

Viability performance

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Quick overview

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

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

We have an integrated approach to our reporting, and our Viability performance should be seen in context with the other parts of Hydro's Annual Report 2018.

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

Viability - The Hydro Way

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

The Hydro Way explains how we run our business through:

- Our purpose
- Our values
- Our operating model

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

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

In order to ensure a uniform high standard, Hydro's constituting documents and global directives lay down requirements for our operations, see page 135.

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

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



Our reporting approach

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

- Energy and climate change
- Resource management
- Integrity, human rights and community impact
- Organization and work environment
- Innovation

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

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

The information has been reviewed by Hydro's Corporate Management Board, which has also approved this annual report. The board of directors has approved the complete Board of Directors' report including the country-by-country report and the UK Modern Slavery Act transparency statement. Read more about our reporting principles and materiality process on page 230.

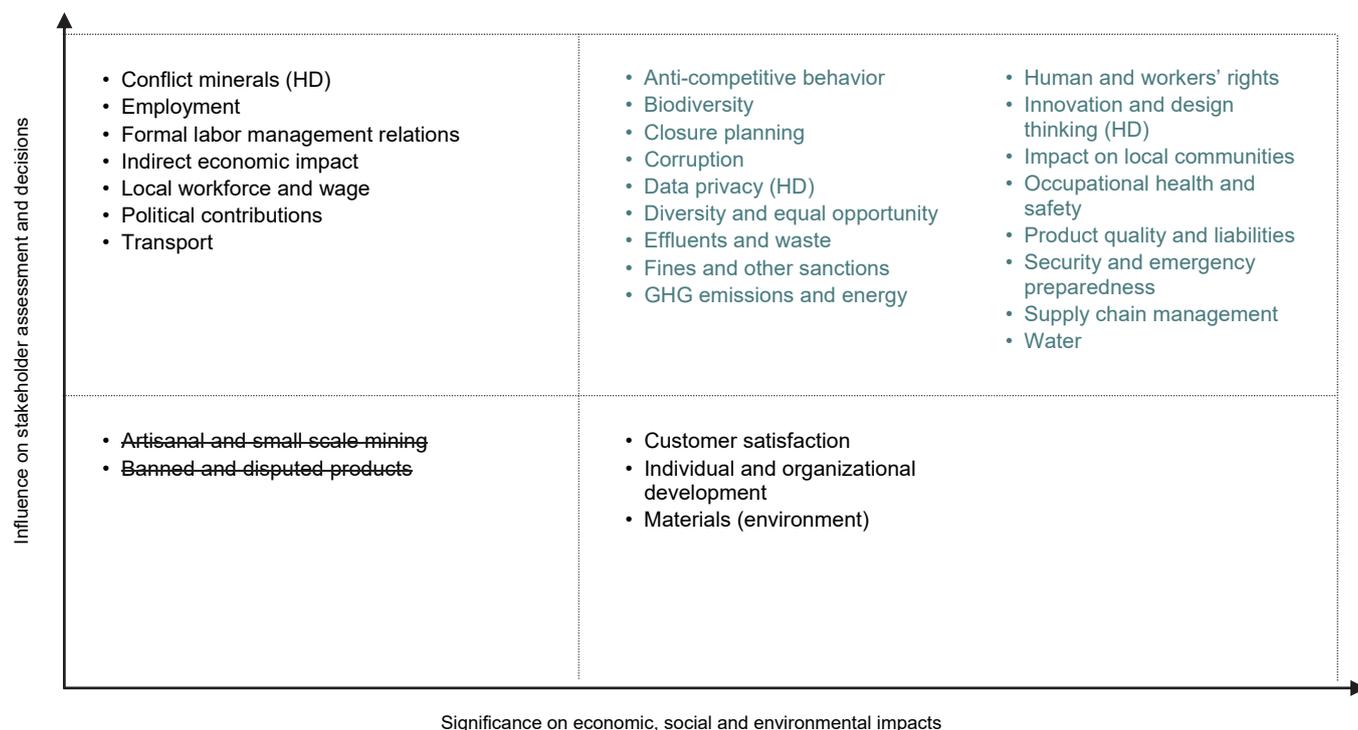
The Viability performance section should be read in context with the other parts of the annual report, in particular:

- Letter to shareholders on page 8
- Board of Directors' report on page 12
- Business description on page 33 including strategic targets and business area specific issues related to technology and innovation, environment and society
- The Alunorte situation on page 71
- Risk review on page 120
- Corporate governance on page 134

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

Hydro's materiality analysis 2018

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



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

The main changes compared to 2017 are:

- The most material topics "Freedom of association & collective bargaining", "Human rights assessment", "Indigenous rights" and the material topic "Resettlement" have been merged and renamed "Human and workers' rights"
- The topic "Fines and other sanctions" has become most material following the Alunorte situation
- "Transport" and "Conflict minerals" that earlier were classified as not material, have become material topics

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

Energy and climate change

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



Climate change

Hydro's ambition is to be carbon-neutral in a life-cycle perspective by 2020. Carbon neutrality can be defined in many ways, and our definition is the balance between the direct and indirect emissions from our own operations, and the savings of applying our metal in the use phase.

By taking the life-cycle perspective in our production, we aim to reduce total GHG emissions globally through our activities.

Hydro's climate strategy is an integral part of our overall business strategy, aiming at driving improvements and development within the company. Consequences to the climate strategy is also a criterion for all significant investment decisions. The strategy includes reducing the environmental impact of our operations as well as taking advantage of business opportunities by enabling our customers to do the same. While some production plants or products might have a higher carbon footprint than others, the overall company balance (the difference between emissions and benefits) should be zero or negative by 2020.

Hydro's prognosis for GHG emissions from 2017 showed an increase towards 2020 as a result of expected increase in production of alumina and primary aluminium from 2018 and onwards. The current reduced production at Alunorte from February 2018 has significantly reduced Hydro's GHG emissions in 2018, resulting in Hydro being carbon neutral in 2018 if considering scope 1 and scope 2 emissions only. If considering scope 3 emissions from purchased alumina due to the supply deficit, Hydro is not carbon neutral in 2018. Hydro is, however, still on track towards being carbon neutral in a life-cycle perspective in 2020. This will be achieved by:

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

Carbon neutrality in 2020 will, however, require that we succeed in increasing our Norwegian capacity according to plan, and that we are able to increase our recycling of post-consumer scrap. With the increase of GHG emissions from Extruded Solutions, it is uncertain whether their share of post-consumer scrap is sufficient to compensate. Our carbon neutrality is also sensitive to our penetration into the automotive market. The planned fuel switch project at Alunorte is not included in the forecast by 2020 and will, if realized, further improve Hydro's carbon balance.

For more information about Hydro's climate model, see <https://hydro.com/globalassets/1-english/our-future/environment/Hydroclimatemodel.pdf>

In 2018, Hydro concluded a review of its climate-related risks, including physical, technological, commercial, legal and reputational risk. The review forms the basis for scenario analyses and an update of the climate strategy. Hydro is a signatory to the Task Force on Climate-Related Financial Disclosures (TCFD). See page 267 for more information.

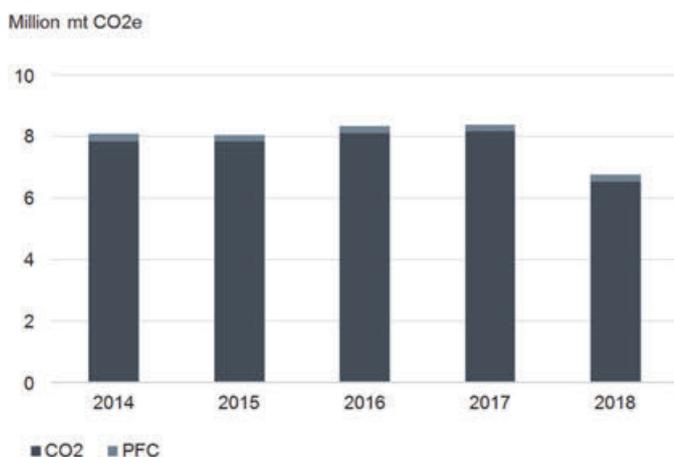
Using viable energy sources

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

In order to ensure continued supply of renewable power to Hydro's operations in Norway after 2020, Hydro has entered into four long-term power sourcing contracts. The total energy contracted in 2018 for the years 2021 to 2030 is 2.2 TWh. For more information please see Energy in the Business description section in this document.

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

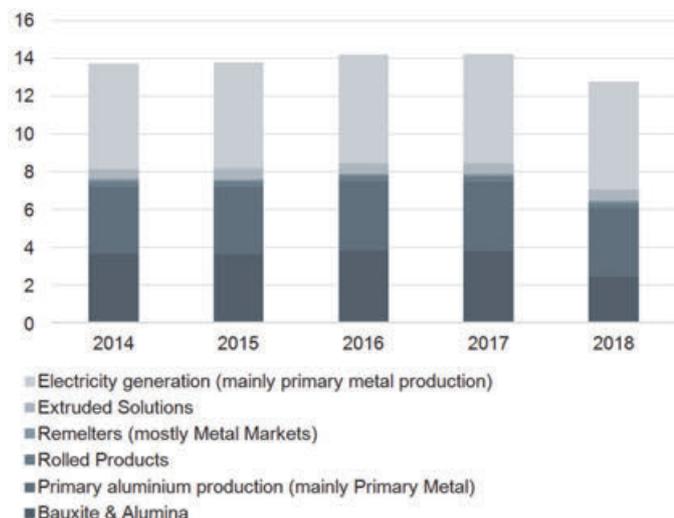
Direct greenhouse gas emissions from Hydro's consolidated activities



Emissions in 2018 decreased due to the embargo at Alunorte, and curtailment at Albras and Paragominas.

Greenhouse gas emissions from Hydro's ownership equity

Million metric tons CO₂e



Emissions in 2018 decreased due to the embargo at Alunorte, and curtailment at Albras and Paragominas.

