2019 saw a marked improvement in the marine seismic acquisition sector with activity increasing significantly throughout the year. We also witnessed greater focus on the environmental, social and governance standards of companies operating in the oilfield services sector, by investors, clients and regulatory bodies. This focus is welcomed by Polarcus.

The philosophy for how we operate today was established more than a decade ago, at the Company’s inception in 2008, with the Polarcus vision:

“To be a pioneer in an industry where the frontiers of seismic exploration are responsibly expanded without harm to our world”

This vision is underpinned by the Polarcus Core Values of Responsibility, Innovation and Excellence, well-known to every employee and integrated in all aspects of our operations.

The maritime sector has finally transitioned to International Maritime Organization (IMO) 2020 regulations. While many shipowners have struggled to adopt these standards, I am proud that Polarcus has led the way with our Explore Green™ agenda, operating well within the IMO 2020 requirements for more than a decade. We remain committed to using low sulfur fuel across all our operations and we promote the transparent monitoring, reporting and continued reduction of emissions generated through marine seismic operations. The reporting of carbon dioxide, nitrogen oxide and sulfur oxide emissions has long been a regular feature of our quarterly earnings reporting.

Prioritizing our social goals is critical to the wellbeing and development of all Polarcus stakeholders - employees, contractors and the many communities with which we engage around the globe. A key driver of our operational success has been our ‘Polarcus employee model’ which will enable us to build on our strong offshore safety record going forward.

In 2019, our internal, leading safety indicators were delivered well within challenging targets. Polarcus also delivered its traditional industry safety metrics, ahead of historical marine seismic safety performance. We will continue to collaborate with our clients, employees and contractors to ensure this remains the case!

In terms of governance, Polarcus is listed on the Oslo Stock Exchange and complies with high standards for reporting financial, safety, operational and environmental data - all verified by rigorous internal and external audits. 2019 again saw Polarcus operating across the entire globe, from Australia to Alaska and from Mexico to Mauritania. We remain committed to deliver our services to the same standard and with the same reliance on strong business ethics wherever we work.

Within our best business practices, cyber security has come to the forefront in recent years during which we have introduced programs and training to lead the way in protecting our systems, confidential information and client data.

In order to interpret our performance and to benchmark against other companies and sectors, we have maintained reference to two important global standards. The Global Reporting Initiative provides a comprehensive framework through which to structure our historic and current initiatives to deliver and demonstrate the sustainability of our business. The UN Sustainable Development Goals are used to measure the progress of our initiatives and to outline what we want to achieve in the future.

Please enjoy the Polarcus 2019 Sustainability Report. It provides a clear insight into the way we do business in Polarcus for the benefit of all our stakeholders.
THE FOCUSED GEOPHYSICAL SERVICE PROVIDER

Polarcus is a focused geophysical service provider of safe and environmentally responsible marine acquisition services globally. The company’s geophysical offering is driven by innovation and collaboration to provide clients with better data faster. Polarcus offers contract seismic surveys and multi-client projects with advanced priority processing solutions including Cirrus™, a suite of cloud-based applications and services designed to bring clients closer to their acquired seismic data, enabling faster and better-informed exploration decisions. Through its fleet of high-performance seismic vessels with 3D and 4D imaging capabilities incorporating leading-edge technologies for improved environmental performance and operational efficiency, Polarcus’ service offering is underpinned by providing greener data safer. The company services its clients globally from its head office in Dubai and regional offices located in Houston, London and Singapore. Polarcus employs approximately 325 professionals worldwide and owns seven marine seismic vessels that were constructed in the UAE and Norway, entering the high-end 3D marine seismic market during 2009-2012.

Vision

“To be a pioneer in an industry where the frontiers of seismic exploration are responsibly expanded without harm to our world”.

To achieve this vision, Polarcus has committed to being at the forefront of maritime and geophysical innovation. From inception, Polarcus set an ambitious environmental agenda that aims to monitor and minimize the environmental footprint of marine seismic acquisition through a combination of reduction, recycling and emissions reporting. Polarcus has invested in the latest new-build vessel designs and technologically advanced seismic and navigation systems. These investments ensure that the Polarcus seismic fleet remains one of the most advanced fleets in the world, enabling the current and projected future needs of the industry to be met, and capable of excelling in the broadest range of operating environments around the globe.

Core Values

The company’s Core Values of Responsibility, Innovation and Excellence are embedded in all elements of the business and form the foundation for delivering the Polarcus 2023 Strategy and striving towards the Polarcus Vision.
“Create superior value for our stakeholders through responsible marine acquisition services and geophysical solutions driven by innovation and industry collaboration”.

POLARCUS 2023 STRATEGY
Global Reporting Initiative (GRI) Standards

Polarcus has reported annually on its sustainability activities and progress since 2014. In 2017, the company took a step further by reporting in alignment with the GRI Standards. This is a global standard representing best practice for sustainability reporting on a range of economic, environmental and social impacts.

With the GRI as a reference point, Polarcus conducts a materiality analysis to identify the key areas of focus for which the Polarcus organization has an impact on. The company’s contribution to sustainable development in these areas are detailed in this report.

United Nations (UN) Sustainable Development Goals

According to the UN, the Sustainable Development Goals are “the blueprint to achieve a better and more sustainable future for all”. They aim to address global challenges related to poverty, inequality, climate change, environmental degradation, peace and justice.

Building on the areas of focus identified from the GRI materiality analysis, Polarcus has chosen seven of the UN Sustainable Development Goals to actively support. This report shares more about what Polarcus is doing to minimize the environmental impact of its operations, optimize sustainability of the business and mitigate risks. The UN Sustainable Development Goals identified in this report form the framework of what we want to work towards in the future.

Polarcus welcomes any questions, feedback or suggestions, which can be directed to:
sustainability@polarcus.com
Polarcus has chosen to actively support seven of the UN Sustainable Development Goals.

STRIVING FOR OPTIMAL SUSTAINABILITY

LOOKING AFTER THE ENVIRONMENT
Our environmental developments

CARING FOR PEOPLE
Our social considerations

BEST BUSINESS PRACTICE
Our governance
LOOKING AFTER THE ENVIRONMENT

For more than a decade, Polarcus has been the industry benchmark for environmental responsibility with a proactive approach to mitigating environmental impacts and leading the industry in sustainable marine seismic exploration. Polarcus is committed to maintaining this leadership position, and to continually improve environmental performance. This is embedded in all aspects of the company and reflected in the Polarcus Vision, Core Values, Commitments and 2023 Strategy.

