Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Hydro is a fully integrated aluminium company with 29,000 employees in 40 countries on all continents, combining local expertise, worldwide reach and unmatched capabilities in R&D. In addition to production of primary aluminium, rolled (divested June 2021) and extruded products and recycling, Hydro also extracts bauxite, refines alumina and generates energy to be the only 360° company of the global aluminium industry. Hydro is present within all market segments for aluminium, with sales and trading activities throughout the value chain serving more than 30,000 customers. Based in Norway and rooted in more than a century of experience in renewable energy, technology and innovation, Hydro is committed to strengthening the viability of its customers and communities, shaping a sustainable future through innovative aluminium solutions.

Hydro is a resource rich, fully integrated aluminium company with operations in all major activities along the aluminium industry's value chain. Our operations include one of the world's largest bauxite mines and the world's largest alumina refinery, both located in Brazil. We have primary metal production facilities in Europe, Canada, Australia, Brazil and Qatar. We are a leading worldwide supplier of value-added casthouse products, such as extrusion ingots, sheet ingots and foundry alloys.

We are an industry leader as a supplier to a range of downstream markets in particular the packaging, lithographic, building, automotive and transport sectors. We deliver high-quality, energy-saving aluminium products and solutions, and have strong positions in markets that provide opportunities for good financial returns.

With more than 100 years of experience in hydropower, Hydro is the second-largest operator of power production in Norway. We have substantial, self-generated power capacity to support our production of primary metal, and are engaged in a number of initiatives to secure competitive power supplies for our aluminium operations.

Since 2020, Hydro has the the following approach to our CDP related reporting:

· We continue to submit the CDP Climate Change, Water and Supply Chain questionnaires, but will only fill in the information we believe is relevant to our activities (including referring to where such information can be found in our annual reports and other publicly available sources) and that is particularly requested by our main stakeholders – knowing that this will further reduce our CDP scores
· We continue to include information on climate change and water in our annual report based on the following reporting frameworks:
o TCFD (Task Force on Climate Related Financial Disclosures)
o GRI Standards (all applicable)
o ICMM (International Council on Mining & Metals) Water reporting guidelines
All relevant quantitative information is also available at www.hydro.com in Excel format.
Please also see https://www.hydro.com/en-NO/sustainability/our-performance/ for more information about Hydro's approach to CDP.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2020	December 31, 2020	Yes	3 years

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Australia
Austria
Bahrain
Belgium
Brazil
Canada
China
Croatia
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
India
Italy
Japan
Lithuania

Luxembourg
Mexico
Netherlands
Norway
Poland
Portugal
Qatar
Romania
Singapore
Slovakia
South Africa
Spain
Sweden
Switzerland
Turkey
Ukraine
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

NOK

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Equity share

C-MM0.7

(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?

Row 1

Mining

Bauxite

Processing metals

Aluminum
Alumina

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other C-Suite Officer	Hydro has a two tier board structure and climate change is an important part of the responsibility of both boards. The EVP and head of Corporate Development has the responsibility for overseeing climate change and sustainability.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and	Climate related issues are integrated in Hydro's strategy process, annual business planning, enterprise risk management and other relevant processes.

	targets for addressing climate-related issues	

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify EVP and head of Corporate Development [1]	Both assessing and managing climate-related risks and opportunities	Half-yearly

[1] Executive Vice President and head of Energy and Corporate Climate office and Business Development Arvid Moss. Moss is a member of the Corporate Management Board and reports to the President and CEO.

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Executive Vice President and head of Corporate Development. She is a member of the Corporate Management Board and reports to the President and CEO.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	The President and CEO's bonus scheme includes 10 strategic, operational, financial and organizational goals, including climate related goals.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Other (please specify) Greener products	The President and CEO's bonus scheme includes 10 strategic, operational, financial and organizational goals. Of these, six are related to sustainability in general, and two to climate in particular. These relate to reducing Hydro Group CO2 emissions per ton and increase sales of Hydro Circal. See Hydro's Annual Report 2019 p. 185 https://www.hydro.com/Document/Index?name=Annual%20report%202019%20web.pdf&id=506433 The same principles were applied in 2020, see page 16 and 197 in Hydro's Annual report 2020 https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf
Corporate executive team	Monetary reward	Emissions reduction target Other (please specify)	The President and CEO's bonus scheme includes 10 strategic, operational, financial and organizational goals. Of these, six are related to sustainability in general, and two to climate in particular. These relate to reducing Hydro Group CO2 emissions per ton and increase sales of Hydro Circal. See Hydro's Annual Report 2019 p. 185 https://www.hydro.com/Document/Index?name=Annual%20report%202019%20web.pdf&id=506433 The same principles were applied in 2020, see page 16 and 197 in Hydro's Annual report 2020 https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf
Management group	Monetary reward	Emissions reduction target	Included in Aluminum Metals' bonus scheme.
All employees	Monetary reward	Emissions reduction target	Included in bonus scheme for relevant employees in Aluminum Metal.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	1	9	We evaluate medium-term risk towards 2030 (technical, commercial, regulatory and reputational risks)
Long-term	11	29	We evaluate long-term risk towards 2050 (physical risks, reputational risks)

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Hydro has quantified a set of ambitions to improve our performance on climate, environment and social responsibility toward 2030. By emphasizing safety in our operations, improving relations with stakeholders and neighbors, increasing resource efficiency, reducing our own emissions and developing new markets, Hydro's business will be more robust. Hydro aims to lift profitability and drive sustainability, in order to increase long-term value for our stakeholders and contribute to a viable society. The two main pillars of our strategy are to deliver 10 percent capital returns over the business cycle and to reduce our CO2 emissions by 30 percent by 2030.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Business risks including climate change legislation, price impact and financial consequences as well as opportunities are mapped and mitigating actions defined in the Hydro group and business areas risk management and strategy processes. The business sites identify their risks, which are reported to the responsible staff. The main Company risks are identified at the corporate level. For investment proposals we evaluate specific risks , covering both project and country risks. Sensitivity and scenario analyses are included mapping different risk aspects. Risk management is a dedicated topic on the board agenda annually. Further, review of climate change risks and opportunities are an integrated part of Hydro's strategy process, all new projects and investments, the annual business planning process and the financial and extra-financial reporting process. Sustainability performance is addressed in every board meeting (GRI 102-30 and 102-31a).