Reducing energy consumption and emissions in production

Energy efficiency is an important part of Hydro's ongoing efforts to reduce costs and CO₂ emissions. Our Alunorte alumina refinery in Brazil is among the most energy-efficient refineries in the world. A technical concept for the replacement of part of our fuel oil consumption at Alunorte to more climate and cost-efficient natural gas is under development.

Average electricity consumption at our consolidated smelters is 13.9 kWh per kilogram primary aluminium produced, just below the global average of about 14 kWh. The Karmøy technology pilot is currently testing Hydro's next generation smelter technology with potential electricity reductions of 10-14 percent, see section Innovation and design thinking, page 99. The Karmøy technology pilot is testing this technology on an industrial scale.

Mid-term strategic goals: Energy and climate change

	Ambitions	Medium-term target	Timeframe	2019 target	2018 target	2018 progress	Status
<i>Better</i>	Extend technology lead with Karmøy technology pilot	Full ramp-up	Q2 2018			Jun 27, 2018	●
<i>Bigger</i>	Increase nominal automotive Body-in-White capacity	200,000 mt/yr	2017	200,000 mt/yr ¹⁾	200,000 mt/yr	Ramping up, qualifications ongoing	●
	Complete ramp-up of UBC recycling line	>40,000 mt/yr	2017	Ramp-up completed ¹⁾	Ramp-up completed	Delayed to Q4 2019	●
	Deliver additional hydropower production volumes through upgrades/sustaining investments	~ 0.1 TWh	2020	Continuous progress	Continuous progress	80 percent	●
<i>Greener</i>	Become carbon-neutral from a life-cycle perspective	Zero	2020	Establish climate strategy towards 2030	Review climate risk analysis	On track ³⁾	●
	Deliver on reforestation ambition	1:1	Continuous	1:1	1:1	On track	●
	Deliver on reforestation ambition	Eliminate historical rehabilitation gap	2020		Continuous process	Completed, historical gap closed	●
	Increase recycling of post-consumer scrap ²⁾	>250,000 mt/yr	2020	195,000 mt/yr ⁴⁾	155,000 mt/yr	148,000 mt/yr	●
	Continuously reduced specific GHG emissions/mt from electrolysis	EU benchmark	Long-term	1.57 mt CO ₂ e/mt aluminium	1.57 mt CO ₂ e/mt aluminium	1.60 mt CO ₂ e/mt aluminium	●

1) 2017 target not met, current target updated

2) Includes Hydro's share of recycling in Alunorf

3) From 2018 the target covers two hydrological seasons. This revised definition takes into account the nature of the mining cycle, and the time lag is necessary to ensure quality rehabilitation to restore biodiversity.

4) Original target of 250,000 mt/yr will not be met by 2020

Green light: Ambition on track and on target; Amber light: Ambition behind plan, but on target; Red light: Ambition might not meet the medium-term target

Reducing CO2 emissions through the use of our products

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

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

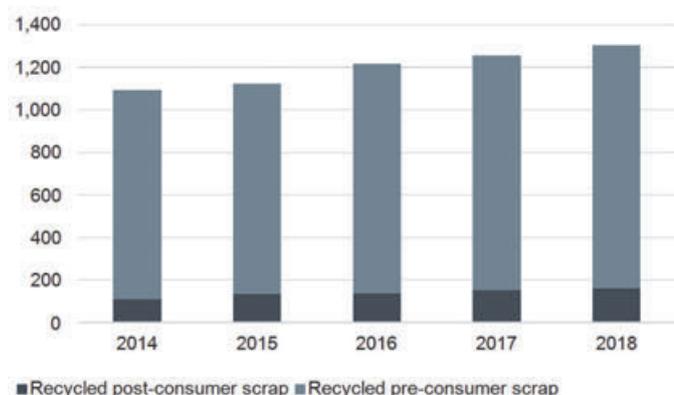
Increasing recycling of aluminium

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

Hydro is a large remelter and recycler of aluminium. We remelt process scrap from our own production and from other companies, as well as post-consumer scrap from the market. We are increasing our capacity to process post-consumer scrap by a total of 80,000 metric tonnes, through two projects, one in Clervaux, Luxembourg, and the other by a used beverage can line in Neuss, Germany. Finalization of the ramp-up in Neuss has been further delayed to the end of 2019.

Recycling

Thousand mt



We have developed processes to combine clean scrap with post-consumer scrap, and we are investing in existing remelters to increase our post-consumer scrap capacity by up to 20 percent. We have just finalized an investment in our plant in Lucé, France. An investment in our remelter in Azuqueca, Spain, is planned for commissioning in early 2020.

Hydro's patented technology in scrap shredding and sorting is under further development, making it possible to produce high-quality extrusion and sheet ingot from post-consumer building and automotive scrap. Our 75R product line with a guaranteed minimum of 75 percent post-consumer scrap, provides the lowest carbon footprint in the aluminium industry and is competing with PVC and even wood.

To further develop the sorting process of aluminium scrap into alloys, we installed a pilot line in the R&D center in Bonn, Germany, in 2017. We are working on projects to industrialize the technology for application towards automotive and other relevant materials.

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

Resource management

Hydro's bauxite mining and alumina refining activities in Pará in Brazil include open pit mining and the handling of significant amounts of tailings and bauxite residue, the latter also known as red mud. Preserving biodiversity is important related to Hydro's activities in Pará and to the water reservoirs for our hydropower production in Norway, please see section Operations – Energy on page 64. Hydro has primary aluminium production in Australia, Brazil, Canada, Germany, Norway, Qatar and Slovakia.

For information related to the Alunorte situation, see the separate section in this report.



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

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

A new environment strategy, including legacy management, is under development.

Ecosystems and biodiversity

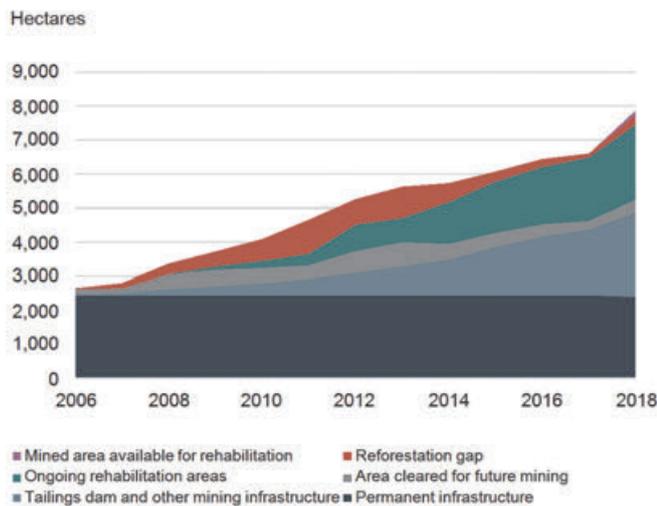


When developing new projects, we perform an environmental risk analysis as part of our impact assessment, following internationally recognized guidelines (e.g. IFC) and identify mitigating actions that will facilitate our ambition of achieving no net loss of biodiversity. This is an area under development internationally, and we participate

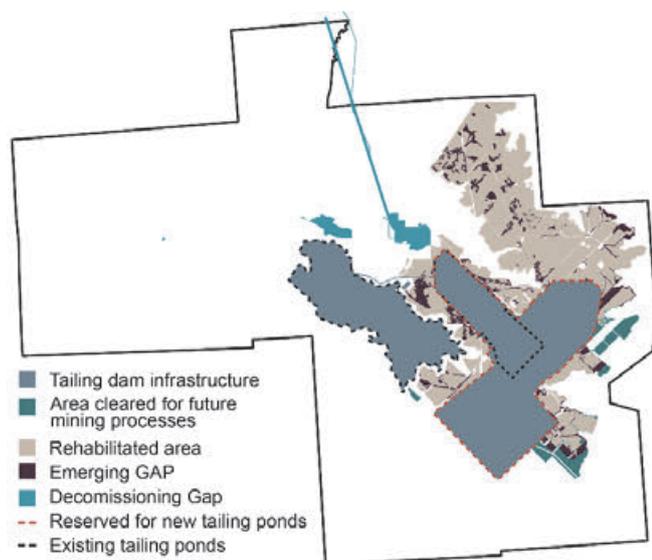
in the Cross Sector Biodiversity Initiative (CSBI), which is a joint effort between ICMM (the mining industry), IPIECA (the petroleum industry) and the Equator Principles Association.

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

Land use and rehabilitation - Paragominas



The emerging reforestation gap is due to infrastructure areas made available in 2018 for rehabilitation, as well as failed areas of historical rehabilitation.



The 2020 target of closing the historical rehabilitation gap inherited from the former operator was achieved in 2018. See

note E6.2 to the Environmental statements for further information.

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

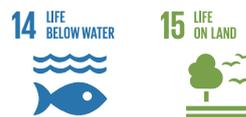
To increase our knowledge and secure a science-based approach to rehabilitation, the Biodiversity Research Consortium Brazil-Norway (BRC) was established in 2013, learn more about our partnerships on page 92.

Since 2013, Hydro has used the nucleation method in Paragominas. Topsoil is unevenly distributed to simulate natural landscape and trap rainwater. Piles of cut wood are distributed, creating shelters for animals and improving growing conditions for some plant species. The ambition is to establish a forest system of the same structure that is typical of the forest in the area and to secure as much biodiversity as possible. The method has been approved for testing in MRN and Paragominas by the relevant environmental authorities and is showing encouraging results.

All of our hydropower reservoirs are located within or in close proximity to national parks and other protected areas in mountainous regions in southern Norway, including Hardangervidda and Jotunheimen. We strive to minimize the potential environmental impacts associated with Hydro's operations including changes in aquatic and terrestrial habitats along the waterways and impact on recreation and tourism. See section Operations – Energy on page 64 for more information.

Water

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



Hydro uses the WBCSD global water tool to perform an annual review of water withdrawal from water-stressed areas. The mapping of Hydro's sites in 2018 showed that 0.3 percent of our overall fresh-water input came from water-stressed areas, with regard to annual renewable water supply (according to the definition used by WBCSD). Qatalum in Qatar relies on public water supply produced by desalination. Seawater is used for wet cooling towers at the power plant as well as for wet scrubbers at the potline fume treatment plants.