Explore Green™ Making Waves

Polarcus is proud to responsibly lead the marine seismic industry towards a more sustainable future and the company’s motivation goes beyond being legally compliant. The Polarcus Explore Green™ agenda was introduced when the company was formed in 2008 and, since then, a substantial and proactive investment in time and money has been made to ensure Polarcus continues to outperform legislative requirements. This has become increasingly important as the industry observes more government and non-government organizations placing additional emphasis on environmental matters and enforcing more rigorous regulations on emissions.

Polarcus remains committed, and driven, to going beyond any regulatory and legislative requirements in order to carry out marine seismic operations in the most sustainable manner.

Explore Smarter™

Polarcus has always been focused on doing things smarter and the company’s efforts to reduce emissions to air comes from many parts of the Polarcus organization.

When the Polarcus fleet was designed and constructed, sustainability was central to the vision of becoming an innovative environmental leader in the marine seismic industry. Each vessel was equipped with a significant investment in technology that either eliminated or significantly reduced harmful emissions.

Although attention is often directed towards the seismic vessel and the efficiency of operations at sea, there are other contributing factors that can have a significant impact on the emissions produced before a marine seismic project has even mobilized.

· Minimizing vessel transit and non-productive time of the Polarcus fleet has a major impact on emissions generated. The global sales, geophysical and operational teams at Polarcus work continuously to optimize the schedules of Polarcus vessels to achieve the smartest possible programs, thereby delivering greener data safer by increasing efficiency of the entire fleet through maximizing the amount of square kilometers acquired and minimizing the generation of emissions.

· Smart survey design and innovative geophysical solutions enables Polarcus to deliver better data faster, and further reduce the generation of emissions to air. Polarcus XArray™ has revolutionized the marine seismic industry with efficiency gains and reduction of in-sea equipment; all contributing to reducing fuel consumed and in turn, emissions produced during a marine seismic survey.

In 2019, Polarcus launched Circrus™, a new data management and streaming platform designed to bring acquired seismic data to clients faster via direct satellite transfer. Circrus™ allows rapid onshore access to high fidelity seismic data, which enables Polarcus and their clients to make project decisions in near real time. The immediate impact is a reduced requirement for shipments of physical data tapes, reducing the emissions and other waste associated with this outdated process. In the future, further enhancements will allow data tape shipments to be eliminated completely.
Polarcus recognizes that it has direct impact on the marine environment in which the company operates. The UN Sustainable Development Goal 13 ‘Climate Action’ and Goal 14 ‘Life Below Water’ are central to Polarcus’ commitment to continuously improve in these areas.

In 2015, Polarcus developed XArray™, a multi-source configuration designed to optimize operational efficiency and to enable the collection of more, high-quality seismic data per sail line using additional sources, rather than additional streamers. This approach significantly reduces the in-sea drag of the seismic acquisition unit and has been a key driver for the continued reduction of Polarcus’ gaseous emissions per square kilometre of seismic data acquired.
Managing Emissions to Air

Exhaust emissions, such as sulfur oxides and nitrogen oxides, continue to have a detrimental impact on the environment. Furthermore, carbon dioxide emissions add to the greenhouse effect, impacting the planet’s temperature and climate. As a result, air pollution has been declared by the United Nations Environment Programme as the greatest environmental risk to human health.

To fully understand the impact of marine seismic operations on the environment, Polarcus has accurate and reliable tools to monitor, measure and report fuel consumption and gaseous emissions generated onboard all Polarcus vessels.

- An emissions monitoring and measuring tool, unique to Polarcus, has been developed and certified by the classification society, DNV-GL. This verifies Polarcus’ ability to model the predicted emissions footprint for all marine seismic acquisition projects.

- Post-project analysis enables reporting of actual emissions measurements against a project model, along with an analysis of the drivers for any deviation to model. For each project, a DNV-GL verified emissions certificate is produced and presented to the client upon completion.

Utilizing the DNV-GL certified emissions tool which monitors and reports gaseous emissions, in combination with the onboard Selective Catalytic Reduction (SCR) systems, which are able to convert nitrogen oxides and substantially reduce emissions, Polarcus truly is a pioneer in the measurement, monitoring and mitigation of emissions to air.

Greenhouse Gas (GHG) emissions across the Polarcus fleet are significantly below levels required by the International Maritime Organization regulations.

To further increase awareness and promote transparency of the environmental impact in the oilfield services industry, Polarcus continues to disclose publicly total airborne emissions generated by its marine seismic acquisition operations on a quarterly basis.

Sulfur Oxide (SOx) emissions

SOx are a group of highly reactive gasses containing sulfur and oxygen that are produced during the burning of hydrocarbon-based fuels. The high toxicity of SOx contributes to the formation of acid rain and the corrosion of metal.

The content of SOx in combustion emissions is directly related to the type and quality of fuel being used. The best way to minimize SOx emissions in vessel exhausts is to use the cleanest fuel with the lowest sulfur content possible, such as low sulfur Marine Gas Oil.

In 2019, SOx emissions were at 0.9kg of sulfur per square kilometre of seismic acquired, resulting in a slight increment compared to the 2018 SOx emissions which were at 0.6kg of sulfur per square kilometre of seismic acquired. This was driven by utilization of the Polarcus fleet which was lower (79% in 2019 vs 87% in 2018). In addition to this, multiple large scale projects involving complex 4D and multi-azimuth acquisition techniques in 2019 resulted in less square kilometres acquired per unit of time in 2019 compared to 2018. It should be noted that the 2019 SOx emissions were lower than the three previous years (2016-2018) average of 1.2kg per square kilometre of seismic acquired.

Why Polarcus chooses Marine Gas Oil (MGO) over Heavy Fuel Oil (HFO)

Classified as carcinogenic by the UN, HFO is renowned for its destructive impact on the environment and, for this reason, Polarcus has never used HFO in any operations.

As an environmentally preferable alternative, Polarcus uses low sulfur MGO across its seismic fleet, and requires the same for third party vessels supporting Polarcus operations.