Business risks are typically ranked according to probability and impact. Risk management in Hydro is based on the principle that risk and opportunities evaluation is an integral part of all business activities. Consequently, the business areas have the main responsibility for risk management, utilizing established policies and procedures. Their work is coordinated by staff units at the corporate level. The board of directors regularly reviews and evaluates the overall risk management system and environment within Hydro. (Annual Report 2020 page 112)
https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions. Hydro is exposed to changes in the CO2e price, the level of free allocation for direct emissions, and the indirect cost of CO2e included in the power price. Hydro has substantial smelter operations located in Europe and other

		regions as well as alumina refining operations located in Brazil. Aluminium production is an energy-intensive process with significant environmental emissions. An increasing number of countries have introduced, or are likely to introduce in the near future, legislation with the objective of reducing greenhouse gas emissions. There is a general belief that the political framework for regulating emissions of greenhouse gases will accelerate, as we are gradually witnessing today. There is also expected to be a focus on technology improvements leading to lower emissions. The new EU directive on emission trading scheme (ETS) for the years 2021-2030 is based on earlier agreed emission targets for 2030. In December 2019, the new EU Commission presented the European Green Deal. This deal includes both a proposal for the European "Climate Law", protecting the 2050 climate neutrality target in legislation, and a comprehensive plan to increase EU's emission reduction target for 2030. A carbon border tax aimed at shielding energy-intensive industries in the EU against cheaper imports from countries with less strict climate policies is also being discussed. There is a risk of increased network tariffs for Hydro's smelters in Europe, mainly due to the development of renewable energy sources and upgrades and expansions of transmission systems. Such increases could have a material impact on Hydro's cost of power, which again would have a material impact on Hydro's operating results. As an example, the Norwegian transmission system operator, Statnett SF has changed the grid tariff model for the industry and is carrying out substantial investments in the transmission system which result in increased tariffs for the aluminium industry. Norwegian grid tariff model of 2015 is currently subject to a state aid complaint to EFTA, alleging that certain aspects of the model constitutes unlawful state aid. If a formal investigation is opened, and the complaint is successful, this could lead to a repayment request towards Hydro from the Norwegian state for awarded rebates from 2015. (see page 118, Hydro's annual report 2020)
Emerging regulation	Relevant, always included	Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions. Hydro is exposed to changes in the CO2e price, the level of free allocation for direct emissions, and the indirect cost of CO2e included in the power price. Hydro has substantial smelter operations located in Europe and other regions as well as alumina refining operations located in Brazil. Aluminium production is an energy-intensive process with significant environmental emissions. An increasing number of countries have introduced, or are likely to introduce in the near future, legislation with the objective of reducing greenhouse gas emissions. There is a general

		belief that the political framework for regulating emissions of greenhouse gases will accelerate, as we are gradually witnessing today. There is also expected to be a focus on technology improvements leading to lower emissions. The new EU directive on emission trading scheme (ETS) for the years 2021-2030 is based on earlier agreed emission targets for 2030. In December 2019, the new EU Commission presented the European Green Deal. This deal includes both a proposal for the European "Climate Law", protecting the 2050 climate neutrality target in legislation, and a comprehensive plan to increase EU's emission reduction target for 2030. A carbon border tax aimed at shielding energy-intensive industries in the EU against cheaper imports from countries with less strict climate policies is also being discussed. There is a risk of increased network tariffs for Hydro's smelters in Europe, mainly due to the development of renewable energy sources and upgrades and expansions of transmission systems. Such increases could have a material impact on Hydro's cost of power, which again would have a material impact on Hydro's operating results. As an example, the Norwegian transmission system operator, Statnett SF has changed the grid tariff model for the industry and is carrying out substantial investments in the transmission system which result in increased tariffs for the aluminium industry. (see page 118, Hydro's annual report 2020)
Technology	Relevant, always included	Hydro's technology may not be able to meet the abatement and emissions requirements set by regulatory bodies. Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions, and associated regulatory risk. There is also continuous competition between materials, where environmental footprint is becoming more important as a differentiator. Steel, plastics, carbon fiber and copper are aluminium's main competitors. Primary aluminium based on a renewable power source is beneficial, but there is a risk that all aluminium will be treated equally. Increased concern over climate change may lead to changes in consumer behavior, increased demand for low-emission products or substitution of aluminium by other materials. The consequences of aluminium being substituted by other materials could potentially be high. Reputation and consumer perception could be affected and lead to reduced demand and consequently financial impact
Legal	Relevant, always included	Hydro could be negatively affected by criminal or civil proceedings or investigations related to, but not limited to product liability, environment, health and safety, alleged anticompetitive or corrupt practices or commercial disputes. Violation of applicable laws and regulations could

		result in substantial fines or penalties, costs of corrective work, the suspension or shutdown of our operations and substantial damage to the company's reputation. Norwegian grid tariff model of 2015 is currently subject to a state aid complaint to EFTA, alleging that certain aspects of the model constitutes unlawful state aid. If a formal investigation is opened, and the complaint is successful, this could lead to a repayment request towards Hydro from the Norwegian state for awarded rebates from 2015. (see page 118, Hydro's annual report 2020)
Market	Relevant, always included	Hydro operates in a highly competitive market where operational excellence in all parts of the value chain is required to reach and maintain a competitive position. This includes each step of the business process from the sourcing of raw materials, to physical operations of each plant, and the commercial optimization of the product portfolio. Failure to create an environment and competence which enables the organization to continuously achieve stretched operational targets will reduce the competitiveness of our business and result in the failure to meet our long-term financial targets.
Reputation	Relevant, always included	There is a risk that Hydro is not pursuing sustainability improvements at the same speed as our peers in the aluminium industry. Deviation from external expectations could undermine Hydro's reputation. Hydro could also be negatively affected by criminal or civil proceedings or investigations related to, but not limited to product liability, environment, health and safety, alleged anticompetitive or corrupt practices or commercial disputes. Violation of applicable laws and regulations could result in substantial fines or penalties, costs of corrective work, the suspension or shutdown of our operations and substantial damage to the company's reputation. Hydro's business is subject to a number of risks and hazards which could result in disruptions to operations, damage to properties and production facilities, personal injury or death, environmental damages, monetary losses and possible legal liability. Some of our operations are located in close proximity to sizable communities. Major accidents could result in substantial claims, fines or significant damage to Hydro's reputation.
Acute physical	Relevant, always included	Hydro could be adversely affected by disruptions or major incidents in our operations and may not be able to maintain sufficient insurance to cover all risks related to its operations. The potential physical impacts of climate change on Hydro's facilities and operations is highly uncertain and may cause disruptions in our operation. Hydro's operations and facilities are subject to risks arising from physical climate change, that may impact Hydro's operations. Effects of climate change could include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. The

		changes may be acute and/or chronic. These changes could lead to operational and environmental incidents within our operations, for example by flooding of containment basins, increasing temperatures leading to increased emissions from processes etc. that must be considered in our business strategy. Operational performance and the occurrence of environmental incidents are also affected by other factors than physical climate change. Mining and processing equipment failures, unexpected maintenance problems and interruptions, and critical failures to infrastructure integrity can lead to environmental spills and danger to surrounding communities.
Chronic physical	Relevant, always included	Hydro could be adversely affected by disruptions or major incidents in our operations and may not be able to maintain sufficient insurance to cover all risks related to its operations. The potential physical impacts of climate change on Hydro's facilities and operations is highly uncertain and may cause disruptions in our operation. Hydro's operations and facilities are subject to risks arising from physical climate change, that may impact Hydro's operations. Effects of climate change could include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. The changes may be acute and/or chronic. These changes could lead to operational and environmental incidents within our operations, for example by flooding of containment basins, increasing temperatures leading to increased emissions from processes etc. that must be considered in our business strategy. Operational performance and the occurrence of environmental incidents are also affected by other factors than physical climate change. Mining and processing equipment failures, unexpected maintenance problems and interruptions, and critical failures to infrastructure integrity can lead to environmental spills and danger to surrounding communities.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Increased direct costs