In 2017, Hydro developed a basic water risk analysis tool, covering water use and discharge, to be applied across key operations. Preliminary findings supported the results of the WBCSD global water tool - operating in water-stressed areas is not a material risk for Hydro's key operations. Instead, the more material risks are linked to the management of excess water and the quality of the external bodies into which Hydro discharges process water. The previous water-related target, to reduce water use in water-stressed areas, has thus been set aside.

Our alumina refinery Alunorte in Brazil obtains an important part of its water supply through the bauxite slurry that is transported from Paragominas by pipeline. Paragominas' and Alunorte's water use is close to their current regulatory limits. To learn more, see note E2.3 to the environmental statements.

Based on new hydrological studies of the Parariquara river, Paragominas' water extraction permits were revised in 2018. However, water collection can still be an issue if a new third-party user requests water extraction from the same watershed. If so, a new license will be needed for an additional extraction point.

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

For more information about the impact of our water reservoirs related to hydropower production, please see section Operations – Energy on page 64.

Mid-term strategic goals Resource management

	Ambitions	Medium-term target	Timeframe	2019 Target	2018 Target	2018 progress	Status
<i>Better</i>	Best available technology or similar implemented for treatment, storage and use of bauxite residue	New press filters in full operation	2019	Ramp-up of press-filters completed	Ramp-up of press-filters completed	Ramp-up behind schedule due to Alunorte embargo	●
	Reduced waste to landfill	60 percent reduction compared to a 2010 baseline ¹⁾	2020	Waste management plans for key streams developed	Fully achieve 2017 target and extend to cover Extruded Solutions	Development of waste management plans behind schedule	●
<i>Bigger</i>							
<i>Greener</i>	Deliver on reforestation ambition	1:1 ²⁾	Continuous	1:1	1:1	On track	●
	Deliver on reforestation ambition	Eliminate historical rehabilitation gap	2020		Approach target	Target achieved	●

1) Excluding tailings and bauxite residue. It also excludes construction and demolition waste.
 2) From 2018 the target covers two hydrological seasons. The revised definition takes into account the nature of the mining cycle, and the time lag necessary to ensure quality rehabilitation to restore biodiversity.

Green light: Ambition on track and on target; *Amber light:* Ambition behind plan, but on target; *Red light:* Ambition might not meet the medium-term target

Waste and efficient resource use



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

Tailings and bauxite residue

Tailings from bauxite extraction consist of mineral rejects from the extraction process mixed with water and flocculants. The tailings at Paragominas are stored in dedicated tailings dams, where the particles settle. Run-off water is collected in a separate water pond and reused. The

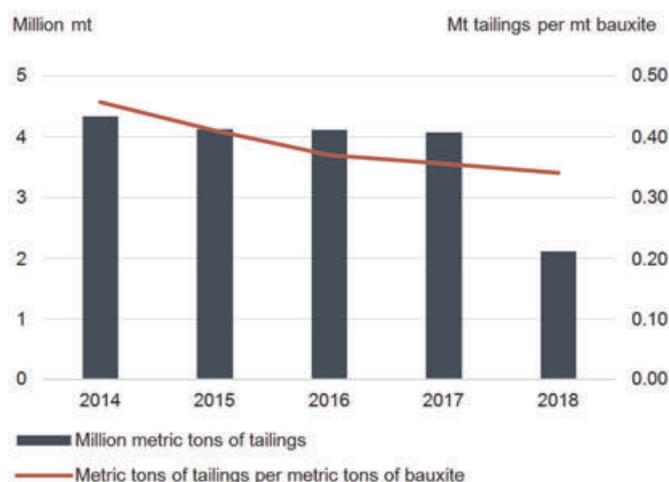
water pond prevents overflow to the river during heavy precipitation. The run-off water is monitored, and the water quality meets the requirements set by the authorities.

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

Bauxite residue, also known as red mud, is a by-product of the alumina refining process. Its disposal is challenging due to large volumes and the alkaline nature of the liquid component of the residue. The residue is washed with water to lower the alkalinity and to recover caustic soda for reuse.

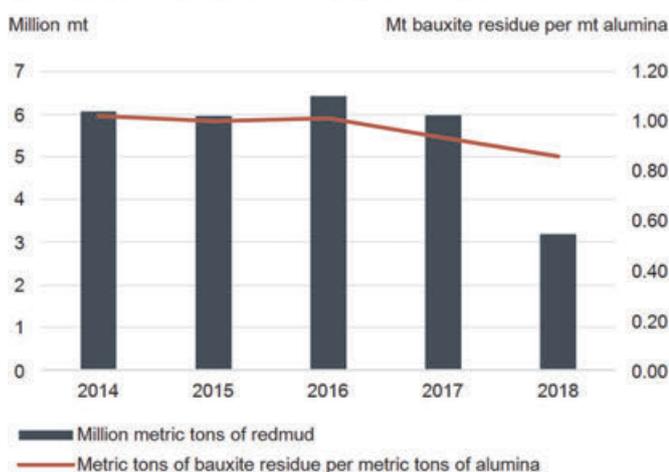
Hydro uses an enhanced dry stacking technology for disposing of bauxite residue which allows for residue storage at steeper slopes, reducing the disposal area requirements. This reduces the relative environmental footprint. The new bauxite residue deposit area at Alunorte includes more advanced press filters. These are capable of reducing the residue moisture content to 22 percent, down from 36 percent achieved with the previous drum filters technology.

Tailings from bauxite production



Tailings production decreased significantly in 2018 due to the Paragominas curtailment.

Bauxite residue from alumina production



Bauxite residue production decreased significantly in 2018 due to the Alunorte embargo.

The dams and deposits are frequently inspected by Hydro and Brazilian authorities, and are also subject to inspection by e.g. Norwegian Geotechnical Institute (NGI) and Geomecanica. The last NGI visit to Paragominas and Alunorte took place in 2016 and resulted in an action plan to secure the long-term viability of the tailings dams and bauxite residue storage areas. Following Vale’s Brumadinho accident in Brazil in January 2019, we are reviewing our tailings management system to ensure we can continue to

operate safely. The tailings dams at Paragominas are built using mainly downstream elevation which provide high structural integrity and safety. At one dam, however, there is one section using centerline elevation. This section is part of the top elevation which is one meter high. The material stored in our dams is also of a much higher final solids content (55-60 percent). Hydro is closely monitoring and analyzing the impact on the industry, including potential regulatory, political and societal implications on the back of the Brumadinho incident. Safe operations in compliance with regulatory requirements is crucial for Hydro. The Paragominas dams are stable and regularly monitored and audited by external experts. The dams meet all parameters of current environmental and mining legislation.

Hydro is also a 5 percent shareholder in Mineração Rio do Norte (MRN)¹², where the tailings disposal process is designed to allow tailings to achieve a final solids content similar to that of Paragominas. MRN is the operator of the mine and is responsible for the management of its tailings system. Hydro works with MRN and the other shareholders through the board of directors and relevant technical committees to require the safe operation of MRN’s tailings ponds in accordance with applicable laws and standards.

Hydro participates in international collaboration projects investigating possibilities to use bauxite residue as a resource. See the section Innovation and Design Thinking later in this report.

For more information about the Alunorte situation, see the corresponding section earlier in this report.

Other waste

Hydro’s ambition is to reduce land-filling of total waste – excluding tailings and bauxite residue – by 60 percent within 2020 from a 2010 baseline. See note E5.3 to the environmental statements for further information.

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

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

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

Qatalum delivers all first-cut SPL, which is the most energy-rich and contaminated part of the SPL, to its neighbor Qatar Steel, which uses it in production. In addition, Qatalum has

¹² Hydro has a five percent ownership interest and off-take agreements with Vale for a further 40 percent of the volume produced by MRN.

developed in cooperation with local cement plants a solution for co-processing of second-cut SPL.

Albras has a significant stock of SPL. This is being reduced according to the annual plan and target, and being delivered to the cement industry in Brazil. These agreements are examples of efficient resource use that is sound for the environment by substituting fuel or raw materials while reducing landfill and saving landfill costs.

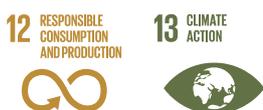
Proper handling of SPL and other waste is a part of the planned rehabilitation work at Hydro's former aluminium plant in Kurri Kurri, Australia, where production ended in 2012.

Dross is a mixture of metallic aluminium, alloy components and metal oxides that is formed on the surface of liquid aluminium. Hydro's casthouses have treatment facilities to recover as much aluminium as possible from hot dross. The residual dross is sent to recover aluminium and reduce total waste. Several projects are in the pipeline that will reduce waste-to-landfill medium to long-term.

Following a mass balance of mercury at Alunorte in Brazil, which was concluded in 2017, Hydro decided to install four mercury condensers on the digester lines. The first condenser was installed in 2018 as a pilot and, based on the technical performance, the remaining three will be installed and commissioned in 2020.

Product stewardship

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

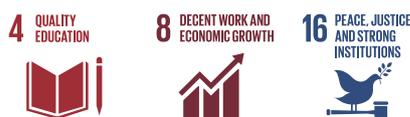


Over the past two decades, Hydro and other aluminium companies have developed a pan-European network of national initiatives to promote and recycle aluminium packaging. Many of these national activities are emphasizing education and have developed projects with primary and secondary schools and universities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

Hydro is an active member of the Aluminium Stewardship Initiative and has started certification of its value chain, see page 265.

Integrity, human rights and community impact

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



Our compliance system shall ensure that all persons acting on behalf of Hydro comply with applicable laws and regulations and with the requirements adopted by Hydro.

Some of the measures we pursue to ensure integrity and responsible behavior include:

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

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

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

The construction of new plants, acquisitions and divestments as well as the closure of capacity are particularly important in respect to community impact. Hydro has a long tradition of responsible restructuring.