International Maritime Organization (IMO) 2020 sulfur cap compliant

The IMO 2020 sulfur cap came into effect from 1 January 2020 and has been the most substantial regulatory change to the industry in recent times. This requirement reduced the level of sulfur content permitted in fuel oil used onboard ships operating outside designated emissions-controlled areas from 3.5% mass by mass (m/m) to 0.5% m/m. The IMO objective is to reduce the amount of SOx emanating from maritime activities globally which will provide major health and environmental benefits, particularly for populations living close to ports and coastlines.

While some companies have resorted to retrofitting sulfur scrubbers to their vessels during 2019-20 to comply with the new IMO regulations, Polarcus’ commitment to MGO since 2008 has dealt directly with the root cause of sulfur emissions and enabled Polarcus to stay ahead of the industry curve.

The average sulfur content of fuel consumed from the very first Polarcus project in 2009 until the end of 2019 is 0.11% (vs the IMO 2020 requirement of 0.50%).

The total emissions of SOx from the Polarcus fleet from its first project in 2009 until today is ~1,100 tonnes.

In 2019, the average sulfur content of fuel consumed by Polarcus’ global fleet was 0.06% sulfur m/m. This represents ~10 times lower sulfur content than current global regulations.

Polarcus has been compliant with the new IMO 2020 regulation for more than a decade. This means anyone working with Polarcus over the last 10 years has taken part in industry-leading low emissions marine seismic acquisition.
Nitrogen Oxides (NOx) emissions

NOx emissions are also generated during the combustion of hydrocarbons. A harmful combination of nitrogen and oxygen, NOx are the key components in ground-level smog and are precursors to the formation of acid rain. Nitrogen dioxide (NO2) is a major ozone depleting GHG that has ~300 times more impact per unit weight than carbon dioxide. The Selective Catalytic Reduction (SCR) technology installed across the entire Polarcus fleet during construction between 2008 and 2012, selectively targets and significantly reduces NOx emissions. All Polarcus vessels can operate with significantly reduced NOx emissions to air.

NOx emissions generated have been relatively constant since 2016 with the four year average of ~28kg of NOx per square kilometer being maintained in 2019.

Carbon Dioxide (CO2) emissions

CO2 is also produced by combustion hydrocarbons including coal, peat, petroleum and natural gas. It is the most significant, long-lived GHG in the Earth’s atmosphere. Since the Industrial Revolution, the concentration of CO2 emissions, primarily from the use of fossil fuels and deforestation, have rapidly increased in the atmosphere, contributing to global warming. CO2 also causes ocean acidification, dissolving in water to form carbonic acid.

CO2 emissions are directly correlated to fuel consumption. The most effective way for Polarcus to reduce CO2 emissions, and mitigate the impact to the environment, is to reduce fuel consumption. Polarcus’ unique fleet of fit-for-purpose vessels, equipped with highly efficient combustion engines, operate with industry leading efficiency. The company continues to demonstrate that its vessels consume significantly less fuel than peers per square kilometre of seismic data acquired.

By reducing significantly the in-sea drag of the seismic acquisition unit, Polarcus XArray™ has been a key driver in continuing to reduce the company’s CO2 emissions. As a result of continuous improvement, innovation and focused efficiency programs, Polarcus has improved fuel efficiency, per seismic data point acquired, by an average of 30% since 2014.

Moving forward, Polarcus is already developing and implementing strategies to reduce its CO2 emissions in 2020 and beyond. Similar to SOx and NOx emissions in 2019, CO2 emissions were maintained at a constant low level of 2.4 tonnes per square kilometre of seismic acquired, similar to the prior three-year average in 2016-18. The increase in CO2 emissions from 2018 observed is consistent with lower utilization of the Polarcus fleet in 2019 vs 2018 combined with the elevated proportion of 4D and wide azimuth projects resulting in less square kilometres acquired during 2019.
Managing Emissions to Sea

Operating in oceans worldwide, Polarcus works hard to ensure that oceans are free from pollution from start to finish of every Polarcus project.

All vessels in the Polarcus fleet have been designed with double hulls; a design and construction technique where the vessel has two complete watertight layers - the outer hull and the inner hull. No oil products are stored in the void between the outer hull and the inner hull. This reduces the risk of a pollution incident should a grounding or collision inadvertently occur.

In addition, Polarcus has implemented several procedures, systems and technical features to mitigate the risk of pollution or spills to the world’s oceans. These include state-of-the-art ballast water management and bilge water treatment systems. Polarcus had zero recordable spills in 2019.

Ballast water management systems

Ballast water is required to ensure the stability, trim and structural integrity of a ship. On a seismic vessel, it is used to replace the weight of consumed fuel and to offset the weight of deployed streamers in order to maintain stability and efficiency when in operation.

It is estimated that as many as 4,500 invasive species of plants and animals are transported per day in ships’ ballasts around the world in the broader maritime industry. The introduction of invasive marine species into new environments by ships’ ballasts was identified as one of the greatest threats to the world’s oceans and to global biodiversity.

The Polarcus fleet operates ballast water management systems, which are 100% chemical free and eliminate all invasive species from the ballast water by filtration and ultra-violet (UV) treatment.

Bilge water treatment systems

Bilge water is a mixture of fresh water, sea water, oil, sludge, chemicals and other ship-board fluids. By design, it collects in the lowest compartment of a ship’s hull below the waterline where the two sides of the hull meet at the keel. This area is known as the bilge.

Current IMO regulations mandate that any discharged bilge water shall contain no more than 15ppm of oil residue. Polarcus’ bilge water treatment plants clean the contaminated water to <5ppm, more than three times below regulatory requirements. Further, all Polarcus vessels use biodegradable oils and lubricants, where it is mechanically accepted. This significantly reduces the impact of any potential spill to sea in the event of a system failure or an operational incident.
Managing Acoustic Emissions

There have been significant studies over long periods of time, evaluating the proximity of seismic operations to marine mammals and the effects that the source arrays may have on their well-being. While research into this subject is still ongoing, mitigation of mammal disturbance continues to be a high priority for Polarcus and the marine seismic industry.

An exclusion zone of minimum 500m radius, centered on the sources, covers an area from the front of the vessel to the outer edges of the front end of the streamer spread. This exclusion zone is closely monitored and if the presence of any marine mammals is detected, appropriate action is taken.

Soft starts involve ramping up the energy source volume gradually and are also used to warn marine mammals and sea turtles of impending seismic operations and to allow enough time for those animals to leave the immediate vicinity.