Company-specific description

The potential physical impacts of climate change on our facilities and operations are highly uncertain and may cause disruptions in our operations. Effects of climate change may include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. In order to reduce the risk of disruptions of our operations and potential consequences, we perform regular risk assessments and engage in comprehensive emergency preparedness training for key managers and employees. The scope of risk assessments has been expanded over time. We have also focused on increasing our resilience against power outages including automation of substations and power generating facilities as well as improved back-up facilities. Although Hydro maintains insurance to protect against certain risks in such amounts as it considers reasonable and in accordance with market practice, its insurance may not cover all the potential risks associated with Hydro's operations. These measures may be insufficient to mitigate the risks associated with operational disruptions or major incidents.

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact will vary with the severity and duration of the event, and is not possible to quantify.

Cost of response to risk

Description of response and explanation of cost calculation

The best description of the risk response is related to the extreme rain event in Barcarena in February 2018. In February 2018 the region of Barcarena in northern Brazil suffered from flooding following two days of extreme rainfall. The areas flooded included Hydro's Alunorte alumina refinery. Based on allegations, starting already before the rainfall, Brazilian authorities and local communities were concerned that flooding might have led to harmful spills into the surrounding areas. The authorities ordered several measures against Alunorte while reviewing the situation. The measures restricted the production at the refinery to 50 percent of its capacity. Consequently, Alunorte's primary bauxite source Paragominas and Hydro's part-owned subsidiary Albras aluminium plant, both in the state of Pará, reduced their production by 50 percent.

The federal court in Belem, Brazil, lifted the production embargo on the Alunorte alumina refinery under the criminal lawsuit on May 20, 2019, allowing Alunorte to ramp up towards normal production after running at half capacity for more than a year. The federal court decided to keep the embargoes on the new bauxite residue disposal area (DRS2), which was finally lifted in September 2019

Comment

Related to the event described above Hydro has initiated a NOK 1.5 billion investment to the water treatment system at Alunorte. In addition, to support a broad collaboration for social change in Barcarena, Hydro has committed to around NOK 210 million in local community investments through the Sustainable Barcarena Initative.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Other, please specify

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Company-specific description

The potential physical impacts of climate change on our facilities and operations is highly uncertain and may cause disruptions in our operations. Effects of climate changes may include changes in rainfall patterns, flooding, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. In order to reduce the risk of disruptions of our operations and potential consequences, we perform regular risk assessments and engage in comprehensive emergency preparedness training for key managers and employees. The scope of risk assessments has been expanded over time. We have also focused on increasing our resilience against power outages including automation of substations and power generating facilities as well as improved back-up facilities. Although Hydro maintains insurance to protect against certain risks in such amounts as it considers reasonable and in accordance with market practice, its insurance may not cover all the potential risks associated with Hydro's operations. These measures may be insufficient to mitigate the risks associated with operational disruptions or major incidents.

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact will vary with the severity and duration of the event, and is not possible to quantify.

Cost of response to risk

Description of response and explanation of cost calculation

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Other, please specify

Increased pricing of GHG emissions

Primary potential financial impact

Increased direct costs

Company-specific description

Carbon leakage, where industry is forced to move from areas with strict greenhouse gas regulations and high associated energy costs to areas with less regulations and costs, is a major risk for the European aluminium industry. To establish a global level playing field is thus essential for the European aluminium industry. The introduction of emission trading schemes (ETS) represents a major risk for Hydro as it puts costs on our products that are not put on our competitors' products in regions without comparable regulation. Smelters that are located in regions with no carbon constraints will then have a major advantage compared to smelters placed inside the EU ETS. Fair compensatory measures are therefore essential until equal carbon constraints have been adopted globally, both for direct and indirect emissions.

Hydro is, directly and indirectly, exposed to increasingly demanding legislation on reducing greenhouse gas emissions. Hydro has substantial smelter operations located in Europe and other regions as well as alumina refining operations located in Brazil. Aluminium production is an energy intensive process that potentially leads to significant environmental emissions, especially emissions to air, including CO2. An increasing number of countries have introduced, or are likely to introduce in the near future, legislation with the objective of reducing greenhouse gas emissions. Due to the Paris climate accord conference in December 2015, there is a general belief that the political framework for regulating emissions of greenhouse gases will accelerate. There is also expected to be a focus on technology improvements leading to lower emissions. A new directive on EU/ETS is now being discussed in the EU. The outcome can affect the level of CO2 price, the level of free allowances for direct emissions and compensation regime for indirect CO2 cost.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact will vary with the severity and duration of the event. We do not currently have estimates that are externally shared.

Cost of response to risk

Description of response and explanation of cost calculation

Hydro has been an active participant in the development of international frameworks on climate change and greenhouse gas emissions supporting the establishment of a level playing field for global aluminium production. We engage in significant R & D activities focused on reducing energy consumption and improving electrolysis efficiency including anode consumption which is the main source of CO2 emissions from our smelter operations.

Comment

Management cost is based on time in participation in relevant initiatives.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Technology

Unsuccessful investment in new technologies

Primary potential financial impact

Company-specific description

Hydro makes significant capital investments and acquisitions as part of its business development (e.g. battery technology and renewable energy), and may not be able to realize the benefits expected from such transactions and projects. Major projects and acquisitions are subject to significant risk, and uncertainty in making the investment

evaluation, project execution and subsequent operations. Acquisitions may also contain significant unidentified risks and liabilities, which could have a material adverse effect on our profits and financial position.

Operational performance may also be inhibited by other factors such as the inability to develop necessary technical solutions; changes or variations in geologic conditions, environmental hazards, weather, climate change or natural phenomena; mining and processing equipment failures and unexpected maintenance problems and interruptions. Driving improvements and performance is heavily dependent on achieving sufficient capacity and skill in the workforce. Substantial parts of the Brazilian operation are located in remote areas where it has been difficult to attract and retain the competence required to achieve our performance goals for these operations. In addition, Hydro's bauxite reserves in Brazil and the estimated quantities of bauxite that Hydro expects can be economically mined and processed are subject to material uncertainties.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact will vary with the severity and duration of the event. We do not currently have estimates that are externally shared.

