, approximately 36% of the program repurchased at end of November 2022

1) Based on share price at year end

2) Negative net income

3) Peer group includes (in alphabetical order): Upstream: Alcoa, Century, Chalco, Hindalco, Rusal  
Downstream: Amag, Arconic, Constellium, Kaiser



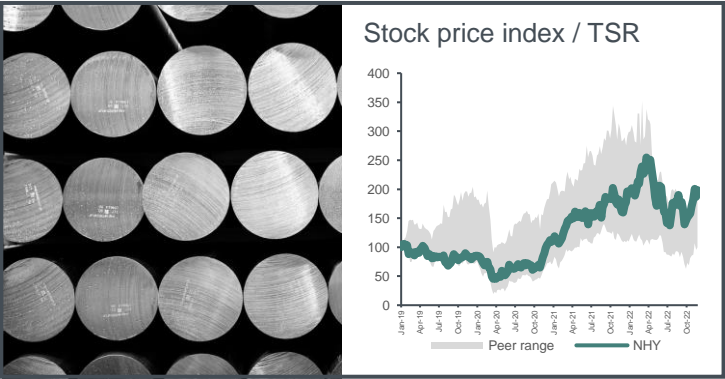
## Hydro's Dividend Policy

- Pay out minimum 50 percent of adjusted net income as ordinary dividend over the cycle
- The dividend policy has a floor of NOK 1.25 per share
- Share buybacks or extraordinary dividends will supplement dividends during periods of strong financials, due consideration being given to the commodity cycle and capital requirements for future growth
- The pay out should reflect Hydro's aim to give its shareholders competitive returns, benchmarked against alternative investments in comparable companies

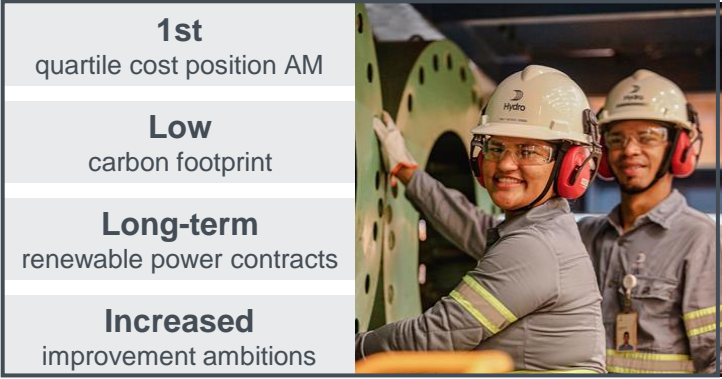
# Why invest in Hydro: key takeaways from today



## Good track record on relative shareholder value creation



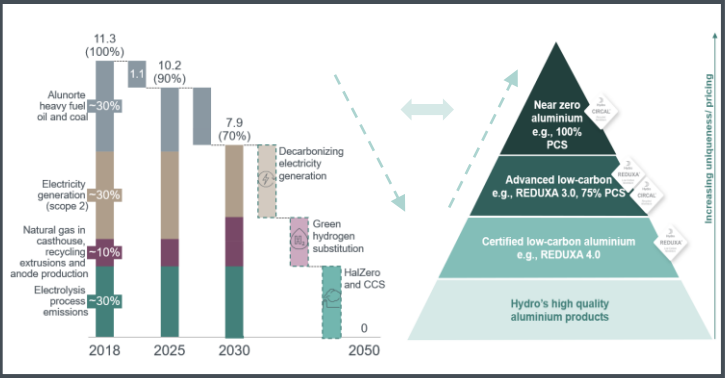
## Low and robust cost position with ambition to improve



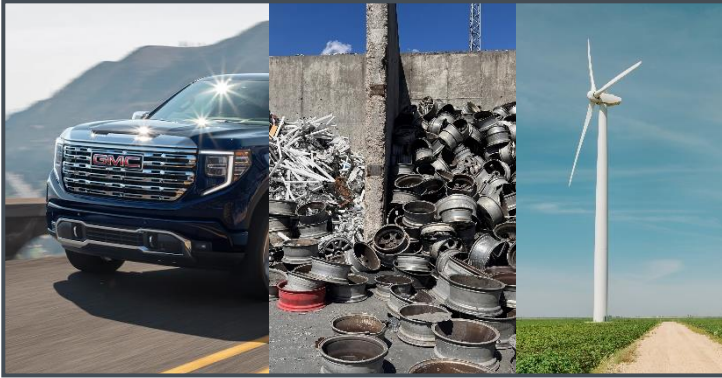
## Positive demand outlook for greener aluminium