The entire Polarcus fleet is built using the Ulstein X-bow hull design which, through its innovative hull lines, creates less in-sea noise and vibration, allowing for a quieter operation, better quality seismic data and less disturbance to the surrounding environment.

Seismic source size

A key driver for minimizing Polarcus’ acoustic emissions takes place early in the planning phase of every project. The Polarcus geophysical teams evaluate and recommend the smallest possible source to obtain the best possible geophysical result with minimum impact to the surrounding environment. These efforts together with the implementation of XArray™, have led to a clear trend in reducing average source size across the marine seismic acquisition industry.

Passive Acoustic Monitoring (PAM)

PAM is a technique used to monitor marine mammal activity, which is easier to hear than to see, in the vicinity of offshore operations. With the use of specifically deployed hydrophone arrays, a PAM operator can determine if any marine mammals are within the exclusion zone before seismic acquisition commences.

Polarcus remains the only seismic operator in the industry to have PAM systems permanently installed on all operational vessels.

Local communities

Polarcus is the face of the exploration and production industry for every acquisition project it conducts around the globe. Polarcus works closely with clients to optimize the onshore and offshore environments during a marine seismic operation and to engage with local community stakeholders.

Onshore efforts in 2019 included targeted efforts to minimize impact to local fisheries, leveraging utilization of local businesses and expertise, and supporting local schools and charities.

Offshore, Polarcus crews continue to be an active participant of the Ghost Net Initiative. Launched by the International Association of Geophysical Contractors (IAGC), this initiative encourages offshore seismic crews to contribute towards cleaning the world’s oceans by safely removing any floating debris from the ocean and to dispose of it in an environmentally responsible manner. This involves actions such as the untangling of wildlife from abandoned fishing nets and releasing them back to the ocean, and removing abandoned fishing gear and marine debris from the areas in which Polarcus operates.

In 2019, Polarcus crews around the world collected large amounts of fishing gear and plastic debris from the world’s oceans, storing it onboard the vessels until it could be responsibly offloaded and recycled. We join the IAGC in calling upon all offshore operators to support this movement.

Triple-E™

As an industry pioneer in environmental responsibility, Polarcus participates in the DNV-GL Environment, Energy and Efficiency (Triple-E™) voluntary rating initiative. Triple-E™ is a mechanism for ships to be certified, based on quantifiable verification of environmental performance. It also serves as a tool to help ship owners and operators benchmark and improve both energy efficiency and environmental performance.

Triple-E™ comprises of four levels, from level 4 to level 1, with level 1 being the highest. The key elements of the Triple-E™ rating initiative are:

- Ship Energy Efficiency Management Plan (SEEMP) - this is a plan unique to each vessel which sets out how energy savings can be made using the Energy Efficiency Operational Indicator (EEOI) as a monitoring tool and benchmark (to save energy and reduce GHG).
- EEOI - provides a mechanism to monitor, compare and reduce GHG emissions from ships in operation, and is an integral part of the SEEMP. EEOI = Mass (t) of CO2 emitted per km² of acquired seismic data.
- Verifiable emissions tracking and reporting - accurate measuring and monitoring of emissions is key to reducing them. Polarcus has a DNV-GL certified emissions reporting and tracking tool.

The active Polarcus fleet was re-awarded the Triple-E™ Level 1 rating in 2018 that is valid until October 2021.

Polarcus continues to be the only seismic vessel owner and operator in the world to have achieved this rating across its entire marine seismic acquisition fleet.

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Polarcus Sustainability Report 2019
CARING FOR PEOPLE

Polarcus employees underpin the performance and all-important culture of the company. As a key element of our social responsibility, Polarcus strives continuously to maintain and improve the health, safety, security and ongoing professional development of all employees.

Safety Leadership and Performance

For Polarcus, safety leadership and individual accountability is not a choice, but a requirement. Underpinned by the Polarcus Commitments and Polarcus Management System, all Polarcus employees, partners, suppliers and contractors have a role to play as leaders in safety and to contribute collectively to the overall safety culture which is visible throughout the company.

Polarcus leaders from all parts of the business demonstrate personal safety leadership by conducting frequent visits to all Polarcus offices and vessels to engage in safety-focused dialogue. With continuous performance improvement a strategic priority, raising awareness of potential workplace hazards, building capabilities to prevent such hazards and applying elements of behavioural safety to understand why people do the things they do, are important elements of the Polarcus continuous improvement cycle.

Polarcus Team Resource Management (PTRM)

The Polarcus behavioural safety programme, PTRM is an integral component of Polarcus operations and an important tool to enable continuous improvement, as well as addressing complacency. PTRM consists of six non-technical skill areas that can contribute to incidents: leadership, decision-making, communication, teamwork, situation awareness and managing stress & fatigue. These are human factors which refer to environmental and organizational job aspects, and which can influence behaviour at work and potentially impact health and safety. A simple manner to view human factors is to think about three aspects: the job, the individual and the organization, and how they impact health and safety-related behaviour.

To optimize the success of the PTRM program, Polarcus engages all employees, from the CEO to front-line employees, and extends the program to include contractors. Achieving changes in behavioural safety offshore requires engagement and acceptance by everyone involved in a Polarcus operation. Polarcus has an inclusive approach to safety leadership which begins at each project start-up meeting where dedicated time is prioritized for safety dialogues ahead of the project commencement. This engagement and interaction between all parties (clients, Polarcus employees and third-party contractors) is an important contributor to aligning safety priorities and safety culture, and to ensuring the team performs with full focus on safety from day one of the project.

Improving awareness and understanding of human factors, as well as non-technical skill areas, supports Polarcus’ belief that all incidents are preventable and that the company’s goal of zero harm can be achieved.
Polarus supports UN Sustainability Development Goal 3 'Good Health and Well-Being'; Goal 4 'Quality Education and Goal 5 'Gender Equality' to ensure that everyone involved in any of the company's global operations is kept safe and in good health, has the proper qualifications and support to reach their best potential, and can thrive in a positive work environment that is free from discrimination.
2019 safety performance

All incidents, injuries, near misses, non-conformances and improvement suggestions are raised and recorded within Insite, the Polarcus Environment, Health, Safety and Quality (EHSQ) reporting system. Reports are rated according to the International Association of Oil and Gas Producer’s (IOGP) risk matrix in order to assess actual and potential risk based on realistic assumptions.