Cost of response to risk

Description of response and explanation of cost calculation

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Company-specific description

Simplified ecolabels do not necessarily reflect the environmental impact along the value chain. Carbon footprint messages should take into account the whole life cycle of a product or packaging. The EU member states have introduced ambitious recycling targets and other instruments to reduce packaging waste. Hydro takes an active role to further increase the high recycling rates of used aluminium packaging across Europe. Unjustified eco taxes by member states not considering the good recycling performance and excellent sustainability credentials of aluminium packaging have the potential to harm our markets.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact will vary with the severity and duration of the event. We do not currently have estimates that are externally shared.

Cost of response to risk

Description of response and explanation of cost calculation

Hydro is involved in relevant networks like the food and drink industry's Sustainable Consumption and Production Round Table to drive the development of appropriate information tools forward and to avoid misleading and unfavorable approaches.

Comment

Management cost is limited to time and travel costs when participating in relevant initiatives.

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Other, please specify

Repayment of awarded rebates

Company-specific description

Norwegian grid tariff model of 2015 is currently subject to a state aid complaint to EFTA, alleging that certain aspects of the model constitutes unlawful state aid. If a formal investigation is opened, and the complaint is successful, this could lead to a repayment request towards Hydro from the Norwegian state for awarded rebates from 2015. (see page 118, Hydro's annual report 2020)

Time horizon

Short-term

Likelihood

Unlikely

Magnitude of impact

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of recycling

Primary potential financial impact

Reduced direct costs

Company-specific description

Aluminium, with its properties that include lightweight and ease of recycling, represents a growing opportunity in an increasingly carbon constrained world. More and more customers are requesting aluminium that has been produced with lower climate footprint. Still small in number, some of them represent interesting business opportunities. In 2019, Hydro launched two new greener brands: Hydro REDUXA with one of the world's lowest carbon footprint (less than 4 kg CO2 per produced kg

aluminium) and Hydro CIRCAL produced on minimum 75 percent post-consumer scrap.
In 2018, Hydro started production at the Karmøy Technology Pilot in Norway, which will produce the world's most climate- and energy-efficient primary aluminium. The pilot has a capacity of 75,000 metric tons. During 2020 we performed a strategic review of our recycling activities, and we set a growth ambition to double the post consumer scrap recycling capacity to more than 600 thousand tonnes per year by 2025.
In 2020 we also started construction of a pilot plant for the recycling of electric vehicle batteries, via HydroVolt, a 50/50 joint venture with Swedish Northvolt with a promising future.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial implications are still difficult to estimate. However, we believe that increasing consumer consciousness about climate change may give a range of aluminium applications a competitive advantage leading to market and volume growth. With an increasing EV market we also expect positive returns on our investment in electric vehicle battery recycling.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

R & D (including cooperation with external institutions), cooperation with customers

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Move to more efficient buildings

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Requirements of energy efficient buildings where aluminium has a positive impact in a life-cycle perspective.

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

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial implications are still difficult to estimate. However, we believe that increasing consumer consciousness about climate change may give a range of aluminium applications a competitive advantage leading to market and volume growth.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

R & D (including cooperation with external institutions), cooperation with customers.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Hydro launched two new low-carbon aluminium brands in 2019, CIRCAL and REDUXA. Hydro CIRCAL is a range of products made with recycled post-consumer scrap, and sales of CIRCAL products were around 10,000 mt in 2019. By using recycled content, we reduce energy use substantially while still being able to offer high-quality products. CIRCAL contains a minimum of 75 percent post-consumer scrap. Hydro REDUXA is our series of certified, low-carbon primary aluminium. REDUXA is produced with renewable energy, and guarantees a maximum carbon footprint of 4.0 kg CO2 per kg aluminium – 25 percent of the global average.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial implications are still difficult to estimate. However, we believe that increasing consumer consciousness about climate change may give a range of aluminium applications a competitive advantage leading to market and volume growth.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Our customers are generally looking for more sustainable materials for their products, and Hydro CIRCAL and Hydro REDUXA are certified products that help them meet their own climate strategies. Supported by technological skills and ability to process post-consumer scrap, we will actively promote the growth of these and future similar product brands.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution	Innovation and technology development are key enablers towards reducing CO2 emissions. We have initiated a significant R&D program towards 2030 to look into different alternatives to achieve

	item within the next two years	CO2-free processes. We will explore different paths such as carbon capture and storage, biomass anodes and carbon-free processes. By 2030 we expect to have a clearer view on a path to further significant GHG emission reductions by 2050. Hydro's climate strategy is an integral part of our overall business strategy, aiming at driving improvements and development within the company. Impact on the climate strategy is also a criterion for all significant investment decisions. The strategy includes reducing the climate impact of our operations as well as taking advantage of business opportunities by enabling our customers to do the same. We are continuously addressing risks and opportunities related to climate change.

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
IEA B2DS	Hydro uses the IEA B2DS for transition risks where this is available for the relevant risks and opportunities assessed. The B2DS scenario especially applies to technology and market risk.
RCP 4.5 RCP 8.5	Hydro uses RCP 4.5 and RCP 8.5 for physical risk assessment.
2DS	Hydro uses the IEA 2DS for transition risks where this is available for the relevant risks and opportunities assessed. The 2DS scenario applies to regulatory risk, market risk, technology risk and reputation risk.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities	Description of influence

	influenced your strategy in this area?	
Products and services	Yes	Hydro's climate strategy is an integral part of our overall business strategy, with the overall goal for the company to be carbon neutral in a life cycle perspective by 2020, which was achieved already in 2019. A strategy update undertaken the same year put the ambition to reduce CO2 emissions by another 30% by year 2030. We will do this through greener sourcing and greener production. We are also helping our customers reduce their footprint through our greener products. Recycling post-consumer scrap is an important way we reduce costs, increase capacity utilization and reduce the carbon footprint of our products. Our casting and alloy expertise, working closely with our customers, enables us to produce products that can be recycled and used as raw materials for high quality semi-finished products. Developing products that optimize the use of recycled material is another focus area. The creation of the REDUXA and CIRCAL product brands in 2019 represents one way to make customers aware of our capabilities to offer products with a lower carbon footprint. REDUXA is produced by renewables-based aluminium plants, and has a guaranteed maximum carbon footprint of 4 kg CO2/kg aluminium. This includes emissions from the bauxite/alumina and energy sources as well as the smelter emissions (Scope 1, 2 and 3). CIRCAL is produced at remelters, and has a guaranteed minimum post-consumer scrap content of 75 percent.
Supply chain and/or value chain	Yes	Hydro's climate strategy is an integral part of our overall business strategy, with the overall goal for the company to be carbon neutral in a life cycle perspective by 2020, which was achieved already in 2019. A strategy update undertaken the same year put the ambition to reduce CO2 emissions by another 30% by year 2030. We will do this through greener sourcing and greener production. We are also helping our customers reduce their footprint through our greener products. In a supply chain perspective, Hydro's climate strategy is based on three pillars – production, use phase and recycling. To make sure we actively drive decisions that keep us on track for carbon neutrality and further reductions

