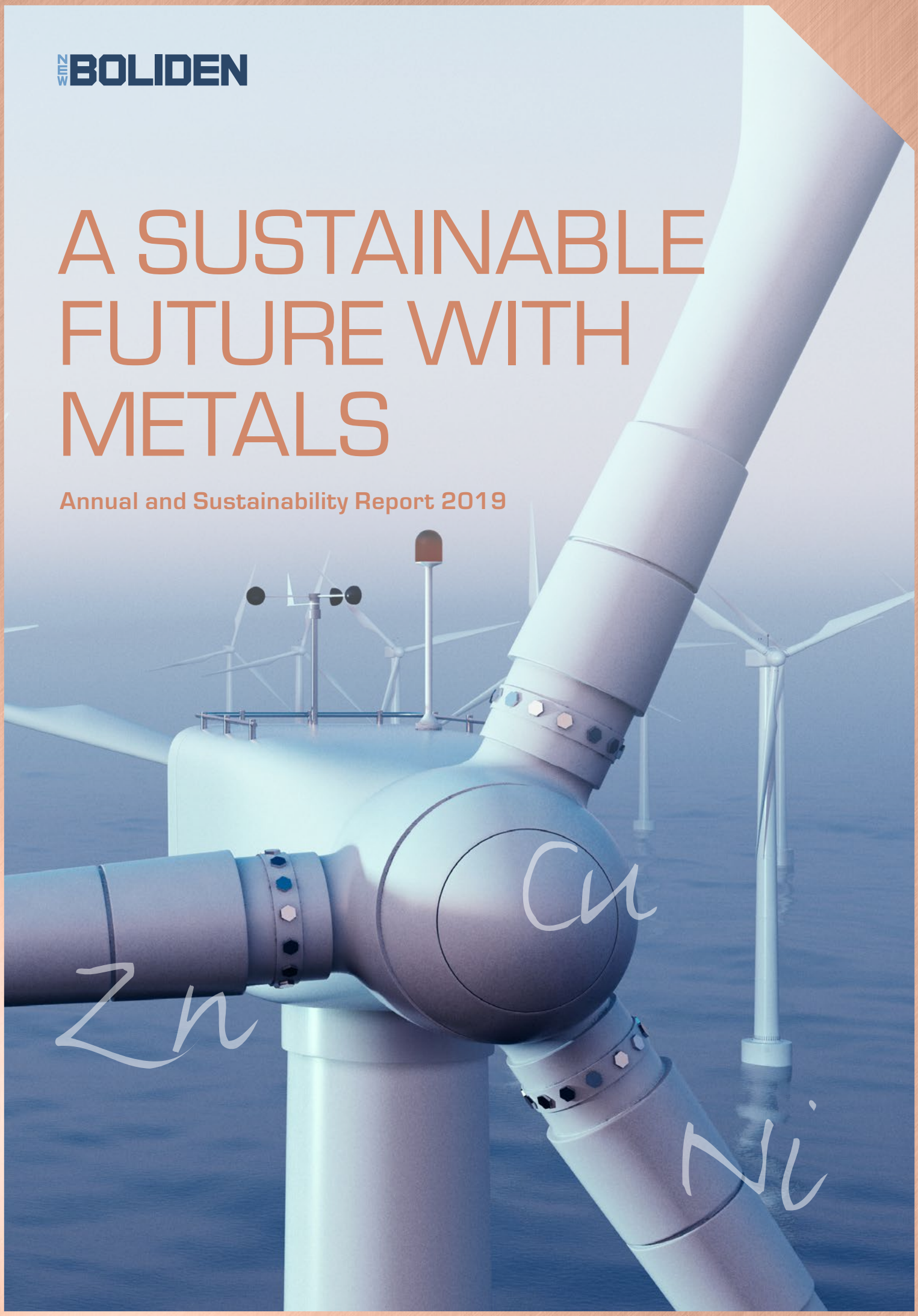
BOLIDEN

A SUSTAINABLE FUTURE WITH METALS

Annual and Sustainability Report 2019



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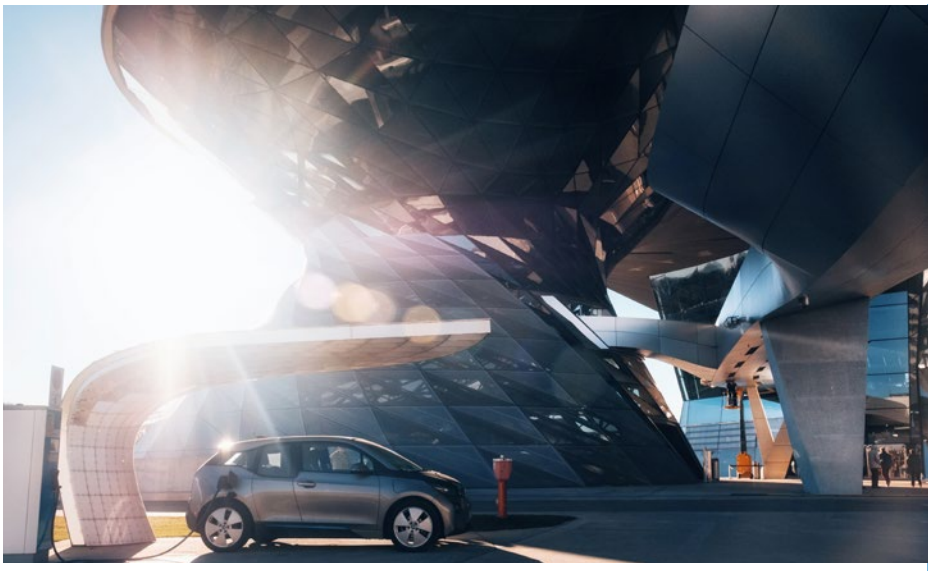
About Boliden's Annual and Sustainability Report
The Annual and Sustainability Report describes Boliden's financial performance and sustainability work. The Directors' Report comprises pages 6-9, 18-20, 22-26, 28-36, 38-47 and 56-69. Boliden's Sustainability Report as required by Chapter 6, section 11 of the Swedish Annual Accounts Act, is presented on pages 6-9, 24-25, 30-36, 38-41, 56-57 and 59.



Trends that shape metal demand

Throughout the ages, base metals have always been part of progress due to their properties. In the context of adapting to climate change, these properties grow in significance.

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Productive mines and smelters

The competitiveness of the individual mines and smelters relies on stable processes and high productivity. Boliden's broad portfolio of base metals and precious metals provides better stability over pricing cycles.

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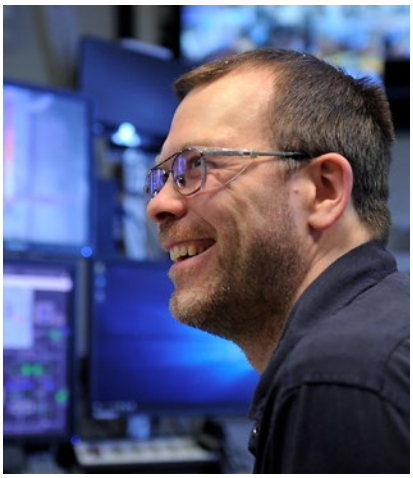


High levels of skills and sustainable work environments

Boliden offers meaningful, safe and healthy jobs in stimulating work environments. Innovation and modern technology support day-to-day work.

32.

BOLIDEN – metals for a sustainable society

Boliden produces metals that make modern society work. The operations are characterized by care for people, the environment, and society. Boliden enjoys a leading position in both sustainable mining and metal production and metals recycling. The combination of extensive experience and the development of best available technology ensures that our mines and smelters are well-positioned in the face of global competition.

The year in brief

- Operating profit excluding revaluation of process inventory decreased to SEK 7,035 m (9,074), due to lower volumes and metal prices.
- Free cash flow decreased to SEK 635 m (5,692). The decrease compared to last year is due mainly to higher investments.
- Extensive investment projects during the year included the acquisition of 26 new mining trucks for Aitik and Kevitsa, the expansion of Kevitsa to an annual production rate of 9.5 million tonnes, and the new leaching plant in Rönnskär.
- On 1 September, Daniel Peltonen took up his position as the new President of Business Area Boliden Smelters.
- For 2019, the Board proposes an ordinary dividend disbursement to shareholders in the amount of SEK 7.00 (8.75) per share (SEK 1,915 m).