Polarcus has a robust reporting culture in place company-wide in all departments both onshore and offshore. This is demonstrated through the solid reporting levels shown from 2016 to 2019.

Reporting levels of ‘Non-Conformance, Corrective Action and Preventative Action’ (NCCAPA) and ‘Improvement Suggestions’, both of which are critical to the Polarcus continuous improvement philosophy, were maintained in 2019.

Polarcus saw a reduction in absolute numbers of NCCAPA and Improvement Suggestion reporting from 2016 to 2017 due to a reduction in fleet activity and number of employees in the Company during that period. From 2017 to 2019, the reporting levels have improved consistently with the same number of vessels and employees involved in operations. This has culminated in a combined NCCAPA and Improvement Suggestion rate of 38 reports per person in 2019 demonstrating a high level of vigilance across the company.

With focus on preventing unplanned incidents and to further drive continuous improvement, Polarcus introduced an intervention target in 2019 which required 25% of all submitted reports to be based on action taken to intentionally improve a situation, activity or process, or to prevent something from happening or getting worse (ie that active intervention took place). The full year target was exceeded with 32% of all reports involving interventions.

Polarcus’ safety performance measured by traditional industry lagging safety indicators, was solid with the Total Recordable Case Frequency (TRCF) at 0.62 and the Lost Time Injury Frequency (LTIF) at 0.31 for 2019 full year.

First Aid Cases (FACs) and Near Misses (NMs) are important metrics that Polarcus uses as leading indicators for targeted safety campaigns. 2019 saw a 25% reduction in the number of FACs which marked a significant improvement. The NMs reported remained stable at 98 incidents across the organization in 2019.

Of the incidents reported in 2019, several themes were identified. Safety campaigns, communication and awareness efforts were then focused on the lessons learned from these incidents. These campaigns and communication efforts targeted all employees and contractors involved in Polarcus operations.

Hand safety management was an area of focus following two separate finger-related incidents involving contractor personnel which resulted in recordable injuries. Another identified area of focus was crane operations following a high potential incident which took place during a port call and yard stay respectively, also involving contractor personnel. While these incidents did not translate into significant injury or damage, they had the potential to do so. Hence these themes, as well as ongoing engagement and collaboration with contractors to improve safety performance across Polarcus operations, remain front and center.
2019 ‘Focus on Safety’ campaigns:

**ACTIVE MONITORING**
Active monitoring of the operational tasks carried out onboard Polarcus vessels through direct observation by peers. This initiative was rolled out to ensure the correct operational procedures are being applied accurately and to actively address the phenomenon of complacency.

**FOCUS ON DROPS**
Identify and eliminate dropped object hazards with the potential to cause injuries and fatalities. Throughout the oilfield services industry, over 60% of high potential incidents are related to dropped objects.

**5S’ HOUSEKEEPING**
A methodology to help a workplace remove items that are no longer needed (sort), organize the items to optimize efficiency and flow (straighten), clean the area in order to more easily identify problems (shine), implement colour coding and labels to stay consistent with other areas (standardize) and develop behaviours that keep the workplace organized over the long term (sustain). This was rolled out under the specific focus area of housekeeping.

**HAND SAFETY AWARENESS**
This was a campaign designed in response to a number of hand injuries encountered across the Polarcus fleet. The objective of this campaign was to remind our crews of the hazards relating to hand injuries and good practice in managing the risk and prevention.
Polarcus Principles

Solid safety performance in 2019 highlights that Polarcus is managing the challenges associated with complex seismic acquisition projects taking place in all corners of the globe.

To tackle these challenges effectively, Polarcus Principles were created in 2014 comprising a set of non-negotiable Polarcus requirements that all employees and contractors are expected to comply with at all times. These principles have been compiled in close cooperation with clients, based on industry best practice and lessons learned. Polarcus Principles are embedded across the organization and are closely aligned with many Polarcus clients’ non-negotiable safety rules.

Polarcus Principles incorporate and are based on the following components:

- Implementing industry best practices and lessons learned through the International Association of Oil & Gas Producers (IOGP) in accordance with ‘guidelines for working together in a contract environment’ (Report 423). Polarcus contributes to sharing such information from any significant incidents encountered through offshore and onshore operations.
- Identifying potential hazards and carrying out thorough risk assessments for every project and every region in which Polarcus operates.
- Implementing targeted health and safety initiatives consistent with international standards (e.g. Polarcus quarterly ‘Focus on Safety’ campaigns).
- Preventing and/or mitigating the health and environmental impacts of air emissions and discharges from Polarcus vessels.
- Providing and supporting company-wide EHSQ education, awareness and training.
- Holding regular employee-led EHSQ forums (e.g. Leadership Team, Green Protection Team and Field Manager Meetings) focused on items affecting the individual work locations and the company in general.
- Providing appropriate personal protective equipment (PPE) and;
- Enabling regular occupational health checks and access to general health care and appropriate access to emergency services for all employees.

Workplace Security

Security of Polarcus employees, work sites and operational assets is a responsibility that Polarcus takes extremely seriously. The Polarcus Commitment to Security is upheld via the use of the company’s risk management processes, including security hazard identification and security risk assessments prior to, and during, the execution of all seismic projects and business activities.

The global nature of Polarcus’ business means a range of potential security risks can stem from piracy, terrorism, organized crime, regional unrest, or the threat of activists attempting to disrupt business. To mitigate identified risks, Polarcus maintains an ongoing overview of any security issues affecting any of the regions in which the company operates or has plans to pursue business opportunities. Insights are gained via a range of external sources, including expert security advice provided by the ISOS-Control Risk joint venture and other security advisors, and internally through the many years of industry experience within the Polarcus leadership, operational and EHSQ teams.

Additional emphasis is placed on providing support and guidance to all Polarcus employees who undertake business travel, with a comprehensive travel monitoring program which includes a proactive journey-specific advisory function. In 2019, Polarcus’ included emergency response testing of onshore journey management as part of its continued efforts to raise awareness and ensure the ability to manage support of travelling employees in the event of an incident.

To best monitor the security aspects of Polarcus operational activities, along with the associated travel for onshore and offshore-based employees, Polarcus continuously monitors risk levels around the globe. For every project, a security risk assessment is carried out and, where necessary, additional detailed information is gathered and analyzed depending on the location of proposed projects and identified security risk.