As a global company, we shall act in accordance with the applicable laws and regulations of the countries in which we operate. We interact with a variety of stakeholders, including our customers, competitors, suppliers, business partners, representatives, authorities and local communities, and we are committed to interact with all in an ethical and transparent manner, and strive to demonstrate integrity in everything we do.

We also systematically address other corporate responsibility issues in activities relating to business development, investment programs and project execution.

Mid-term strategic goals: Integrity, human rights and community impact

	Ambitions	Medium-term target	Timeframe	2019 Target	2018 Target	2018 progress	Status
<i>Better</i>	Maintain zero tolerance on corruption	No instance of corruption	Long-term	No instance of corruption	No instance of corruption	One registered instance of corruption	●
					Revise Hydro's Code of Conduct	Completed	●
				Roll-out of revised Code of Conduct, including updated guidance documents within key topics	Finalization and full roll out of revised Hydro Integrity Program	Redefined concept, now consisting of several components partly rolled-out in 2018	●
<i>Bigger</i>							
<i>Greener</i>	Making a positive difference	Contribute to quality education and capacity building for 500.000	2030	Implement reporting methodology to track progress	Develop and test reporting system	On track	●
		Supplier development within HSE and human right issues	Long-term	Develop and test new solution to initiate and track improvements	Identifying improvement needs in existing supplier management systems	On track	●

Green light: Ambition on track and on target; Amber light: Ambition behind plan, but on target; Red light: Ambition might not meet the medium-term target

Ensuring a culture of compliance and integrity

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

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

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

the board of directors periodically and participates in all board audit committee meetings.

Combating corruption and respecting human rights are integral to our supplier requirements, see page 89. Procedures are in place relating to assessing the integrity risk of business partners and detecting fraud. Regular transaction-based screening of customers and suppliers is also carried out, see note S10.5 to the social statements. In 2018, Extruded Solutions implemented enhanced business partner screenings to ensure integration with Hydro standards and processes. In 2019, Hydro will re-assess the risk criteria and process for business partner integrity risk management, with the aim to simplify and enhance our risk-based approach.

Starting in 2019, an integrity index will be embedded in Hydro's employee engagement survey. The index will benchmark the employee perception of our integrity culture. It will also aim to identify weaknesses and provide us with a good basis for specific and tailored compliance activities going forward.

In addition, we will strengthen sanctions and trade compliance awareness by e-learning and tailor-made classroom training for exposed functions, implementing Hydro's enhanced sanctions and trade compliance framework established during the end of 2018.

Hydro's global data protection procedure, constituting the company's binding corporate rules for data protection and ensuring compliance with the EU General Data Protection Regulation (GDPR), was approved by the relevant EU data protection authorities on May 16, 2018. In 2018, we performed training, developed detailed standard operating procedures and established risk matrices for data privacy. After the GDPR entered into force in May 2018, we continued to further operationalize internal data protection procedures. Increased attention has also been given to the strengthening of the organization of Hydro's data protection work, with a specific emphasis on clarifying roles and responsibilities.

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

All cases reported through the AlertLine were investigated. In total 14 persons were dismissed as a result of reported breaches of Hydro policy in 2018. This includes one person related to a case of confirmed corruption, please see note S10.1 for more information.

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

For more information about Hydro's performance on compliance, see note S10 to the Viability performance statements in this report. For information about alterations of certain test records in former Sapa, please see page 128.

Transparency

Transparency is key to creating a global level playing field as well as to safeguard the company's reputation. Hydro supports the Extractive Industries Transparency Initiative (EITI) and, since 2005, we have reported payments to host governments related to exploration and extraction activities for bauxite. We also comply with the Norwegian legal requirements on country-by-country reporting, see page 276. The report has been approved by Hydro's board of directors. In accordance with the UK Modern Slavery Act, we publish a transparency statement which is also approved by the board of directors, see page 297. See the Appendices to the Board of Directors report. We also follow the Oslo Børs' guidance on the reporting of corporate responsibility.

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

Respecting human rights

As an employer, owner and purchaser, an important contribution toward respecting human rights is to secure decent working conditions in our organization, in minority-owned companies and with our suppliers. Information pertaining to Hydro's human rights policies and compliance is regularly communicated to the board of directors, the Corporate Management Board, business area management teams, and relevant parties such as union representatives.

We do not tolerate any form of harassment or discrimination, including but not limited to gender, race, color, religion, political views, union affiliation, ethnic background, disability, sexual orientation or marital status. Hydro also supports key frameworks that define human rights principles and is committed to following these, including the UN Guiding Principles on Business and Human Rights. For a full overview, see GRI Standards general disclosure 102-12 and 102-13 at www.hydro.com/gri

8 DECENT WORK AND ECONOMIC GROWTH



In 2017, the Danish Institute for Human Rights (DIHR) performed a comprehensive mapping of Hydro's human rights risks (excluding Extruded Solutions). The mapping covered all countries in which Hydro

operates, excluding Extruded Solutions. In 2018, The Global Child Forum published a report on Hydro's efforts to respect and support children's rights in the state of Pará, Brazil. The report gives an overview of how Hydro has approached the challenges in the region based on the Children's Rights and Business Principles. The reports are publicly available. A full human rights due diligence for the Alunorte refinery and the Paragominas mine in Pará, Brazil, is planned performed in 2019.

An example of how we work with alleged human rights breaches is from our supply chain. We have been in dialogue with a metal supplier, based on alleged human rights breaches, to perform CSR and HSE audits throughout their value chain. As we have been denied access to certain parts, we will terminate the contract, unless the supplier alters the decision.

Hydro has significant operations in Barcarena, Brazil, including the Alunorte alumina refinery and Albras aluminium plant. Local social conditions are challenging with high levels of unemployment and general poverty. For more information about the Alunorte situation, please see the separate section earlier in this report.

Hydro supports ILO's eight core conventions and reports according to the UK Modern Slavery Act, see the Appendices to Board of Directors report.

Vulnerable individuals and groups

We are committed to the principles of non-discrimination and to respecting the rights of vulnerable individuals and groups. Since 2011, Hydro has been the owner of the 244-km-long Paragominas bauxite pipeline that crosses areas inhabited by traditional Quilombola groups in the Jambuaçu Territory in Pará, Brazil.

Unresolved issues remain related to identifying individuals directly impacted by the construction of the pipeline. These relate in particular to a 15-km stretch that crosses Quilombola territory. There are compensatory and mitigating measures which could have consequences for Hydro's mining operation in Paragominas going forward. These issues relate back to the time before Hydro became owner, and the former owner of the pipeline is still the legal party. Hydro maintains its relations with Quilombola representatives through dedicated staff and is cooperating with Fundação Cultural Palmares, the Brazilian agency in charge of Quilombolas affairs, to foster the dialogue and establish a positive agenda within the Quilombola territory. We are also working with local projects and are engaged in education for the Quilombola communities affected by the pipeline.

In Barcarena, also in Pará, in an area surrounding Hydro's operations and regulated for industrial purposes, illegal logging and settlements have accelerated since 2016. Neither the authorities nor Hydro want settlement in the area.

In the municipality of Oriximina in Pará, Brazil, where the MRN¹³ bauxite mine is located, there is an ongoing dispute between Quilombola communities and Brazilian authorities regarding title to land owned by the federal government. The territory claimed by these communities encompasses certain areas that are planned to be mined by MRN in the future, but MRN is not a party in this conflict.

Concerns have been raised about indigenous and tribal peoples' rights during the consultation processes for the mine expansion. Hydro, through MRN's board of directors, engages in the scope of the planned environmental and social impact assessment (ESIA) and Quilombola consultation processes for the expansion project to require adherence to local, national and international standards. Local NGOs have also raised concerns regarding the impacts of MRN's operations on local communities, particularly those close to the Trombetas Port. MRN is currently engaged in understanding and responding to the stakeholder's expectations.

In Canada, Hydro's part-owned Alouette smelter is in regular dialogue with representatives of the Innu First Nation community in its vicinity. Alouette is also promoting and hiring Innu employees.

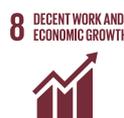
Grievance mechanisms

Grievance mechanisms are important to protect the rights of individuals and groups affected by our operations. At many sites, such mechanisms are available to all local stakeholders.

Channels for submitting grievances may vary depending on local needs. In Brazil, the system has several channels, including a phone number, email and dedicated, specially trained field workers. Third-party grievances may be of any kind, including social and environmental issues. We are using various means to make the mechanism better known to our neighbors, including newsletters, a website and open meetings.

Responsible sourcing

Hydro has more than 30,000 active suppliers globally. Most are located in the same countries as our production facilities.



Hydro's supplier requirements regarding corporate responsibility are, as stated in our global directives and procedures, an integral part of all stages of the procurement process. The requirements cover issues related to environment, human rights, anti-corruption and working conditions, including work environment.

The principles laid down in Hydro's Supplier Code of Conduct are made binding through contractual clauses. The requirements demand the supplier to comply with all applicable laws and regulations relating to corruption and bribery, human rights and working conditions and environment to ensure that Hydro's business relationships reflect the values and principles that Hydro promotes internally and externally. The contracts shall include clauses regarding auditing rights and the supplier's responsibility to actively promote the principles set out in Hydro's Supplier Code of Conduct with its own suppliers/contractors and subsuppliers/subcontractors of any tier that have a material contribution to the supply of goods and services to Hydro under the contract.

In 2018, Extruded Solutions rolled out the Supplier Code of Conduct to most new suppliers and made it an integral part of the global terms and conditions of purchase which are part of most purchase order.

Hydro's procedure for integrity risk management of business partners includes suppliers and customers, strategic partners and intermediaries/agents and sets requirements for integrity due diligence. Implementation is risk-based and takes into consideration contractual value, country risk, etc. With a few exceptions, business partners to Hydro shall be risk-assessed prior to entering into a new contract or renewing an existing contract.