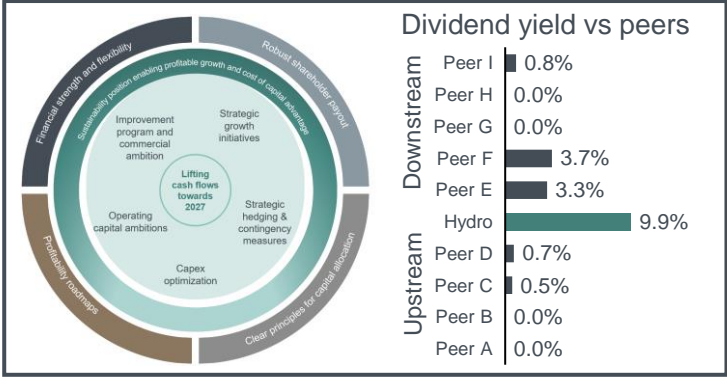
## Pathway to net-zero aluminium products



## Portfolio of profitable growth projects



## Solid financial framework and competitive shareholder distribution





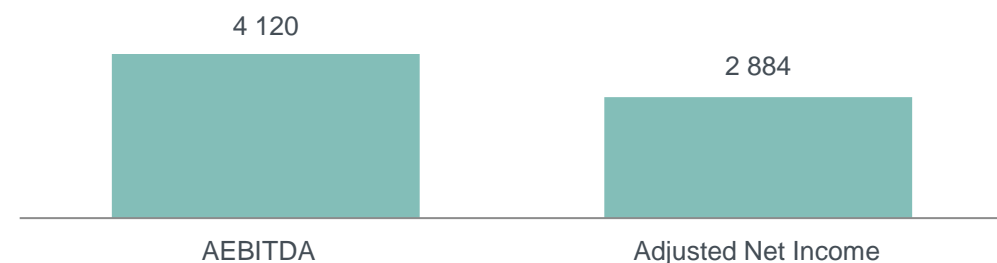


# Appendix

# Significant exposure to commodity and currency fluctuations

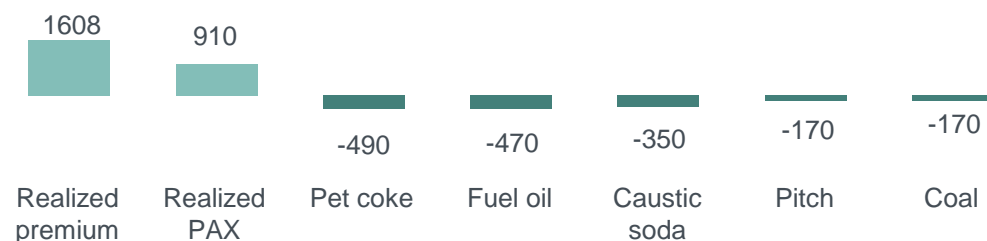
## Aluminium price sensitivity +10%

NOK million



## Other commodity prices, sensitivity +10%

NOK million



## Currency sensitivities +10%

Sustainable effect:

NOK million	USD	BRL	EUR
AEBITDA	4,440	(600)	(200)

One-off reevaluation effect:

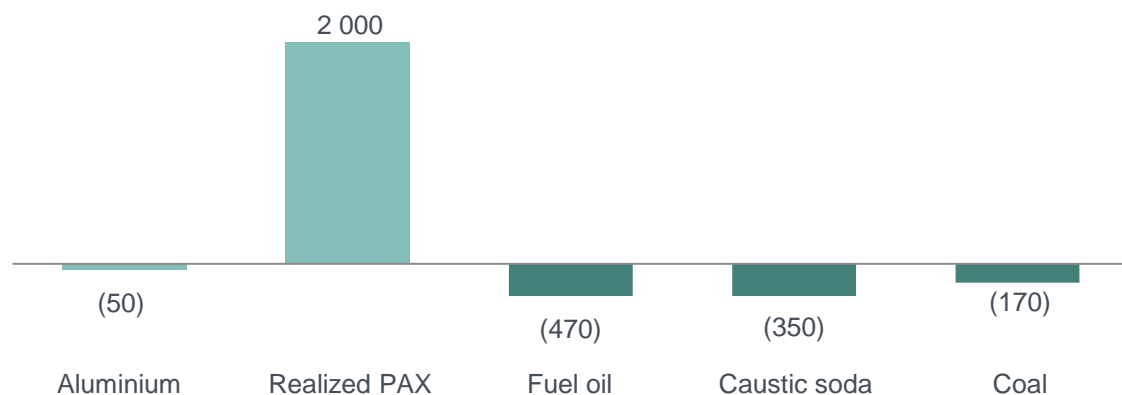
Financial items	(510)	890	(4,180)
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- Annual adjusted (unhedged) sensitivities based on normal annual business volumes. LME 2,875 USD/mt, standard ingot premium 477 USD/mt, PAX 389 USD/mt, fuel oil 899 USD/mt, petroleum coke 625 USD/mt, pitch 1,017 EUR/mt, caustic soda 597 USD/mt, coal 272 USD/mt, USD/NOK 9.25, BRL/NOK 1.77, EUR/NOK 10.00
- Aluminium price sensitivity is net of aluminium price indexed costs and excluding unrealized effects related to operational hedging
- BRL sensitivity calculated on a long-term basis with fuel oil assumed in USD. In the short-term, fuel oil is BRL-denominated
- Excludes effects of priced contracts in currencies different from underlying currency exposure (transaction exposure)
- Currency sensitivity on financial items includes effects from intercompany positions
- 2022 Platts alumina index (PAX) exposure used
- Adjusted Net Income sensitivity calculated as AEBITDA sensitivity after 30% tax
- Sensitivities include strategic hedges for 2022 (remaining volumes for 2022, annualized)

# Bauxite & Alumina sensitivities

## Annual sensitivities on adjusted EBITDA if +10% in price

NOK million



## Currency sensitivities +10%

NOK million	USD	BRL	EUR
AEBITDA	840	(440)	-

## Revenue impact

- Realized alumina price lags PAX by one month

## Cost impact

### Bauxite

- ~2.45 tonnes bauxite per tonne alumina
- Pricing partly LME-linked

### Caustic soda

- ~0.1 tonnes per tonne alumina
- Prices based on IHS Chemical, pricing mainly monthly per shipment

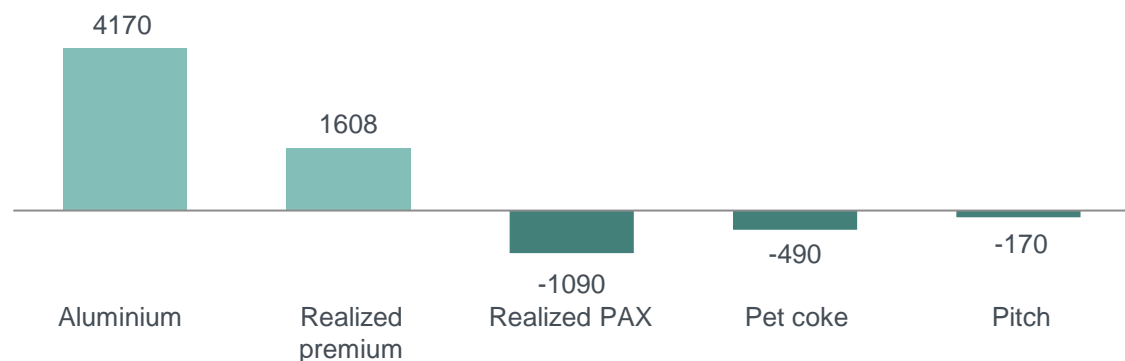
### Energy

- ~0.12 tonnes coal per tonne alumina, Platts prices, one year volume contracts, weekly per shipment pricing
- ~0.11 tonnes heavy fuel oil per tonne alumina, prices set by ANP/Petrobras in Brazil, weekly pricing (ANP) or anytime (Petrobras)