Key data	2019	2018
Revenues, SEK m	49,936	52,454
Operating profit excl. revaluation of process inventory, SEK m	7,035	9,074
Operating profit, SEK m	7,597	9,004
Earnings per share, SEK	21.15	26.32
Free cash, SEK m	635	5,692
Investments, SEK m	8,826	6,140
Return on capital employed, %	16	20
Return on equity, %	14	19
Net debt/equity ratio, %	13	5
Dividend per share[1], SEK	7.00	8.75
Redemption per share, SEK	-	4.25
Accident rate (LTI frequency)	4.4	5.1
Metal intensity for discharges to water	35.9	40.6
Metal intensity for emissions to air	48.5	49.2
Carbon dioxide intensity	0.64	0.64
Number of serious environmental incidents	1	0

[1] The amount for 2019 refers to the proposed dividend.

Conveyor system and ore storage in the Kevitsa copper-nickel mine in northern Finland.

Operational focus and excellent earnings

Our focus during the year was on completing the growth projects in progress in our two business areas. Production was stable, while intensive development work was undertaken, especially in those units with major ongoing investment projects. Our ability to stay focused on the things we're able to influence will continue to be a success factor moving forward.

Boliden has a broad portfolio of metals, which provides a certain stability across price cycles. The zinc price in particular, but also the copper price, regressed somewhat during the year, but this was compensated by the price of nickel, gold and silver moving in the opposite direction. Our comprehensive metals portfolio also means we're a truly relevant operator in the adaptation to climate change that has begun in Europe.

High level of investment

The global economy has shown signs of a downturn during the year. At the same time, Boliden's investment level was higher than ever. Several of the investment projects are a result of successful in-house exploration combined with high stability in our operations. Taken together, these factors create good conditions for the completion of projects on time, and that commissioning of the capacity increase can take place in the best way. Thus our goal of producing 45 Mtonnes in Aitik and 3 Mtonnes in Garpenberg in 2020 remains unchanged. We were able to accelerate the goal of achieving a production rate in Kevitsa equivalent to 9.5 Mtonnes by the end of 2020, and we now plan to increase production during the first half of the year.

At our smelters, investments in growth projects were mainly carried out in Harjavalta and Rönnskär. The investment in Harjavalta involved the commissioning of the new sulfuric acid plant during the year and expanding the capacity of the copper smelter and refinery, which enabled an increase in copper production. In Rönnskär, investments are in progress for the completion of a leaching plant and an underground repository in 2020. Investments are also in progress to increase production capacity in 2021. Furthermore, significant planned maintenance investments were carried out during the year in Harjavalta and Rönnskär.

Improvement projects

In addition to the major growth investments, we both initiated and commissioned a number of improvement projects during the year. These include a new installation for separating plastic cases for lead acid battery recycling in Bergsöe, which reduces carbon dioxide emissions by 25%. We have begun investments in partial electrification of truck transports in Aitik and Kevitsa. The trolley solution we've chosen involves increased productivity, and improved working environment and reduced climate impact. Corresponding developments are also taking place in the underground mines, where machinery is electrically driven to an ever increasing extent.

Stability

A central part of our strategy is to safeguard high operational stability. Constant improvements combined with a high level of commitment from all employees boosts productivity while reducing e.g. accident risks and costs. This is part of our company culture, and is no less important than major growth investments. It is perhaps best exemplified this year by our zinc smelters in Kokkola and Odda, both of which have improved process stability. Overall, I'm happy with the work performed in all of our units. Important metrics confirming we're on the right track are the currently high safety level at our workplaces and that we achieved the lowest accident frequency ever in 2019.

Development

In terms of exploration, Boliden is one of Europe's biggest companies and its focus is primarily on existing mining areas. During the year, exploration activities continued unabated, and new reserves were identified in most mines to roughly the same extent as the volumes mined. The development of Tara Deep continues and we've now achieved an inferred mineral resource of 22 Mtonnes, despite our not having begun proper drilling from underground. Extensive exploration has also been carried out in the Boliden Area.