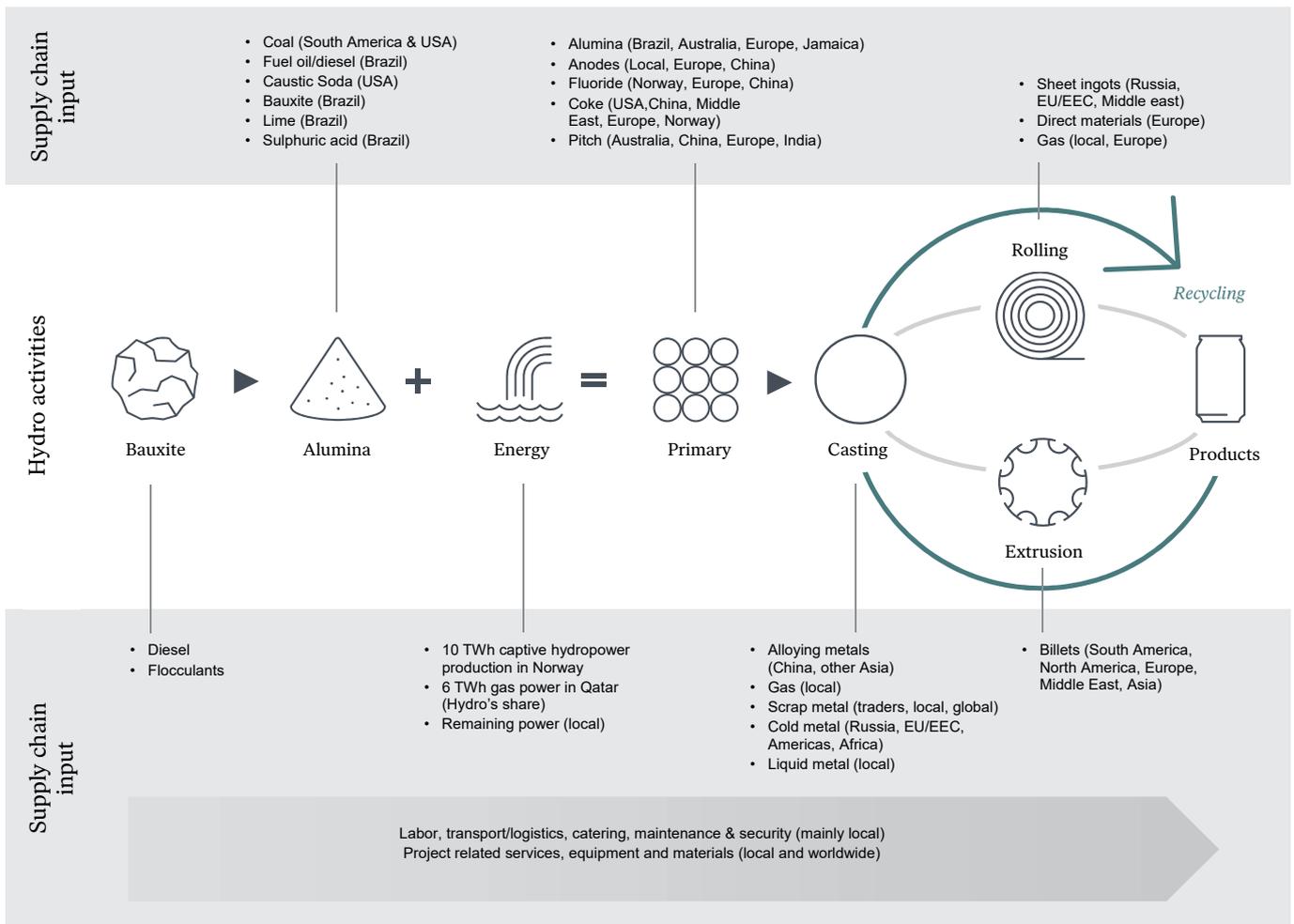
¹³ Hydro has a 5 percent ownership interest and off-take agreements with Vale for a further 40 percent of the volume produced by MRN.

Suppliers, customers and other business partners registered in our main accounting systems (except Extruded Solutions) are screened on a weekly basis against recognized international sanction lists. Extruded Solutions has implemented the Integrity Risk Management process for a majority of its suppliers in 2018. Regular sanctions screening will start in 2019. Furthermore, supplier audits and site visits are performed by Hydro personnel and external auditors based on risk analysis.

The risk of incidents of child labor abuse, compulsory or forced labor in our supply chain is low in the majority of Hydro's business areas. We do, however, recognize a risk of forced or compulsory labor among suppliers in the Middle East, South America and Asia. This is followed up through supplier audits, etc.

Hydro is a founding member of the Aluminium Stewardship Initiative (ASI). See page 265 for more information.

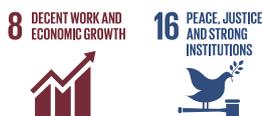
Hydro's supply chain



The figure shows Hydro's supply chain related to its value chain, and does not reflect the current organizational structure.

New projects and other portfolio changes

When planning new projects, we map the environmental and social impact when relevant. Our analysis follows the Equator Principles, and thus reflects the requirements of the World Bank and the International Finance Corporation regarding information, consultation and investigation of the project's environmental and social impact, including human rights, as well as an action plan and proposed initiatives. Dialogue with affected groups gives input to plans, detailing our environmental and social responsibilities. We strive to act in an open and credible manner, and gather views from interested parties, aiming for a common understanding of the decisions that are made.



The Karmøy pilot project reached full production in June 2018. See also page 13.

Two of Hydro's aluminium plants have been running on reduced capacity since 2009. In September 2018, Hydro made the final build decision to upgrade and restart the second production line at the aluminium plant in Husnes, Norway, creating 90 more jobs. The plant in Neuss, Germany, is still running at reduced capacity. In addition, improvement and cost-reduction programs are running in all business areas and corporate staffs, see also page 13.

At the the new line for aluminium car body sheet in Grevenbroich, Germany, most of the issues leading to the delays in the ramp-up have been solved and good progress has been made with product qualification. With the new line Rolled Products have 200,000 mt nominal automotive body-in-white capacity. The ramp-up of a new production line for recycling of low-grade used beverage cans in Neuss, Germany, has been further delayed, see page 82 for more information.

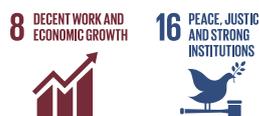
Hydro's acquisition of Arconic's two extrusion plants in Brazil, with more than 600 employees, was completed in April 2018. The acquisition process for Rio Tinto's Icelandic aluminium plant ISAL was ended in September 2018. Hydro

will continue to own 46.7 percent in the related company Aluchemie.

For information about the Alunorte embargo and curtailment at Albras and Paragominas, see the separate section "The Alunorte situation" earlier in this report.

Dialogue with affected parties

Our dialogue and engagement with relevant parties is based on extensive stakeholder mapping. It covers a large number of stakeholders and individuals, such as unions, works councils, customers, suppliers, business partners, local authorities, non-governmental organizations and affected communities including vulnerable groups. Such engagement is based on rights established by legislation or international conventions as well as our values, experiences and participation in the local community. We will consult with interested and affected parties in the identification, assessment and management of all significant social, health, safety, environmental and economic impacts associated with our activities. Before major developments or large expansions are undertaken, it is a requirement to conduct an impact assessment, in line with internationally accepted standards such as IFC and UN Guiding Principles on Business and Human Rights. This includes the principle of free, prior and informed consent when indigenous peoples are involved.



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

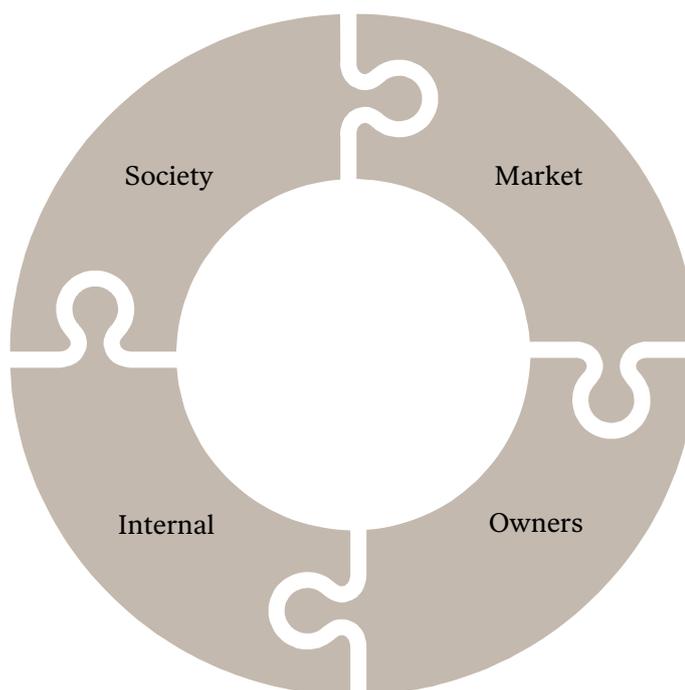
All business areas have a forum for dialogue between the management and union representatives. Hydro's Global Framework Agreement was last updated in 2016 and has been extended through the end of 2019.

For the situation at Alunorte, please see the separate section earlier in this report.

Stakeholder dialogue in Hydro

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

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



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

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

Partnerships

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

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

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

mine bauxite. Thirteen research projects are progressing, while more projects are in the pipeline.

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

Hydro has long-standing partnerships with Amnesty International Norway and Save the Children Norway. We have also collaborated with the Danish Institute for Human Rights since 2011.

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

Public affairs and lobbying

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



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

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

Hydro also participates in a series of think tanks, especially in Brussels, and engages regularly in discussions with various NGOs.

Most resources are dedicated to advocacy activities, within the EU, Brazil, USA and Norway, through business associations, and direct dialogue with authorities and decision makers. Among concrete activities in 2018 was follow-up of the implementation of the new ETS Directive, review of the state aid guidelines for indirect cost compensation, EU's process on updating its energy and climate policy framework and the long-term emission reduction strategy. In Germany, our activities relate to the Commission on Growth, Structural Change and Employment preparation of a roadmap for the phase-out of coal. In Brazil we follow-up of the regulatory framework on ICMS tax in the state of Pará, see page 69. Following the embargos imposed on Alunorte in 2018, Hydro has actively worked with Brazilian authorities to resume normal operations at the alumina refinery. For more information, please see The Alunorte situation section earlier in this report.