		in CO2 emissions, we factor in climate-related impacts into all strategic decisions for new investments or developments. In recent years we have made several decisions in line with our climate strategy: •Increased production at Norwegian plants which has taken our share of metal produced on renewable hydropower to over 70%. •Increased our own normal production of hydropower by six percent to 10 TWh. •A new automotive sheet line in Germany and the implementation of new casting technology in Norway enable us to meet the demands of the automotive industry. •Our new recycling line for used beverage cans in Germany will increase the plant's annual recycling capacity by more than 40,000 tons per year. •In 2018, the Karmøy Technology Pilot reached full production. The pilot provides full scale industrial testing of Hydro's proprietary technology and verifying the world's most climateand energy-efficient smelter technology with considerable spin-off effects for Hydro's existing smelter portfolio. Industry experts estimate that the world will need almost 35 percent more aluminium in 2020 than in 2014. Hydro's mission is to create a more viable society by developing natural resources and products in innovative and efficient ways. At the same time Hydro has the ambition to meet increased demand for aluminium, while minimizing the impact on the environment. Hydro's climate strategy is an integrated part of the overall business strategy, and climate-related issues are integrated and factored into all strategic decisions for new investments or developments in Hydro.
Investment in R&D	Yes	Hydro's climate strategy is an integral part of our overall business strategy, with the overall goal for the company to be carbon neutral in a life cycle perspective by 2020, which was achieved already in 2019. A strategy update undertaken the same year put the ambition to reduce CO2 emissions by another 30% by year 2030. We will do this through greener sourcing and greener production. We are also helping our customers reduce their footprint through our greener products. Our R&D efforts related to climate risk are concentrated on: • Making products and solutions that promote the use of

		aluminium and sustainable development • Implementing technology elements in order to optimize productivity, energy efficiency and emissions in smelters • Using R&D and technology to ensure optimal operations in existing assets • Improving environmental impact such as biodiversity, rehabilitation and utilization of bauxite residue • Developing recycling technology in terms of scrap types, process improvements and Product development) 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.
Operations	Yes	Hydro's climate strategy is an integral part of our overall business strategy, with the overall goal for the company to be carbon neutral in a life cycle perspective by 2020, which was achieved already in 2019. A strategy update undertaken the same year put the ambition to reduce CO2 emissions by another 30% by year 2030. We will do this through greener sourcing and greener production. We are also helping our customers reduce their footprint through our greener products. The energy mix at alumina refiner Alunorte is crucial for our climate ambition. Changing from oil to gas in the calciners will reduce CO2 emissions very significantly. Switching from coal boilers to renewable power will also contribute greatly in the time perspective until year 2030 The ambition of Primary Metal is to reduce specific greenhouse gas emissions by another 8 percent by 2030 from an already first-tier level. Through digitalization and big data, we make better use of simulations and predictions to optimize and get more out of less. More renewable power in our energy mix and operational improvements will contribute to further reductions in carbon footprint. Hydro is one of the largest corporate buyers of long-term renewable energy contracts in Europe. By committing to long-term contracts, we not only improve our own footprint, we also support and enable more renewable energy projects to be realized and become financially

		viable.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Capital allocation Access to capital	Risk assessment is a key element of a sound financial planning process. Hydro is exposed to physical climate related risks, risks related to the transition to a low-carbon economy and other environmental risks. Climate-driven changes in consumer behavior, such as substitution of aluminium by other materials is also a risk to Hydro. Supported by an increasing interest from the regulators, customers and financial markets, Hydro believes that leading in sustainability is a strong foundation for long-term license to operate and a key driver for long-term profitability. By emphasizing climate, environment and social responsibility, as well as by developing greener product offerings, Hydro will reduce risks, including financial risk, and create new profitable opportunities for the future. All acquisitions and new investment decisions are stress-tested for alternative climate scenarios, including different carbon cost regimes, for assessing net present value and project risk. Mitigating climate risk also creates financial opportunties. In order to ensure strong liquidity, Hydro has replaced the NOK 1.7 billion undrawn revolving credit facility that expired in 2019 with a new NOK 1.6 billion facility expiring in 2025. The margin on the new facility is linked to Hydro's CO2 emission reduction target, thereby linking financing costs to the progress on Hydro's main climate target and highlighting the important connection between sustainability and profitability.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2018

Covered emissions in base year (metric tons CO2e)

13,300,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2030

Targeted reduction from base year (%)

30

Covered emissions in target year (metric tons CO2e) [auto-calculated]

9,310,000

Covered emissions in reporting year (metric tons CO2e)

11,850,000

% of target achieved [auto-calculated]

36.3408521303

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

Other, please specify

Please explain (including target coverage)

We have set targets to reduce greenhouse gas emissions by 10 percent by 2025 and 30 percent by 2030, based on a 2018 baseline (2017 for Paragominas, Alunorte and Albras due to the production embargo at Alunorte and curtailment at Albras and Paragominas). The baseline emissions equal 13.3 million tonnes CO2e and includes direct emissions and indirect emissions from electricity generation (scope 1 and scope 2 emissions). The EU has defined aluminium as a critical raw material for the green transition in Europe. See more in Hydro's Annual Report 2020, page 13 and 89.

Target reference number

Abs 2

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2018

Covered emissions in base year (metric tons CO2e)

13,300,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2025

Targeted reduction from base year (%)

10

Covered emissions in target year (metric tons CO2e) [auto-calculated]

11,970,000

Covered emissions in reporting year (metric tons CO2e)

11,850,000

% of target achieved [auto-calculated]

109.022556391

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

Other, please specify

Please explain (including target coverage)

We have set targets to reduce greenhouse gas emissions by 10 percent by 2025 and 30 percent by 2030, based on a 2018 baseline (2017 for Paragominas, Alunorte and Albras due to the production embargo at Alunorte and curtailment at Albras and Paragominas). The baseline emissions equal 13.3 million tonnes CO2e and includes direct emissions and indirect emissions from electricity generation (scope 1 and scope 2 emissions). The EU has defined aluminium as a critical raw material for the green transition in Europe. See more in Hydro's Annual Report 2020, page 13 and 89.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 2

Year target was set

2012

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based) +3 (downstream)

Intensity metric

Base year

2014

Intensity figure in base year (metric tons CO2e per unit of activity)

2,000,000

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2020

Targeted reduction from base year (%)

100

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

% of target achieved [auto-calculated]

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

Please explain (including target coverage)

Hydro's ambition was to be carbon-neutral in a life-cycle perspective by 2020 and this was achieved in 2019. 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. Hydro seeks to reduce total emissions by increasing energy efficiency, recycle more post-consumer aluminium scrap and direct more of our metal production towards markets where benefits in the use phase can be demonstrated.