Sustainable raw materials supply

As energy systems transition away from fossil fuels, and the transport and industrial sectors are electrified, society's dependency on fossil fuels is reduced. At the same time, its dependency on base metals increases. All future societies with low climate impact will be built using more copper, zinc, nickel and other base metals than today. In the light of increasing dependency, it is naturally very important that the production of these metals takes

place as responsibly as possible. Equally as important is a high level of acceptance for long-term, responsible mining and metals operations in Europe. In my view, understanding for these connections has increased in recent years.

Today, the climate impact of our value chain is already significantly lower than the global average for our industry. Naturally, we're not satisfied with the status quo but will continue to gradually reduce the climate impact our operation gives rise to today. These efforts take place throughout the value chain, from own production to the transportation and input goods utilized. Furthermore, we're involved in traceability projects with an intention of being able to show the origin of metal, the carbon footprint it has and how large a proportion comes from recycling.

Today, Europe is highly dependent on imports of virtually all the base metals. By conducting operations sustainably combined with the ability to show where metals come from, we can further strengthen our position. This is also how responsible raw materials supply should look in practice.

Boosting competitiveness

It's been a historical year for Boliden. Never before have we invested so much in our business. The competitiveness of our mines and smelters has thus been strengthened. We will naturally encounter new challenges moving forward, but we will meet them from a strong position with high technical expertise and great commitment. Boliden and the metals we produce are part of the solution in adapting to climate change. I look forward to the coming year with confidence.

Mikael Staffas
President and CEO

> Our comprehensive metals portfolio also means we're a truly relevant operator in the adaptation to climate change that has begun in Europe.

Strategy for sustainable growth

Boliden's strategy prioritizes constant improvements and organic growth above acquisitions. Growth investments are made when stability and efficiency have been achieved in the operation and critical project resources are available. This strategy leads to high value creation and is based on a company culture characterized by great responsibility. Investments are prioritized at the group level with the aim of creating high, long-term value creation within the company.

CONSTANT IMPROVEMENTS

Improved stability and high productivity in existing facilities reduce costs, increase production, reduce the risk of accidents, and minimize environmental impact, all without the need for major investments. The elimination of bottlenecks in the value chain improves resource utilization and enhances value creation.

ORGANIC GROWTH

Boliden invests substantial resources in a range of major growth projects. These investments are made in existing mines and smelters in order to boost the long-term competitiveness of the units concerned. The work is led by internal project staff with high reliability in terms of good cost control and adherence to the commissioning schedule.

SELECTIVE ACQUISITIONS

Boliden evaluates various acquisition opportunities. Operational mines, new mining projects, and smelting and refining operations are all evaluated on the basis of the economic climate and Boliden's acquisition criteria. These criteria are based on the Group's risk profile and the potential for value creation through expertise and investment projects.

Snow clearance at the tailings dam in Kevitsa.

VISION

Metals are essential for the development of modern societies. Boliden's vision is to be among the industry's top-flight companies in terms of responsibility, value, progress and productivity. Boliden has a zero vision for accidents that affect people and the environment.

BUSINESS CONCEPT

By supplying, refining and recycling base metals and precious metals essential for society, Boliden forms an important part of the circular economy. We strive for optimum resource and material processing at every stage of the value chain, and seek to achieve sustainable development in terms of safety, environmental performance and business ethics.

Targets and outcomes

Strong profitability, safe workplaces and excellent environmental performance create the conditions for long-term, stable operations with high value creation.

FINANCIAL TARGETS

Return on investments

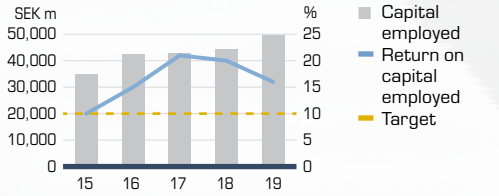
The return on investments shall be a minimum of 10%.

10%

PERFORMANCE

Return on capital employed totalled 16% (20). During the period 2015 – 2019, the rate of return average 16% per year. Any investments made shall be in line with Boliden's strategy and available resources and shall demonstrate a return of at least 10%.[1)]

DEVELOPMENT 5 YEARS

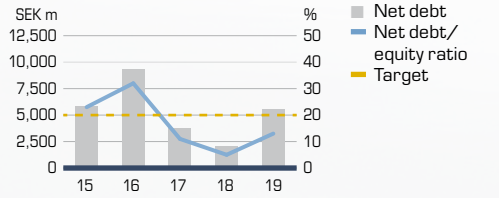


Net debt/equity ratio

Boliden endeavours to achieve a net debt/equity ratio in an economic upturn of approximately 20%.