Hydro has continued a close follow-up the impact of the trade sanctions launched by the Trump administration. These include the Section 232 for investigation into whether aluminium import impairs US national security, sanctions on RUSAL and the Section 301 investigation of China's acts,

policies and practices related to technology transfer, intellectual property and innovation.

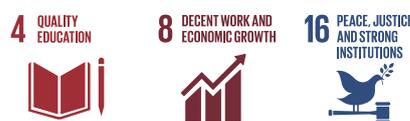
Hydro supports the principles of free trade and open market, and efforts to create a global level playing field. In addition, in our advocacy we support the climate targets set in the Paris Agreement.

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

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

Community investments and social programs

A key element in Hydro's CSR strategy is to strengthen the positive impact on the societies and communities where we operate. The way we do this differs from country to country and from community to community. The main contribution is generated from our operations through production and purchase of goods and services, direct and indirect job creation, and tax payments. We engage in capacity building through targeted programs, and we have partnerships aiming to further enhance the public's knowledge about Hydro and its operations. Hydro has corporate requirements on management of community investments, charitable donations and sponsorships.



In 2018, we launched the strategic target to contribute to quality education and capacity building for 500,000 people in our communities and for business partners from 2018 until end of 2030.

Some of our community programs are based in mining license requirements, while others are voluntary commitments. In Brazil, all major programs have been evaluated to maximize outcomes and impact for the targeted stakeholders. This evaluation has led to restructuring of some programs, while others have been, or will be, phased out. Examples of programs include two programs in Barcarena in Brazil: Amesa, that aims to bring together local family farmers with private actors that purchase and need products from local farms, and EmBarca, that seeks to strengthen local youth to be socio-environmental entrepreneurs in their own communities.

The program offering internships and apprenticeships to refugees at Hydro's Rolled Products operations in Germany continued in 2018 with six participants. Extruded Solutions in Tønder, Denmark, has a similar program.

Local activities at Hydro sites around the world typically include children's education and related sports activities, culture and assistance to children in need. Our partnerships also include support of the Nobel Peace Center in Oslo, and Save the Children Norway as well as agreements with e.g.

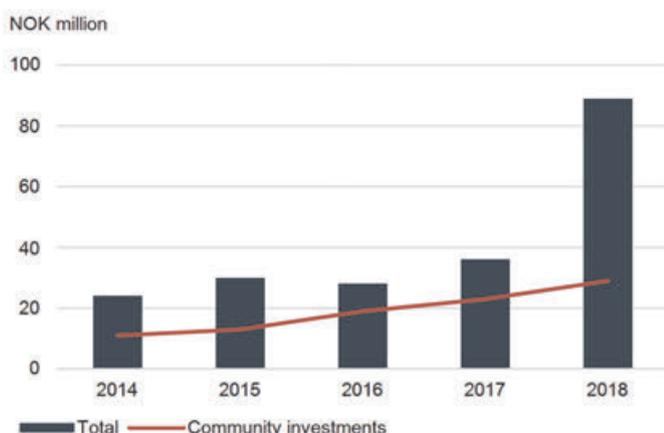
Amnesty International Norway, Danish Institute for Human Rights, Transparency International Norway and World Wildlife Foundation Norway.

Another important contribution is the transfer of competence that takes place through our cooperation with universities and research institutions. This includes the cooperation with three academic institutions in Pará, Brazil, and the University of Oslo through the Biodiversity Research Consortium Brazil-Norway. See page 83 for more information. In addition, we provide scholarships to selected PhD candidates doing research relevant for our business areas. Hydro is also sponsoring professorships in Norway and Qatar and has several adjunct professors among its own employees. See also page 101 for further information.

Extruded Solutions has a broad range of sponsorships and support programs based on local needs. These activities are not yet included in Hydro's reporting.

For information related to the Alunorte situation, please see the separate section earlier in this report.

Community investments, charitable donations and sponsorships



Around 35 million NOK relates to emergency relief following the extreme rainfall and subsequent flooding of Barcarena in 2018. Around 10 million NOK relates to food cards as part of the TAC agreement.

Organization and work environment

Hydro's safety performance deteriorated further in 2018, and we experienced one fatal accident. The development is concerning. Our combined total recordable injury (TRI) rate, including employees and contractor employees, increased to 3.4 from 2.9 in 2017. Our target was 2.4. Still, the high-risk incidents rate improved.

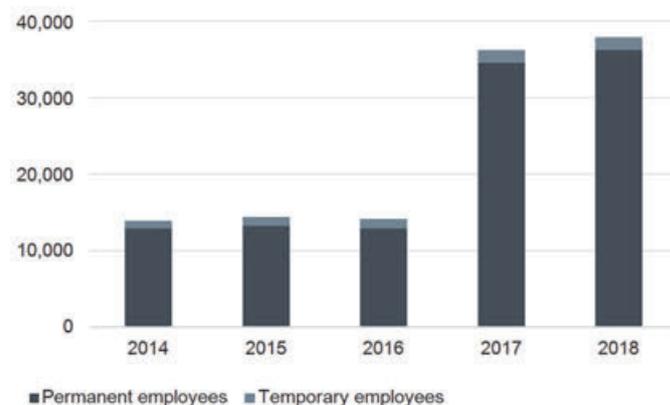
Through the Sapa acquisition in 2017, the number of permanent employees in Hydro grew from about 13,000 to 35,000 and reached 36,236 at the end of 2018. The integration of Extruded Solutions is continuing and includes implementation of Hydro's common people processes.

Effective organization

In order to deliver on our strategic goals and remain competitive, Hydro needs leaders and specialists with the right competence. We are dedicated to attracting, developing and retaining competence to ensure our future success. After an update of Hydro's people strategy in 2016, we continued to reinforce some existing processes and implement some new. Extruded Solutions has also started implementation of Hydro's common process for people performance and development. We initiated the development of a global framework for competence management. This work will continue in 2019.

Our global employee engagement survey Hydro Monitor is normally run every second year. The last survey took place in 2018 and reached the top 10 percent according to the IBM External Norm on the Employee Engagement Index. The survey did not include the business area Extruded Solutions, which will be included in Hydro Monitor 2019. Maintaining employee engagement is a key priority going forward. All units have action plans based on their results.

Number of employees



The increase in employees in 2017 followed the acquisition of Sapa.

Developing and retaining the right competence

Hydro's common process for people performance and development, My Way, includes an appraisal dialogue, individual development plan and follow up, as well as talent planning and succession management. In 2018, all employees¹⁴ except those who work in manufacturing operations in Extruded Solutions were invited to take part and 96 percent participated. While some plants have paper-based appraisal dialogues also for employees who work in manufacturing roles, we will not be able to roll out My Way throughout the entire company until 2021 at the earliest, when a new system will be available to all employees.

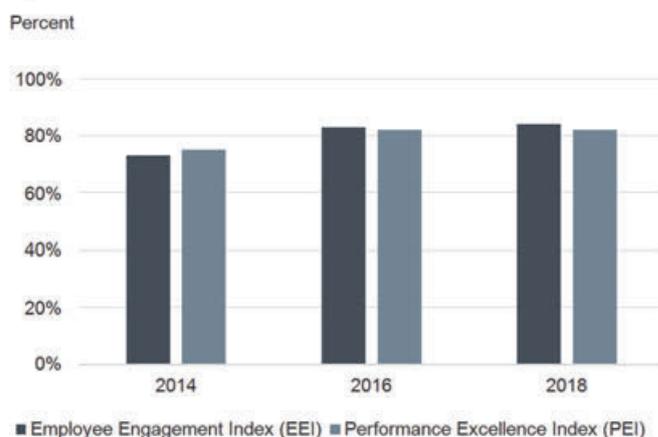
Our philosophy is that 70 percent of competence building is direct on-the-job training, while 20 percent is acquired via networking and mentoring and 10 percent via traditional training. Hydro Academy is our platform for learning and development for employees. It is also the umbrella for all other faculties and academies in Hydro such as the business systems, HSE, compliance, digitalization and leadership. One important goal of Hydro Academy is to make training more visible and easily accessible to leaders and employees. This includes an overview of available training and of the training modules that each employee has completed or should complete. Extruded Solutions has started implementation of Hydro Academy for its office and administrative workers.

We offer new employees introductory training related to the organization and to their individual work tasks. This includes required knowledge within health, security, safety and environment. The most important development takes place locally, primarily with on-the-job training. A special training course, Hydro Fundamentals, targets leaders and specialists,

giving them insight into Hydro's history, values, diversity, competitive landscape and businesses. A digital version is under development to significantly extend the reach of Hydro Fundamentals.

In order to have a healthy pipeline of leaders with the required breadth of experience, we strive to rotate employees early in their careers so that they gain skills from different parts of the organization. Through the succession and career sections of My Way, we work with the leadership and specialist pipeline and identify required development. We have a portfolio of development programs that supports on-the-job development for leaders and specialists.

Hydro Monitor



Hydro Monitor did not include employees from Extruded Solutions in 2018. A new Hydro Monitor will be performed for all employees in 2019.