See more in Hydro's Annual Report 2019, page 81-84.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 3

Year target was set

2014

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify

Other, please specify

Increase recycling of post consumer scrap (metric tonnes pr year)

Target denominator (intensity targets only)

Base year

2014

Figure or percentage in base year

0

Target year

2020

Figure or percentage in target year

250,000

Figure or percentage in reporting year

% of target achieved [auto-calculated]

Target status in reporting year

Is this target part of an emissions target?

Is this target part of an overarching initiative?

Other, please specify

This is a part of Hydro's climate strategy to become carbon neutral from a life cycle perspective by 2020 (achieved in 2019)

Please explain (including target coverage)

Original target by 2020 will not be met. The ambition is included in the new improvement program and subject to positive business cases.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*		
Not to be implemented		

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes

Fuel switch

Estimated annual CO2e savings (metric tonnes CO2e)

Scope(s)

Scope 1

Voluntary/Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

>25 years

Estimated lifetime of the initiative

>30 years

Comment

The Alunorte fuel switch project will replace heavy fuel oil with natural gas at the Hydro Alunorte alumina refinery in Brazil. The fuel switch will reduce the refinery's annual CO2 emissions by 600,000 tonnes.

The fuel switch project is pending final investment decision, expected by the end of 2021.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low-carbon product R&D	Most of our product development supports products that can help the customers to reduce their GHG emissions. Examples are lighter vehicles, buildings with reduced energy consumption and packaging that efficiently protects food and thus reduce food waste while reducing the need for cooling. Recycling of metal is another way of producing high quality metal with only 5 percent of the energy required to produce primary metal.

Compliance with regulatory requirements/standards	From 2013 the aluminium industry became part of the EU/ETS quota system. The aluminium industry has been allocated free quotas for part of its direct emissions according to a benchmark starting at 1,514 ton CO2e/ton aluminium in 2013. However, the number of free quotas allocated has been reduced by 5,6% from 2013 and thereafter with an annual linear reduction factor of 1,74 percent. EU has also decided to open for compensation for the CO2 element in the power price for the aluminium industry. The compensation might be given by member states based on a benchmark for energy efficiency (kWh/kg aluminium). The benchmark has been set to 14.256 MWh/ton primary aluminium AC. The compensation will be reduced from 85 % in 2013 to 75 % by 2020.
Dedicated budget for energy efficiency	Most of our R & D budget related to primary metal production is dedicated to energy efficiency. R & D activities within recycling have also overall energy efficiency as the ultimate consequence. Aluminium can be recycled infinitely without degradation of quality , and recycling requires 95 percent less energy than primary aluminium production.
Partnering with governments on technology development	We have an extensive programme, particularly in Norway . The most important example is the 75,000-metric-ton pilot plant built at Karmøy, Norway, with the aim of full-scale industrial testing of our new proprietary technology. Of a total cost of NOK 4.3 billion, the Norwegian public enterprise Enova which supports new energy and climate-related technology, contributed NOK 1.6 billion. Please see page 18 and 263 https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Company-wide

Description of product/Group of products

Hydro launched two new low-carbon aluminium brands in 2019, Hydro CIRCAL and Hydro REDUXA. Hydro CIRCAL is a range of products made with recycled post-consumer scrap, and sales of CIRCAL products were around 16,000 mt in 2020 aiming for 65,000 mt for the years 2020-2021 combined. By using recycled content, we reduce

energy use substantially while still being able to offer high-quality products. CIRCAL contains a minimum of 75 percent post-consumer scrap. Hydro REDUXA is our series of certified, low-carbon primary aluminium. REDUXA is produced with renewable energy, and guarantees a maximum carbon footprint of 4.0 kg CO2 per kg aluminium – 25 percent of the global average.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

% revenue from low carbon product(s) in the reporting year

Comment

Level of aggregation

Company-wide

Description of product/Group of products

Hydro seeks to reduce total emissions by increasing energy efficiency in our production, recycle more post-consumer
aluminium scrap and direct more of our metal production towards markets where benefits in the use phase can be demonstrated.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

% revenue from low carbon product(s) in the reporting year

Comment

A significant part of our products can reduce the customers' emissions during the use-phase. Please see Hydro's Annual Report 2019 page 82-83 and 100-101

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2012

Base year end

December 31, 2012

Base year emissions (metric tons CO2e)

9,699,285

Comment

Scope 2 (location-based)

Base year start

January 1, 2012

Base year end

December 31, 2012

Base year emissions (metric tons CO2e)

3,903,035

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

9,555,286

Start date

January 1, 2020

End date

December 31, 2020

Comment

Hydro's direct greenhouse gas emissions increased in 2020 due to increased production at Hydro's alumina refinery Alunorte. However, specific emissions per ton alumina produced decreased due to improved operational performance. Production at Alunorte was impacted by the embargo in 2018 and 2019, and returned to normal levels during 2020

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

9,329,245

Start date

January 1, 2019

End date

December 31, 2019

Comment

Production, and subsequently emissions, at Alunorte were impacted by the embargo in 2018 and 2019

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

8,970,324

Start date

January 1, 2018

End date

December 31, 2018

Comment

Production, and subsequently emissions, at Alunorte were impacted by the embargo in 2018 and 2019

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

10,230,610

Start date

January 1, 2017

End date

December 31, 2017

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

Comment

Although Hydro has operations in regions where green certificates like Guarantees of Origin is traded, we do not report emissions according to the market-based approach. We do not believe that a market based approach gives a correct picture of our emissions, as trading of these certificates has no physical connection to our production. In our opinion, this virtual trading of "green" electricity is thus only an administrative improvement, and does not reflect actual physical improvements. Trading of these certificates is an easy and cheap way of greenwashing a production that in fact is physically connected to fossil energy consumption.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

2,294,714

Start date

January 1, 2020

End date

December 31, 2020

Comment

From 2020, we have updated indirect emissions for our operations in Norway, Canada and the primary aluminum producer Albras in Brazil to reflect the green power contracts entered for these installations and set their emissions to zero. The update includes historical emissions.

Past year 1

Scope 2, location-based

2,340,755

Start date

January 1, 2019

End date

December 31, 2019

Comment

From 2020, we have updated indirect emissions for our operations in Norway, Canada and the primary aluminum producer Albras in Brazil to reflect the green power contracts entered for these installations and set their emissions to zero. The update includes historical emissions.