20%

At the end of 2019, the net debt/equity ratio was 13% (5). The change compared with 2018 is explained by lower free cash flow resulting from higher investments and lower grades. In recent years, the reclamation liability has become an increasingly important balance sheet item. It is, however, not included in the net debt concept. In 2019, the target was specified to also include the net reclamation liability in the calculation.

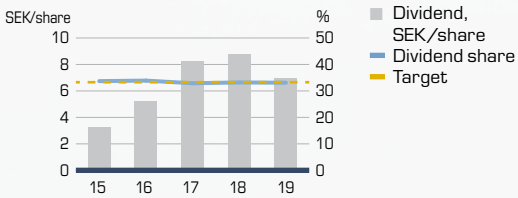


Dividend

The dividend shall correspond to one third of the net profit for the year.

1/3

The proposed ordinary dividend is SEK 7.00 (8.75) per share, equivalent to 33.1% (33.2) of the net profit for the year. Last year, an extra dividend of SEK 4.25 per share, in the form of an automatic share redemption procedure, was made. During 2015 – 2019, the ordinary dividend share comprised 33.3% of the period's total net profit.



[1)] The project's return shall exceed Boliden's weighted average cost of capital (WACC), adjusted for a risk premium (nominal WACC before tax is set at 12%, equivalent to 10% in real terms). Major and long-term projects are usually calculated in real terms. The calculations are based on forecasted interest rates, metal prices, exchange rates, inflation and other relevant assumptions based on internal analyses and external evaluations.

ENVIRONMENTAL TARGETS

PERFORMANCE

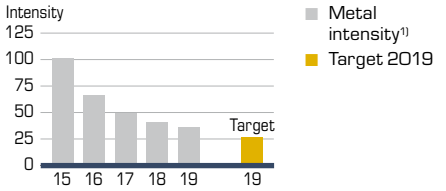
DEVELOPMENT 5 YEARS

Discharges to water

Metals to water shall be reduced by 1% per year.

–1%

The target for 2019 was not achieved, partly due to an unanticipated discharge of metals to water during the third quarter. However, thanks to investments in improved water treatment techniques, discharges of metals to water show a downward trend across the past five years. Boliden will continue to work with improvements.

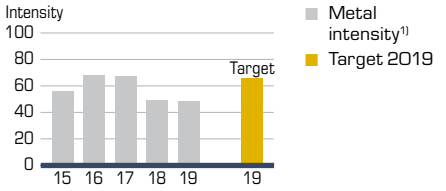


Emissions to air

Metals to air shall be reduced by 1% per year.

–1%

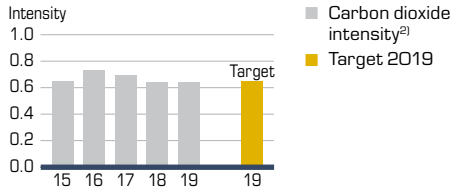
Thanks to investments in improved air purification techniques, emissions of metals to air show a downward trend across the past five years, and the target for 2019 was achieved. Boliden will continue to work with improvements.



CO_2intensity shall be reduced by 3% per year.

–3%

The carbon dioxide intensity is aligned with the 2019 target. Boliden is actively engaged in decreasing the operation's carbon dioxide emissions by expanding electrification of transport and increasing energy efficiency.

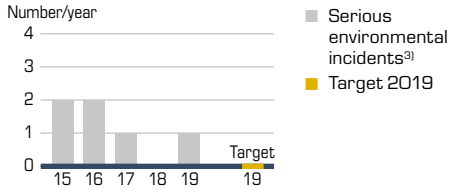


Environmental incidents

No serious environmental incidents should occur.

0

During the year, there was an unanticipated discharge of metals to water at the Rönnskär smelter. The annual limit for discharges of metals to water at the smelter was exceeded, thus the incident was classified as serious. However, according to an internal investigation, the total environmental impact of the discharge was limited.