Mid-term strategic goals Organization and work environment

	Ambitions	Medium-term target	Timeframe	2019 Target	2018 Target	2018 progress	Status
Better	Improve safety performance, strive for injury free environment	TRI <2 ¹⁾	2020	TRI < 2.7	TRI < 3.0	One fatality TRI 3.4	●
	Hydro scores in the top 25 percent on the Employee Engagement index in Hydro Monitor	Top 25 percent ²⁾	2020	Top 25 percent	Top 25 percent	Top 25 percent	●
	All employees participate in the people performance and development process My Way	90 percent ³⁾	2020	92 percent	95 percent ⁴⁾	96 percent	●
Bigger							
Greener							

1) TRI, total recordable injuries per million hours worked, includes own employees and contractors
 2) Currently 78% according to the external norm
 3) Excluding Extruded Solutions in 2018
 4) The target for Extruded Solutions was 75 percent except for those who work in manufacturing operations

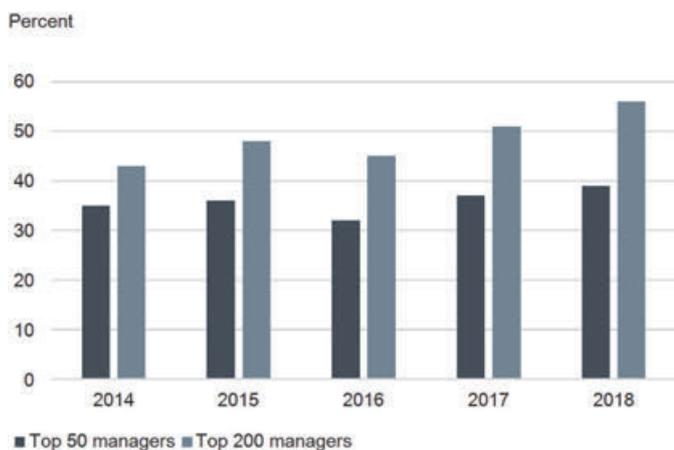
Green light: Ambition on track and on target; Amber light: Ambition behind plan, but on target; Red light: Ambition might not meet the medium-term target

¹⁴ Excludes employees on leave and those being employed after the main part of My Way is performed.

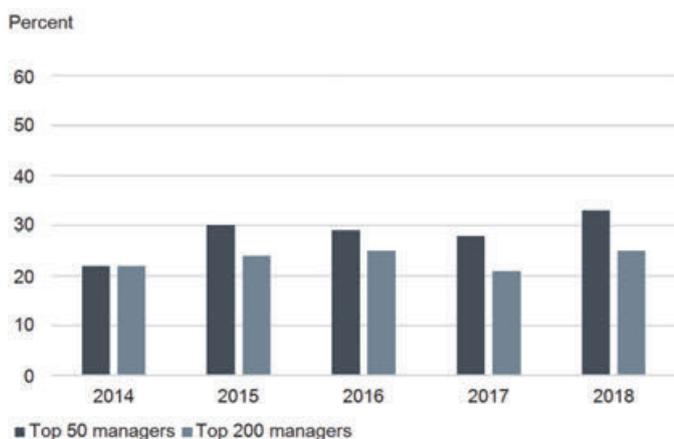
Diversity and inclusion

Hydro's organization around the world represents significant diversity in education, experience, gender, age and cultural background. We see this diversity as a source of competitive advantage, as it encourages innovation, learning and better customer understanding. Through diversity and inclusion, we want all employees to know they are valued for their differences and that they contribute to the success of our business strategy.

Share of non-Norwegian leaders



Share of women leaders



The total share of women at all levels in Hydro was 18 percent in 2018.

In 2018, we updated the ambition to increase diversity and accommodate an inclusive work environment. The new ambition is better suited to our business needs with an integrated Extruded Solutions. Since 2017, each business area has identified priorities and is in the process of delivering on targets. Gender equality continues to be a main area for Hydro. In addition, each business area has chosen at least one diversity area in which to improve, either culture, competence, or disability. Our HR processes are also used in advancing diversity and inclusion. Through corporate programs, leaders and specialists are trained in how to better manage and take advantage of diverse teams. We emphasize participant diversity in the programs.

We are continually adjusting working conditions so that all employees have the same opportunities in their workplace. In Brazil, we are required to employ at least 5 percent disabled people. Paragominas employed 4.9 percent disabled people by the end of 2018, and Alunorte were at 4.7 percent at the end of 2018, while the level at Albras was 3.5 percent. Just as important as achieving the legal requirements, Alunorte, Paragominas and Norsk Hydro Brasil are working on the career development of employees with disabilities.

Compensation

All employees shall receive a total compensation that is competitive and aligned with the local industry standard (but not market-leading). Relevant qualifications, such as performance, education, experience and professional criteria, shall be considered when providing training, settling compensation and awarding promotions.

The annual bonus of Hydro executives shall reflect achievements in relation to pre-defined financial targets and achievements of operational and organizational key performance indicators (KPIs). Targets relating to safety, environment, corporate social responsibility, compliance and leadership expectations constitute a substantial part of the annual bonus plan. Please see note 8 and 9 to the consolidated financial statements for more information.

To learn about gender-related salary differences, see note S2.1 to the social statements.

Occupational health and safety

Hydro shall be a leading company in our industry in the area of occupational health and safety. This will be achieved through consistent implementation of the management system, with committed and visible leadership, and full engagement of all employees.

Our business-planning process is used to ensure continuous improvement throughout the organization with progress on key performance indicators reported monthly.

Our ambition is to prevent all injuries and ill health to avoid human suffering and we will work continually to avoid damage to property and loss of production.

The negative development in safety performance in 2018 was concerning. An employee lost his life in a crushing accident at our extrusion plant in Hungary, and we had an increase in the number of recordable injuries. The fatality was thoroughly investigated with corrective actions taken locally, and lessons learned communicated and acted upon globally.

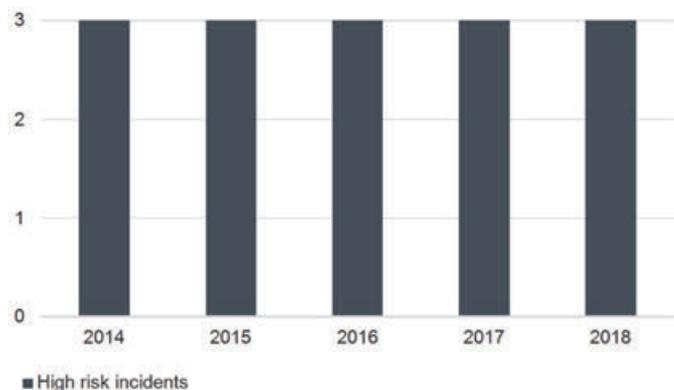
All business areas are active in identifying risks, and our performance indicator related to risk is important in helping monitor and manage processes and tasks with high inherent risks. The high-risk incidents rate, which is a leading indicator, improved in 2018.

In 2019, we will deploy fatality prevention protocols and associated life-saving rules and behaviors across all business areas. We will also identify and share best practices more

effectively through a revised HSE auditing process and use of digital tools. See also note S5.1.

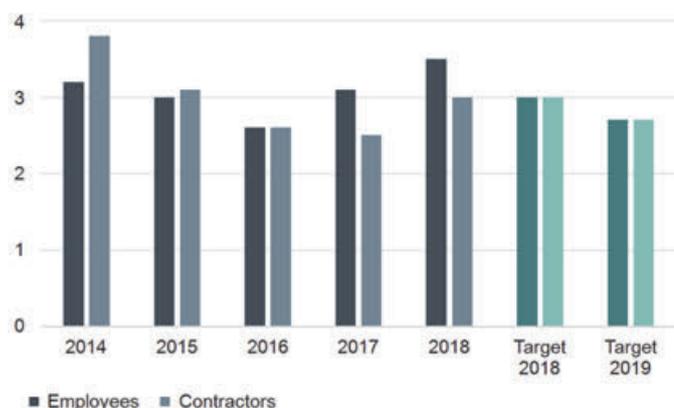
High risk incidents

Per million hours worked (employees and contractors combined)



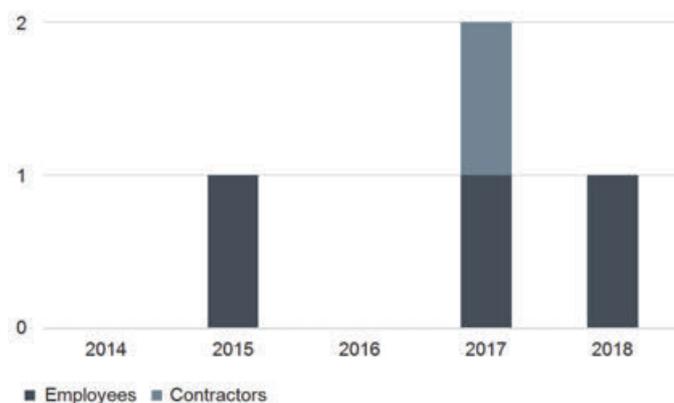
Total recordable injuries

Per million hours worked



Fatal accidents

Number



Hydro experienced one fatal accident in 2018.

In addition, we are strengthening our behavioral tools using human performance techniques and the deployment of the safety culture program “green zones” at all sites.

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

Since 2012, the CEO HSE Committee has been the strategic decision-making committee for all main HSE-related matters in Hydro. The committee is led by President & CEO Svein Richard Brandtzæg and consists of the members of the Corporate Management Board.

Security and emergency preparedness

Increased exposure in risk-filled areas and the global volatile risk picture in general, has made us intensify our preventive efforts. We are committed to the protection of people, environment, physical assets, data and information, anticipating and preparing for potentially adverse incidents with crisis potential in order to maintain business and operational continuity.

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

Security guards are employed on a regular basis to protect our personnel and assets. No armed guards were engaged in our activities in 2018, and there were no significant incidents reported in connection with the use of security guards. Hydro is committed to the Voluntary Principles on Security and Human Rights.

Hydro is responsible for infrastructure and functions on local and regional levels that might be critical to society's operability, and we operate large-scale production sites where a crisis could influence community interests and safety in general. Hence, we are subject to control and follow-up by relevant national authorities. We have emergency plans in place at the plant and business area level, and we train with these regularly. Lessons identified indicate that a standardized approach to emergency planning, more closely linked to risk mapping, will improve our ability to deal with emergency situations. In 2019, we will carry out emergency and crisis management workshops to help link the process of emergency preparedness, crisis management, response and recovery from the plant through to business area level and above.

Secure information handling is important to ensure Hydro's business continuity and reputation. Crucial computer systems are subject to surveillance and regulations. All personnel with access to sensitive information are bound to secrecy, and required to handle information according to corporate guidelines and requirements.