International Ship and Port Facility Security (ISPS) regulations require the company to continuously evaluate risks and implement appropriate measures to mitigate them. Polarcus ISPS certification is maintained via annual audits carried out by DNV-GL.
Good Health & Wellbeing

Maintaining good health and wellbeing of all Polarcus employees is a fundamental pillar of the way Polarcus operates and delivers marine acquisition services responsibly. This is implemented through the Polarcus’ Commitment to Health and Safety which applies to every employee and contractor that comes to work at a Polarcus office, vessel or project location.

To ensure the continued provision of robust health support, advice and guidance, Polarcus maintains a strong relationship with its medical and security provider, International SOS (ISOS). The service provided by ISOS provides comprehensive global assistance on health, security and wellbeing. Polarcus employees onshore and offshore have access to a wealth of tools and resources, available through an online portal and a mobile application, which provides real-time advice and guidance relevant to any geography in which Polarcus is operating worldwide or where Polarcus employees may be travelling to or through.

Managing health and wellbeing offshore proactively, starts with the requirement for all employees to complete regular medical examinations to ensure they are in appropriate physical condition to work in an offshore environment. Once onboard Polarcus vessels, employees benefit from Polarcus’ designated DNV-GL Comfort Class which incorporates noise minimization throughout the vessel, relaxing and ergonomically designed cabins and recreational areas and gymnasium facilities for all crew to utilize. Polarcus rotates crew members across the fleet regularly, in line with seismic and maritime industry best practice.

All onshore employees are provided access to medical care and facilities according to the various locations in which Polarcus operates globally.

The task of engaging all Polarcus employees in health and wellbeing initiatives across all Polarcus offices and onboard all Polarcus vessels, is championed by Polarcus’ Green Protection Team (GPT). In addition to flying the flag for Polarcus’ Explore Green™ agenda, these employee-nominated and employee-led teams review monthly EHSQ statistics and performance, organize events and campaigns focused on environmental, health, safety, social and wellbeing, and work collaboratively to share ideas, initiatives and best practice.

During 2019 the GPTs led several successful campaigns including ‘Fit February’, a step counting challenge encouraging fitness and team collaboration to reach a collective Polarcus goal; ‘Action for April’, a company-wide sustainability initiative to raise awareness of the Polarcus-identified UN Sustainable Development Goals; and ‘Mindfulness in May’, a company-wide campaign focused on encouraging open conversation around emotional health, suicide prevention and stress management. Other initiatives included educational campaigns to promote awareness on topics such as breast and prostate cancer.
POLARCUS PEOPLE

EXCEEDED FIVE YEARS

62%

EXCEEDED TEN YEARS

11%

LOCATION SPLIT

Office 27%
Field 73%

GENDER SPLIT

Female 11%
Male 89%
Being Polarcus

Being Polarcus is the way we describe ‘who we are’, ‘what we do’ and ‘how we do things’. Underpinned by Polarcus Core Values and Commitments, it is Polarcus employees that cultivate the company’s unique corporate culture. At the end of 2019, more than 62% of Polarcus employees had contributed their time and skills to the company for five years or more, with 11% of employees having reached or exceeded a decade of employment with Polarcus.

Career progression, work environment, and professional development were identified as the three issues that matter most to Polarcus employees, via an employee survey conducted in 2018. These have remained priority areas of focus throughout 2019 and form the core of the company’s continued strategy to attract and retain Polarcus employees.

The Polarcus employee model

Polarcus is proud to be the only marine seismic acquisition company that employs both seismic and maritime crews directly. This is fundamental to delivering operational excellence and innovative geophysical services to Polarcus clients that have acknowledged the Polarcus ‘employee strategy’ as a key differentiator.

For Polarcus employees, this model offers a range of career opportunities with paths across and within both seismic and maritime disciplines. This strategy is complemented onshore with integrated technical and geophysical teams, working collaboratively with efficient and agile operational and support functions. Highlighting the loyalty and dedication of the experienced and diverse Polarcus teams from all corners of the world, employee turnover rates remain well below industry norms.

As the marine seismic industry emerges from a sustained market downturn, Polarcus continues to advocate the professional development and personal growth of all Polarcus employees. Wherever possible Polarcus promotes from within and continues to review and evolve the organization model both offshore and onshore to create opportunities for all employees. While the latest Polarcus geophysical innovations unlock new regions and technologies which enable Polarcus to Explore Smarter™, they also provide a range of career progression opportunities for Polarcus employees to learn and grow.

Maintaining open dialogue and communication with employees, as well as listening and responding to feedback is key to Polarcus’ efforts to retain its valued employees. In addition to their health and wellbeing remit, the GPTs play a key role in this and are recognized as being the voice of Polarcus employees. Underpinned by the tenets of Being Polarcus, the GPTs are empowered and encouraged to engage and interact with all employees on topics which can make a real difference. The GPTs provide a key link between employee groups at all levels across the organization and are an integral part of the Polarcus communication model.

A new decade, a new generation

In support of the philosophy to promote and develop from within, Polarcus has worked on the foundations of an exciting new leadership program during 2019. Focusing on the Polarcus 2023 strategy and mapping out the competencies and skills needed to deliver this, Polarcus is working to create a bespoke learning and development program to enhance the Polarcus employee model. This will upskill existing supervisors, managers and leaders, and equip all employees, with enhanced personal, people and organizational leadership skills – strengthening the Being Polarcus ethos to the benefit of all stakeholders.
BEST BUSINESS PRACTICE

By adopting and developing best practice across the company, Polarcus ensures that optimal mitigations to identified company risks are adopted and that clients are consistently provided with best in class service.

Governance Structure

As a company incorporated in The Cayman Islands, listed in Norway, headquartered in Dubai and with operations globally, Polarcus has established and maintains a governance structure that is fit for its size, operations and industry.

The Board of Directors sits at the apex of Polarcus’ governance framework with a mandate to provide leadership in setting the company’s long-term strategic direction, monitoring the company’s performance and ensuring the integrity of the company’s internal controls and management information system. To ensure adequate oversight and resource allocation to these functions, the Board has established two committees to oversee Audit and Risk, and Corporate Governance and Remuneration matters. These committees have clearly defined terms of reference to ensure the company’s activities in these respective areas is reviewed, on behalf of the Board of Directors. All recommendations made to the Board and/or to management, as a result of the committee meetings in 2019 have been adopted.