Past year 2

Scope 2, location-based

2,689,676

Start date

January 1, 2018

End date

December 31, 2018

Comment

From 2020, we have updated indirect emissions for our operations in Norway, Canada and the primary aluminum producer Albras in Brazil to reflect the green power contracts entered for these installations and set their emissions to zero. The update includes historical emissions.

Past year 3

Scope 2, location-based

2,789,390

Start date

January 1, 2017

End date

December 31, 2017

Comment

From 2020, we have updated indirect emissions for our operations in Norway, Canada and the primary aluminum producer Albras in Brazil to reflect the green power contracts entered for these installations and set their emissions to zero. The update includes historical emissions.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Please explain

As Hydro is an integrated company, with ownership along the whole aluminium value chain, the majority of Hydro's emissions are covered within scope 1 and 2 emissions. Hydro has a long position in alumina, but due to the production embargo at Alunorte in 2018 and 2019, we have sourced more alumina from external sources. Sourced alumina was 3 million metric tons in 2020 and 2.8 million mt in 2019, this compares to 4 million tons in 2018. As Alunorte's greenhouse gas emissions performance level is quite close to the global average, we have assumed that purchased alumina has a similar GHG intensity as Alunorte. Scope 3 emissions cover other greenhouse gas emissions from e.g. external transport, purchasing of cold metal and other input materials. As part of Hydro's new climate strategy we are evaluating the size of our scope 3 emissions in order to establish targets on greener sourcing.

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

This constitutes a negligible contribution to Hydro's total emissions.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Please explain

All relevant fuel- and energy-related activities included in scope 1 and 2.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

This constitutes a negligible contribution to Hydro's total emissions.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Please explain

E.g. spent potlining is supplied to the cement industry and used as an energy source. The emissions are then part of the cement industry's life cycle accounts

Business travel

Evaluation status

Not relevant, explanation provided

Please explain

This constitutes a negligible contribution to Hydro's total emissions.

Employee commuting

Evaluation status

Not relevant, explanation provided

Please explain

This constitutes a negligible contribution to Hydro's total emissions.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Not applicable for Hydro operations.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

As Hydro is an integrated company, with ownership along the whole aluminium value chain, the large majority of Hydro’s emissions are covered within scope 1 and 2 emissions. Scope 3 emissions are mainly relevant for e.g. external transport, contributing with significantly less than 5 percent of Hydro’s total greenhouse gas emissions, and thus within our anticipated error margin of less than 5 percent.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

This constitutes a negligible contribution to Hydro's total emissions.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

Aluminium products used in transport, buildings and packaging applications can contribute significantly to reduced emissions in the use phase.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

Recycling of used aluminium saves 95% of energy consumption and emissions compared to primary production.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant for Hydro.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant for Hydro.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant for Hydro.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

Marginal contribution in total picture.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

Marginal contribution in total picture.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.000085

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
11,850,000

Metric denominator
unit total revenue

Metric denominator: Unit total
138,118,000,000

Scope 2 figure used
Location-based

% change from previous year

Direction of change

Reason for change

Intensity figure
6.86

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
11,850,000

Metric denominator
metric ton of aluminum

Metric denominator: Unit total
1,726,000

Scope 2 figure used
Location-based

% change from previous year

Direction of change

Reason for change

Hydro's emissions and production figures were in 2018 and 2019 impacted by the embargo at Alunorte, and returned to normal levels during 2020.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
PFCs	265,992	IPCC Fifth Assessment Report (AR5 – 100 year)
CO2	9,302,666	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	78.46	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	66.96	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Australia	147,000
Brazil	3,582,888
Canada	252,952
Germany	567,272
Norway	1,855,114
Slovakia	153,275
Qatar	2,428,005.36
Netherlands	62,828.29
United States of America	325,276.58
Other, please specify	116,698.2

United Kingdon, Poland, Italy, France and Belgium	

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Alunorte, Brazil	3,058,223	-1.4	-48.44
Albras, Brazil	396,844	-1.4	-48.44
Alouette, Canada	225,513	50.16	-66.44
Husnes, Norway	167,955	59.87	5.77
Høyanger, Norway	109,468	61.22	6.07
Karmøy, Norway	433,575	59.31	5.31
Neuss, Germany	300,438	51.15	6.78
Qatalum, Qatar	2,428,005	24.97	51.57
Slovalco, Slovakia	152,299	48.58	18.87
Sunndal, Norway	669,886	62.67	8.56
Tomago, Australia	147,099	-32.82	151.72
Årdal, Norway	455,144	61.31	7.82
Rest of Hydro	1,010,837		

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Metals and mining production activities	8,999,055.17	Scope 1 emissions related to Hydro's ownership equity in metals and mining production activities, i.e. bauxite mining, alumina refining and primary aluminium production.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Australia	712,710			
Brazil	390,181			
Canada	237,828			
France	3,925.48			
Germany	1,026,009.77			
Luxembourg	1,053.01			
Norway	135,195			
Slovakia	158,726.28			
United States of America	151,359.44			
Netherlands	18,249.11			
Qatar	3,549.08			
Other, please specify Belgium, Italy, Poland, UK ...	61,241.36			

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Alunorte, Brazil	58,736.72	
Albras, Brazil	296,193.61	
Alouette, Canada	233,545.62	

Husnes, Norway	12,519.07	
Høyanger, Norway	8,188.4	
Karmøy, Norway	31,614.91	
Neuss, Germany	787,996.49	
Qatalum, Qatar	3,549.08	
Slovalco, Slovakia	105,286.31	
Sunndal, Norway	51,147.38	
Tomago, Australia	712,710.66	
Årdal, Norway	29,989.65	
Other	37,900.45	

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Metals and mining production activities	1,956,310.48		Scope 2 emissions related to Hydro's ownership equity in metals and mining production activities, i.e. bauxite mining, alumina refining and primary aluminium production.

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities				
Divestment				
Acquisitions				
Mergers				
Change in output				
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other	190,000			Hydro's direct greenhouse gas emissions increased in 2020 due to increased production at Hydro's alumina refinery Alunorte. However, specific emissions per ton alumina produced decreased due to improved operational performance. Production at Alunorte was impacted by the embargo in 2018 and 2019, and returned to normal levels during 2020.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

Don't know

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)		32,073,026	32,073,026
Consumption of purchased or acquired electricity		10,319,307	5,809,879	16,129,187

Consumption of self-generated non-fuel renewable energy		11,522,000		11,522,000
Total energy consumption				59,724,213

C-MM8.2a

(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	LHV (lower heating value)	28,727,943
Consumption of purchased or acquired electricity		12,069,056.81
Consumption of self-generated non-fuel renewable energy		11,522,000
Total energy consumption		52,318,999

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

3,531,381

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

Emission factor

Unit

Emissions factor source

Comment

Fuels (excluding feedstocks)

Gas Oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

411,265

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

Emission factor

Unit

Emissions factor source

Comment

Fuels (excluding feedstocks)

Crude Oil Extra Heavy

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

5,936,722

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

Emission factor

Unit

Emissions factor source

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

16,921,735

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

Emission factor

Unit

Emissions factor source

Comment

Fuels (excluding feedstocks)

Liquefied Natural Gas (LNG)

Heating value

Total fuel MWh consumed by the organization

634,623

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

Emission factor

Unit

Emissions factor source

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	11,522,000	11,522,000	11,522,000	11,522,000
Heat				
Steam				
Cooling				

C-MM8.2d

(C-MM8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed for metals and mining production activities.