Hydro's IS/IT infrastructure is a critical element in all parts of our operations, covering areas such as process control systems at production sites, central personnel databases and systems for external reporting. Cyber crime is increasing globally, and Hydro is exposed to threats to the integrity,

availability and confidentiality of our systems. Threats may include attempts to access information, computer viruses, denial of service and other electronic security breaches.

Hydro has launched several initiatives to increase the robustness of its IS/IT infrastructure toward malicious attacks by improving system infrastructure and by educating employees to develop and improve secure work processes and routines, and to understand how these threats can be brought to bear.

Employees are safeguarded through systems for travel planning, risk assessment and emergency preparedness. Our ability to respond quickly to incidents worldwide has increased through risk monitoring, incident-monitoring tools and a continuous development of competence.

Innovation and design thinking

We believe that the key to Hydro's 113-year-long stretch of industrial progress is the combination of production and innovation, where research and development have gone hand-in-hand with full-scale production.



Our R&D efforts are concentrated on:

- Making products that promote the use of aluminium and sustainable development
- Developing the world's best electrolysis technology
- Using R&D and technology to ensure optimal operations in existing assets, including cost and HSE
- Ensuring optimal operations in existing assets, including cost and HSE
- Developing recycling technology
- Increasing the share of value-added products and tailored solutions for the customer
- Utilizing the opportunities of Industry 4.0 to improve process stability, productivity, cost and safety

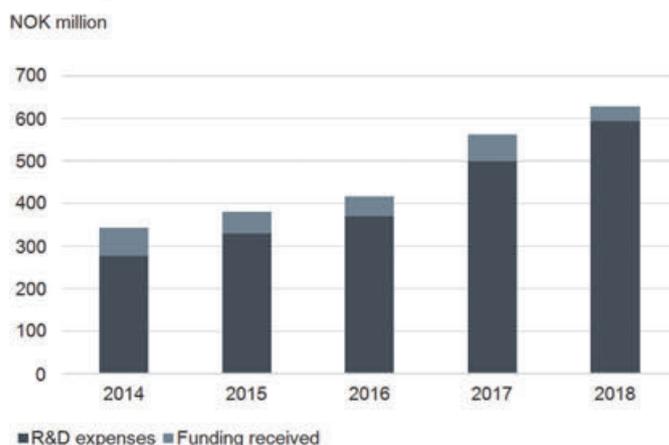
In our industry, we must start developing today the technology we will be using in 10 or 20 years. This includes smelter technology, new aluminium alloys with special properties, lighter transportation, better packaging to reduce cooling needs and food spoilage, and aluminium façades that lead to lower operating costs and enable buildings to generate as much energy as they use during operation. At the same time, our downstream activities are continuously developing new solutions, together with customers. More and more, this collaboration reflects design thinking, bridging the gap from idea to solution.

Hydro's Technology Board consists of the members of Hydro's Corporate Management Board. The group meets every quarter to understand and discuss innovations in the business areas, including their value to the company. Innovations include the changes achieved through our continuous improvement work on all organizational levels.

Business areas are responsible for their own technology development and for the execution of their respective technology strategies. A corporate technology office shall ensure a holistic and long-term approach to Hydro's technology strategy and agenda. Hydro's Chief Technology Officer (CTO), reports directly to the CEO, to strengthen technology leadership. The CTO leads an internal R&D network with representatives from the business areas, and supports the Hydro Technology Board in developing overall research and technology priorities and strategies.

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

R&D Expenses



Received funding in 2018 accumulated to NOK 35 million. In addition comes NOK 311 million related to Enova's support to the Karmøy Technology Pilot.

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

Our aluminium plants in Sunndal (Norway) and Qatalum (Qatar) utilize HAL 300 technology. Hydro developed this technology, which features energy consumption of around 13.5 kWh/kg compared to a global industry average of about 14 kWh/kg.

Our 75,000-metric-ton-per-year technology pilot, with the aim of full-scale industrial testing of our proprietary HAL4e technology, started production at Karmøy, Norway, in January 2018 and reached full production in June 2018. The total cost of the project was NOK 4.3 billion. Enova, a Norwegian public enterprise supporting new energy and climate-related technology, contributed NOK 1.6 billion toward the total cost. Although still in a qualification phase, the Karmøy Technology Pilot is producing the world's most climate and energy-efficient primary aluminium.

The technology pilot consists of 60 production cells. Forty-eight cells use HAL4e technology, where the target is to operate with energy consumption of 12.3 kWh per kg produced aluminium. The other 12 cells use HAL4e Ultra technology, and aim to operate at 11.5-11.8 kWh/kg. The pilot is still in a phase where heat balance and tuning of operations are performed and energy targets will not be validated until 2019. Total direct and indirect emissions are expected to be 1.4 kg CO₂ equivalents/kg aluminium, which is more than 30 percent lower than the world average of 2.1. An important rationale for the technology pilot is to validate the new physical and control system-related elements. This may enable Hydro to implement the new spin-off technology elements - faster, cheaper and with lower risk – at its other

primary aluminium plants to improve performance and financial robustness.

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

Mid-term strategic goals Innovation

	Ambitions	Medium-term target	Timeframe	2019 Target	2018 Target	2018 progress	Status
Better	Extend technology lead with Karmøy technology pilot	Full ramp-up	Q2 2018			Jun 27, 2018	●
	Differentiate through product innovation, quality and service	min. 1 step change/yr	Annually	1 step change	1 step change	Advanced alloys for superplastic forming	●
Bigger	Realize technology-driven smelter capacity creep	200,000 mt/yr	2025	55,000 mt/yr ¹⁾ 2)	43,000 mt/yr ²⁾	35,000 mt ²⁾	●
Greener	Continuously reduced specific GHG emissions/mt from electrolysis	EU benchmark	Long-term	1.57	1.57	1.60	●
	Increase recycling of post-consumer scrap	>250,000 mt/yr	2020	195,000 mt/yr ³⁾	183,000 mt/yr	161,000 mt/yr	●

1) Original target of 150,000 mt/yr will not be met by 2020

2) Excludes Albras

3) Original target of 250,000 mt/yr will not be met by 2020

Green light: Ambition on track and on target; *Amber light:* Ambition behind plan, but on target; *Red light:* Ambition might not meet the medium-term target

Aluminium in automotive

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

Aluminium has inherent suitable forming and functional properties, it is lighter than competing materials and its energy-absorption properties can increase safety. Applications include extruded aluminium frames and sub-frames, body-in white components, and sheet for hang on parts such as car doors and hoods.

Hydro is a large supplier to the automotive industry. Customers include major producers in Europe, North America and Asia.

In 2018, Hydro introduced a high-performing aluminium alloy (HHS 400) for automotive applications that require high-strength aluminium solutions. The development of HHS 400 was based on our material research work.

We also extended our business relationship with Ford Motor Company in 2018 after winning a contract to deliver an aluminium solution that reduces the suspension weight on a new car that Ford is developing. The finished aluminium component, which is replacing steel, requires value-adding operations such as precision cutting, CNC machining and the insertion of special bushings.

High level of expertise

An important part of Hydro's technology strategy is to utilize our researchers, operators and other experts in optimizing the operations at our plants. The competence base in Hydro's technology environments is on a high level in general and world-class in several core areas. As a result, we emphasize using this competence in operational improvements. Examples are reduced energy consumption in casting furnaces, new cathode solutions for relining of electrolysis cells, improved blending tools for utilization of recycled materials, reduced emissions from foil annealing furnaces, and improvement projects related to quality and productivity.

Upstream, we prioritize our R&D and innovation efforts toward technology development and operational efficiency, while downstream, we concentrate on application and product development. Part of our work downstream is conducted together with customers, reflecting design thinking from idea to solution.

The President's Award aims to energize all employees by recognizing excellent work and best-practice sharing. Awards are presented each year within the areas of HSE, innovation, performance and technology development. Winners should clearly demonstrate the spirit of The Hydro Way, emphasizing Hydro's values. In 2018, the Paragominas bauxite mine in Brazil won the most prestigious award, the Unit of the Year.

To promote idea generation and innovation, Hydro's corporate technology office manages a "New Idea" program for company employees. The program gives all employees the opportunity to apply for up to NOK 150,000 in funding to develop their idea to a maturity level where it could be further developed or implemented.

For more information about R&D in the individual business areas, please see the section "Business description" in this report.

Cooperation with other institutions

In Norway, we receive support from several public institutions to further develop our smelter and casthouse technology as well as our downstream activities. These include The Research Council of Norway, Enova, Innovation Norway and Prosessindustriens Miljøfond. In addition, comes the contribution of NOK 1.6 billion, granted in 2014, from Enova related to our Karmøy Technology Pilot in Norway. The majority of the support from The Research Council of Norway is paid directly to projects administered or partnered by Hydro at the Norwegian University of Science and Technology (NTNU), SINTEF or Institute for Energy Technology (IFE). Since 2015, we have been a partner in three centers for research-based innovation, supported by The Research Council of Norway: SFI Metal Production, SFI Center for Advanced Structural Analysis and SFI Manufacturing. These are cross-disciplinary R&D programs with a frame of eight years. For more information, see note S8 to the Viability performance statements about public funding.

We also participate in other national and EU-funded R&D projects on post-consumer scrap recycling technology, following market demand for products with a low carbon footprint. Our R&D program includes joint projects with external research institutes such as SINTEF, NTNU, IFE and the University of Oslo in Norway, RWTH Aachen in Germany and the University of Auckland in New Zealand.

Hydro has been a partner since 2016 in NAPIC, the NTNU Aluminium Product Innovation Center. Its purpose is to develop new aluminium applications. A consortium that comprises several downstream industries has been established and five different faculties at NTNU are participating. In order to support and speed up the activity, Hydro is sponsoring a new NTNU Professor in this area for five years, from autumn 2016.

Another major cooperation is participation in the AMAP (Advanced Metals and Processes) Research Cluster at RWTH Aachen, where among others, one BMWi-funded project deals with energy and resource-efficient recycling of organically contaminated aluminium scrap.