External validation is a critical part of Polarcus’ process to enable continuous improvement. The Polarcus Commitments are reviewed annually by the Chief Executive Officer (CEO) and by the Corporate Governance and Remuneration Committee. Each of the company’s procedures are also reviewed and updated annually and the performance of all parts of the business units is frequently assessed by independent and client auditors. By fostering a transparent approach to all audit requirements, Polarcus ensures that its Commitments and all elements of the Polarcus Management System are objectively and constructively reviewed and measured, allowing the company to effectively integrate improvement suggestions into its ongoing business performance.

Further information on the company’s corporate governance structure is contained in the company’s published 2019 Corporate Governance Report.

Company Risk Assessment

Polarcus maintains an assessment of company risks, reflecting matters which could have a material impact on any aspect of the business. Mitigating actions are recorded for each risk and additional steps are identified during each review to reduce the likelihood or severity of the risk. A member of the Polarcus executive management team is designated to ensure appropriate resources are allocated and that the organization is focused on addressing each identified risk.

Bi-annual formal reviews of the company risk assessment are conducted involving employees from its headquarters and all regional offices. The results of these reviews are presented to the Audit & Risk Committee of the Board of Directors and, on an annual basis, the Board reviews the key company risks with management.

Polarcus’ practice of obtaining input from its diverse employees and leadership team, led by the CEO and executive management team, along with regular reviews under the Board’s supervision represents a strong and sustainable process for managing company risks.
The global nature of Polarcus’ business requires a strong focus on business ethics and anticorruption. To ensure best business practices are maintained across the company and to elevate Polarcus’ commitment to sustainability, Polarcus supports UN Sustainability Goal 16 ‘Peace, Justice and Strong Institutions’ and Goal 17 ‘Partnership for the Goals’.
Continuous Improvement

The Polarcus 2023 strategy is “to create superior value for our stakeholders through responsible marine acquisition services and geophysical solutions driven by innovation and industry collaboration”.

The bespoke Polarcus Management System is a critical element of how operations and assets are managed, incorporating the highest levels of quality and safety into all the company’s activities allowing Polarcus to run its global business safely, efficiently and responsibly.

By defining best practice and framing how risk is assessed, the Polarcus Management System also assists in identifying and prioritizing improvement opportunities in all aspects of Polarcus’ business - from personal safety and operational integrity through to efficient and effective use of resources. It enables the continued measurement and improvement of performance year-on-year and is a critical vehicle for the effective implementation of the Polarcus 2023 strategy.

Data recorded to measure performance and to ensure Polarcus meets, or exceeds, both internal and external stakeholder expectations includes:

- Safety statistics
- Environmental data
- Production data
- Technical downtime measurements
- Financial performance
- Efficiency metrics
- Customer satisfaction feedback

Polarcus engages directly and proactively with clients in post-project reviews and ongoing relationship management activities to obtain constructive feedback on its services. This allows Polarcus to identify opportunities for improvement and a more informed understanding of clients’ needs and expectations to develop its business offering accordingly.

Polarcus is a governing member of the International Association of Geophysical Contractors (IAGC). Through the IAGC’s Global Health, Safety, Security and Environment (HSSE) Committee, Polarcus identifies and promotes opportunities for best practice in offshore seismic operations and regularly shares learnings from operational challenges encountered.

Business Ethics

Polarcus operates in several areas around the world where concerns exist regarding the standard of ethical commercial behavior. Polarcus remains committed to ensuring employees possess the appropriate training and awareness so that the risk of becoming involved in any inappropriate business practice, such as facilitating payments, is comprehensively mitigated.

Polarcus deals with over 800 global suppliers and expects these suppliers to maintain the same high standards of business practice that are set for Polarcus employees. To maintain these standards, Polarcus provides training and support for all operational managers, senior field crew, shore representatives and key suppliers. Any new supplier to Polarcus is issued the ‘Polarcus Standard Anti-Corruption Terms’ as part of the prequalification process. Suppliers are also screened using IntegraWatch® Compliance Screening, a third-party service designed to provide first line defense against potential compliance risks. Additionally, to evaluate exposure to such risks and plan ahead, Polarcus ensures that all local logistics agents fully understand the required ethical standards in advance of a Polarcus vessel arriving in port, and appreciate that a failure to perform in accordance with such standards will lead to termination of the business relationship with Polarcus.

From 2017 to 2019, Polarcus has been a member of the World Economic Forum (WEF) whose mission is to improve the state of the world. WEF established the Partnering Against Corruption Initiative (PACI) which has become a leading business voice on anti-corruption and transparency, focused on implementing a global anti-corruption agenda and providing a platform for rebuilding trust and integrity between public and private stakeholders. Polarcus has been proud to support PACI to share best practices at CEO and senior executive level, and to champion efforts to eliminate global corruption. Outside WEF, in 2019 Polarcus continued to participate in local initiatives that raise awareness of the harm caused by bribery and corruption.

Polarcus maintains an anti-corruption procedure which sets out detailed anti-corruption guidelines and training relating to contractual arrangements, facilitating payments, gifts and entertainment. This procedure is designed to ensure compliance with anti-corruption laws worldwide by Polarcus employees and all Polarcus business partners.

Annual refresher sessions, supplemented by targeted training and mandatory guideline reviews, are conducted with employees in all the company’s offices in order to ensure awareness of ethical risks is maintained. No incidents or non-conformance occurred during 2019 in relation to Polarcus’ Commitment to Business Ethics and Avoiding Conflicts of Interest.

Polarcus supports a culture of transparency and encourages employees to raise concerns on ethical behavior via ‘whistle-blower’ communication. The Corporate Governance and Remuneration Committee tests the whistle-blower procedure annually.
Cyber Security

Maintaining robust controls to mitigate cyber security risks is one of Polarcus’ top priorities. The Polarcus IT security strategy to mitigate these risks is anchored around an integrated people, process and technology approach.

Polarcus IT security successfully blocks daily threats through multiple layers of technology and processes which are in place to protect Polarcus systems and data. However, the effectiveness of these actions is highly dependent on the IT security behavior of Polarcus employees and other parties who have access to Polarcus systems and data. The continued education, training and awareness of all Polarcus employees therefore forms a critical part of Polarcus’ IT security strategy.