# Aluminium Metal sensitivities

## Annual sensitivities on adjusted EBITDA if +10% in price

NOK million



## Currency sensitivities +10%

NOK million	USD	BRL	EUR
AEBITDA	3,540	(170)	(750)

## Revenue impact

- Realized price lags LME spot by ~1-2 months
- Realized premium lags market premium by ~2-3 months

## Cost impact

### Alumina

- ~1.9 tonnes per tonne aluminium
- ~ 2-3 months lag
- Mainly priced on Platts index

### Carbon

- ~0.40 tonnes petroleum coke per tonne aluminium, Pace Jacobs Consultancy, 2-3 year volume contracts, quarterly or half yearly pricing
- ~0.08 tonnes pitch per tonne aluminium, CRU, 2-3 year volume contracts, quarterly pricing

### Power

- 14.0 MWh per tonne aluminium
- Long-term power contracts with indexations

# Assumptions behind scenarios



Scenarios are not forecasts, but illustrative earnings, cash flow and return potential based on sensitivities

- Starting point – AEBITDA Q3-22 LTM
- Improvement potential in real 2021 terms, upstream margins based on 2021 average
- Cash flow calculated as AEBITDA less EBIT tax and long-term sustaining capex, less lease payments and interest expenses for the Hydro Group
  - Tax rates: 25% for business areas, 34% for Energy, 19% (LTM) for Hydro Group
- ARoaCE calculated as AEBIT after tax divided by average capital employed
  - Average capital employed assumed to increase with growth capex and sustaining capex above LT sustaining CAPEX 2023-2026
- The actual earnings, cash flows and returns will be affected by other factors not included in the scenarios, including, but not limited to:
  - Production volumes, raw material prices, downstream margin developments, premiums, inflation, currency, depreciation, taxes, investments, interest expense, competitors' cost positions, and others
- Energy market scenarios for 2027 excludes gains from price area differences and commercial effects

## Price and FX assumptions

Assumptions used in scenarios	Q3 2022 LTM	2023 forward real	2027		
			Forward real 2022	Last 5 year average	CRU real 2022
LME, USD/mt	2,880	2461 (deflated by 2%)	2,560 (deflated by 2%)	2,130	2,400 (deflated by 2%)
Realized premium, USD/mt	755	413 <sup>1)</sup>	413 <sup>1)</sup>	385	496 <sup>4)</sup> (deflated by 2%)
PAX, USD/mt	390	325 (deflated by 2%)	340 <sup>2)</sup> (deflated by 2%)	330	360 (deflated by 2%)
Caustic soda, USD/mt	600	900 <sup>1)</sup>	900 <sup>1)</sup>	406	403 (deflated by 2%)
Coal, USD/mt	270	255 (deflated by 2%)	200 <sup>3)</sup> (deflated by 2%)	110	200 <sup>7)</sup> (deflated by 2%)
Pitch, EUR/mt	1,020	1300 <sup>1)</sup>	1,300 <sup>1)</sup>	730	770 <sup>5)</sup> (deflated by 2%)
Pet coke, USD/mt	630	717 <sup>1)</sup>	720 <sup>1)</sup>	410	430 <sup>5)</sup> (deflated by 2%)
NO2, NOK/MWh	2,010	2,010 <sup>6)</sup>	1,250 <sup>6)</sup>	690	1,250 <sup>7)</sup>
Nordic system, NOK/MWh	1,260	1,260 <sup>6)</sup>	570 (deflated by 2%)	540	570 <sup>7)</sup> (deflated by 2%)
USDNOK	9.25	9.69	9.50	8.87	8.88
EURNOK	10.00	10.30	10.68	10.10	8.34
BRLNOK	1.77	1.86	1.84	1.99	1.66

1) Spot price 2) % of LME forward price deflated by 2% 3) 2026 nominal forward price deflated by 2% 4) Realized premium based on CRU product premiums Q4-2024 5) Historic average % of LME, using CRU LME price deflated by 2% 6) Based on Nordic system forward price and constant NO2-Nordic system area price 7) Based on price from forward case 8) Based on LTM power prices  
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**Hydro**

*Industries that matter*