	Total gross generation (MWh) inside metals and mining sector boundary	Generation that is consumed (MWh) inside metals and mining sector boundary
Electricity	11,522,000	11,522,000
Heat		
Steam		
Cooling		

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Waste

Metric value

679,700

Metric numerator

Metric tons excluding tailings and bauxite residue

Metric denominator (intensity metric only)

% change from previous year

14

Direction of change

Increased

Please explain

From 2020, waste is no longer reported according to the European Waste Codes (as defined in the EU Waste Framework Directive). Instead, waste has been reported according to a harmonized categorization within Hydro, based on the common names of key waste streams relevant to our operations (e.g. bauxite residue, SPL, waste caustic soda etc.). This change in reporting was implemented to facilitate aggregation of data at a group level and avoid the use of multiple waste codes for the same waste category.

Description

Land use

Metric value

8,237

Metric numerator

Hectares of area affected by mining operations

Metric denominator (intensity metric only)

% change from previous year

3.5

Direction of change

Increased

Please explain

Description

Waste

Metric value

3,345,000

Metric numerator

Metric tons of bauxite tailings

Metric denominator (intensity metric only)

% change from previous year

16.5

Direction of change

Increased

Please explain

There was a significant decrease in 2018 due to the Alunorte embargo (bauxite residue) and the corresponding Paragominas curtailment (tailings). This is partly reversed in 2019 and 2020 due to lifting of the embargo and ramp-up of production.

Description

Waste

Metric value

4,824,600

Metric numerator

Metric tons of bauxite residue (red mud)

Metric denominator (intensity metric only)

% change from previous year

24.7

Direction of change

Increased

Please explain

There was a significant decrease in 2018 due to the Alunorte embargo (bauxite residue) and the corresponding Paragominas curtailment (tailings). This was partly reversed in 2019 and 2020 due to lifting of the embargo and ramp-up of production.

C-MM9.3a

(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.

Output product

Bauxite

Capacity, metric tons

12,300,000

Production, metric tons

8,640,000

Production, copper-equivalent units (metric tons)

Scope 1 emissions

108,254

Scope 2 emissions

31,273

Scope 2 emissions approach

Location-based

Pricing methodology for copper-equivalent figure

Comment

C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

Output product
Alumina

Capacity (metric tons)
6,200,000

Production (metric tons)
5,487,000

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)
3,058,223

Scope 2 emissions (metric tons CO2e)
58,736

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure

Comment

Output product
Aluminum

Capacity (metric tons)
2,228,000

Production (metric tons)
2,091,000

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)

5,723,389.09

Scope 2 emissions (metric tons CO2e)

2,518,229.84

Scope 2 emissions approach

Location-based

Pricing methodology for-copper equivalent figure

Comment

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-MM9.6a

(C-MM9.6a) Provide details of your organization's investments in low-carbon R&D for metals and mining production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Green metals	Pilot demonstration			Hydro's Technology Pilot at Karmøy, Norway, the HAL4e technology was successfully verified in 2020 after a two-year internal testing program. The industrial-scale pilot plant produces the world's most climate friendly and energy efficient primary aluminium, operating at around 15

				percent lower energy consumption than the world average.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No emissions data provided

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

2020 Hydro CDP letter.pdf

Limited Assurance.pdf

Hydro Annual Report 2020.pdf

Page/ section reference

This is an excerpt from the annual report 2020 page 276 (https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf)

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

2020 Hydro CDP letter.pdf

Limited Assurance.pdf

Hydro Annual Report 2020.pdf

Page/ section reference

This is an excerpt from the annual report 2020 page 276 (https://www.hydro.com/globalassets/download-center/investor-downloads/ar20/annual-report-2020-new.pdf)

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C0. Introduction	Other, please specify	ISAE 3000	All high Level information as included in Hydro's Annual Report 2020
C1. Governance		ISAE 3000	All high Level information as included in Hydro's Annual Report 2020

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Québec CaT - ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Comment

Québec CaT

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

To reduce the emissions to comply with the requirements and to purchase credits and allowances for the residual.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities

GHG Scope

Scope 1
Scope 2

Application

Hydro uses the European cost of carbon for internal calculations as several of our smelters and rolling mills are part of the EU ETS directive. In areas where CO2 regulation is planned or due to be implemented, we have our predictions which we implement in our business cases. The cost of carbon is integrated in all financial and operational decisions. By including a carbon cost in our analysis, costs related to CO2 emissions become a variable operational cost at plant level and CO2 price expectations influence future investment decisions. The internal CO2 price forecast runs through 2035 and is based on expectations for the supply and demand balance and policy and regulations. The great challenge related to CO2 price forecasts are future and unexpected changes in policies and regulation that directly and indirectly influence the demand and supply balance.

Actual price(s) used (Currency /metric ton)

Variance of price(s) used

Type of internal carbon price

Other, please specify

We are currently using actual carbon prices where a carbon regulations are in place. In areas where CO2 regulation is planned or due to be implemented, we have our predictions which we implement in our business cases.

Impact & implication

The impact and implication varies between countries and business activities

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Details of engagement

% of suppliers by number

% total procurement spend (direct and indirect)

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

Comment

For Hydro's engagement with partnerships please see https://www.hydro.com/en-NO/sustainability/partnerships/ and the sections "Partnerships" an d "Stakeholder Dialogue" in Hydro's Annual Report.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

For Hydro's engagement with partnerships please see https://www.hydro.com/en-NO/sustainability/partnerships/ and the sections "Partnerships" an d "Stakeholder Dialogue" in Hydro's Annual Report.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Other

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

For Hydro's engagement with partnerships please see https://www.hydro.com/en-NO/sustainability/partnerships/ and the sections "Partnerships" and "Stakeholder Dialogue" in Hydro's Annual Report.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

For Hydro's engagement with partnerships please see https://www.hydro.com/en-NO/sustainability/partnerships/ and the sections "Partnerships" and "Stakeholder Dialogue" in Hydro's Annual Report.

C12.4

(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Head of Extra-Financial Reporting	Other, please specify VP & Head of ESG Reporting

Please confirm below

I have read and accept the applicable Terms