To combat continuous and evolving cyber security threats, Polarcus placed significant focus and resources during 2019 on developing all employee and sub-contractor awareness around cyber security. This included the introduction of additional IT tools to improve the prevention and detection of cyber security attacks, and an ongoing program of employee awareness.

An internal dashboard was created to monitor and report progress on IT security awareness and training, which included reviewing performance by departments internally and comparing Polarcus’ level of IT awareness to other industry participants. For 2020 and beyond, an IT risk score metric has been developed to engage and focus the attention of every Polarcus employee on this critical business risk.

No cyber security related incidents were recorded during 2019.
POLARCUS SUSTAINABILITY
FOR THE FUTURE

Polarcus was founded on a long-term, proactive vision; to make a positive impact in an industry that is at the heart of the climate change debate, and to change the conventional dynamic of operations through strong commitments and smart solutions. In recent years, stakeholders have challenged the progress of sustainability initiatives by the oilfield services industry and in particular have scrutinized emissions in all forms. While the global conversation around energy continues to evolve, it is anchored in sustainability.

Environmental sustainability has been a priority for Polarcus for over a decade, and as industry peers react to new environmental demands and regulatory requirements, Polarcus welcomes this urgent pivot of perspective. Sustainability, beyond the environmental agenda, is fundamental to Polarcus. Educating all Polarcus stakeholders to take ownership, to demonstrate conscious accountability and to work towards common goals underpins the holistic approach Polarcus has adopted to achieve a sustainable future.

In striving for optimal sustainability in the future, Polarcus has identified seven of the UN Sustainable Development Goals that reach across the Polarcus organization, and are explained in this 2019 Sustainability Report.

Considering the following key questions align with the identified UN Sustainable Development Goals will help shape continuous improvements in the sustainability of Polarcus and our contribution to the sustainable development of the marine seismic acquisition industry. These questions define our key focus areas going forward in addition to those outlined earlier in this report.
Environmental developments
How can Polarcus work with clients and peers to embed emissions monitoring and reduction initiatives more effectively across the marine seismic industry?

What are the technology and operational considerations to further mitigate acoustic emissions?

Social considerations
How can Polarcus contribute more to mental health awareness in Polarcus and across the marine seismic industry?

Consider the concept of Polarcus scholarships and sharing of best practice trainee programs with peers in the marine seismic industry?

How can we better address the imbalance in gender equality in Polarcus operations and across the marine seismic industry?

Governance contribution
How can Polarcus develop and share best practices related to business ethics across the marine seismic industry and all Polarcus suppliers?

How can Polarcus gain alignment in the marine seismic industry on the identified UN Sustainable Development Goals through industry bodies and better sharing of information?
CERTIFICATIONS AND ACCREDITATIONS

ISO 9001 and 14001 consist of three dimensions of sustainable development - economic, social and environmental. ISO 14001 is the international standard that stipulates requirements for an effective environmental management system (EMS). ISO 9001 is a standard that sets out the requirements for a quality management system (QMS).

In 2018, Polarcus upgraded to the new environmental standard ISO 14001:2015 and quality standard ISO 9001:2015, making us one of the first seismic companies to achieve this accreditation. The newly released ISO 45001 standard enables organizations to provide safe and healthy workplaces by preventing work-related injuries, illnesses and fatalities and by proactively improving our Occupational Health & Safety (OH&S) performance. Polarcus aims to remain at the forefront of the industry in this regard and, in 2020, will replace our current OH&S management system standard OHSAS 18001 with the ISO 45001 standard.
## GRI Index

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Comment</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-1</td>
<td>Name of the organization</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>102-2</td>
<td>Activities, brands, products, and services</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>102-3</td>
<td>Location of headquarters</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>102-4</td>
<td>Location of operations</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>102-5</td>
<td>Ownership and legal form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-6</td>
<td>Markets served</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>102-7</td>
<td>Scale of the organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-8</td>
<td>Information on employees and other workers</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>102-9</td>
<td>Supply chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-10</td>
<td>Significant changes to the organization and its supply chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-11</td>
<td>Precautionary Principle or approach</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>102-12</td>
<td>External initiatives</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>102-13</td>
<td>Membership of associations</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>102-14</td>
<td>Statement from senior decision-maker</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>102-15</td>
<td>Key impacts, risks, and opportunities</td>
<td></td>
<td>10-27</td>
</tr>
<tr>
<td>102-16</td>
<td>Values, principles, standards, and norms of behavior</td>
<td></td>
<td>6, 20, 23, 26</td>
</tr>
<tr>
<td>102-17</td>
<td>Mechanisms for advice and concerns about ethics</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>102-18</td>
<td>Governance structure</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>102-40</td>
<td>List of stakeholder groups</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>102-41</td>
<td>Collective bargaining agreements</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>102-42</td>
<td>Identifying and selecting stakeholders</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>102-43</td>
<td>Approach to stakeholder engagement</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>102-44</td>
<td>Key topics and concerns raised</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>102-45</td>
<td>Entities included in the consolidated financial statements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-46</td>
<td>Defining report content and topic Boundaries</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>102-47</td>
<td>List of material topics</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>102-48</td>
<td>Restatements of information</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>102-49</td>
<td>Changes in reporting</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>102-50</td>
<td>Reporting period</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>102-51</td>
<td>Date of most recent report</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>102-52</td>
<td>Reporting cycle</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>102-53</td>
<td>Contact point for questions regarding the report</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>102-54</td>
<td>Claims of reporting in accordance with the GRI Standards</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>102-55</td>
<td>GRI content index</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>204-1</td>
<td>Proportion of spending on local suppliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>205-1</td>
<td>Operations assessed for risks related to corruption</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>205-2</td>
<td>Communication and training about anti-corruption policies and procedures</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>305-1</td>
<td>Direct (Scope 1) GHG emissions</td>
<td></td>
<td>12-14</td>
</tr>
<tr>
<td>305-5</td>
<td>Reduction of GHG emissions</td>
<td></td>
<td>12-14</td>
</tr>
<tr>
<td>305-7</td>
<td>Nitrogen oxides (NO(_2)), sulfur oxides (SO(_2)), and other significant air emissions</td>
<td>12-13</td>
<td></td>
</tr>
<tr>
<td>403-2</td>
<td>Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>