SOCIAL TARGETS

PERFORMANCE

DEVELOPMENT 5 YEARS

Health and safety

Zero accidents with absence should occur.

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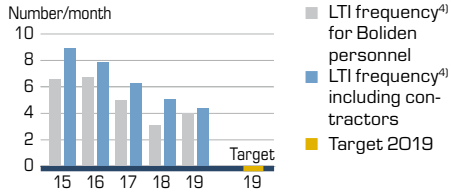
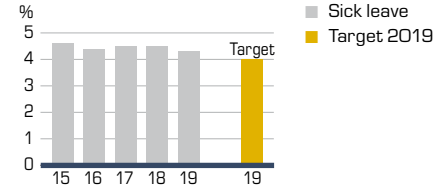
The frequency for the number of lost time injuries (LTI) for employees has fallen over the past five years by approximately 40%. One of the reasons is the increased involvement by management and employees alike in day-to-day safety efforts.



The sick leave rate shall remain below 4.0%.

<4%

During 2019, the sick leave frequency was 4.3% with seasonal variations during the year. Boliden will continue to prevent and rehabilitate both physical and mental ill health.

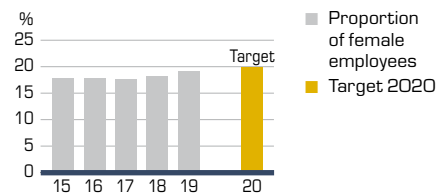


Equal opportunities

The proportion of women among total employees shall be 20% by 2020.

20%

In 2019, the proportion of women in Boliden was 19.2% of the total number of employees. Out of a total number of 537 new recruits, 138 were women, which means 26% for 2019.



[1] Emissions of tonnes metal equivalents per million tonnes of metal produced. Since 2019, the Natural Capital Protocol methodology is used to calculate metal equivalents.
[2] Emissions in tonnes of carbon dioxide per tonne metal produced.
[3] An incident that causes or has the potential to cause significant environmental damage.
[4] The number of accidents with absence per million hours worked

Business model

By efficiently extracting and refining the base metals and precious metals essential to society and recycling them after use, Boliden forms an important part of the circular economy. Collaboration with operators throughout the value chain helps enhance productivity and high resource utilization.

INPUTS

Capital

	2019	2018
Investments, SEK m	8,826	6,140
Capital employed, SEK m	49,809	44,441
Net debt/equity ratio, %	13	5

Know-how

- Patents, e.g. for electronics recycling, exploration technologies, water treatment
- Rights and permits
- Reclamation expertise
- R&D partnerships with universities, colleges, and suppliers

People

- Number of employees (FTE): 5,997 (5,819)
- Contractors and partners

Relationships

- Collaboration and dialogues with prioritized stakeholder groups
- Long-term development partnerships
- Participation in industry organizations

Natural resources

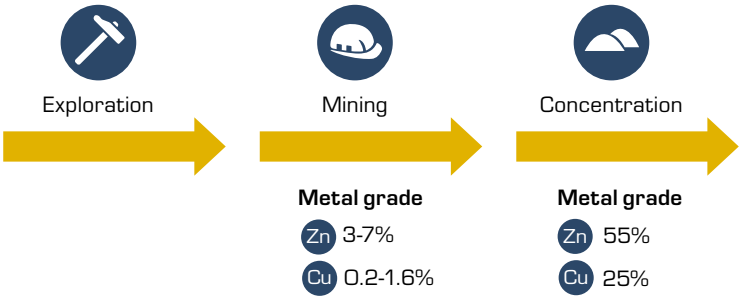
Natural assets	2019	2018
Mineral resources[1], Mtonnes	1,809	2,050
Mineral reserves[1], Mtonnes	1,433	1,385
Forests and land, ha	23,600	23,100

Raw materials	2019	2018
Energy, TWh	6.1	6.6
– of which electricity, TWh	4.5	4.5
Water[2], million m^3	132	145
Mined concentrate feed (primary material), ktonnes	2,281	2,394
Recycled materials (secondary materials), ktonnes	347	349

[1] Mineral assets include known and indicated assets. Mineral reserves include proven and probable reserves. For complete details on mineral reserves and assets, see pages 106-110.
[2] There is no shortage of water in the areas where Boliden conducts operations.

VALUE CREATION

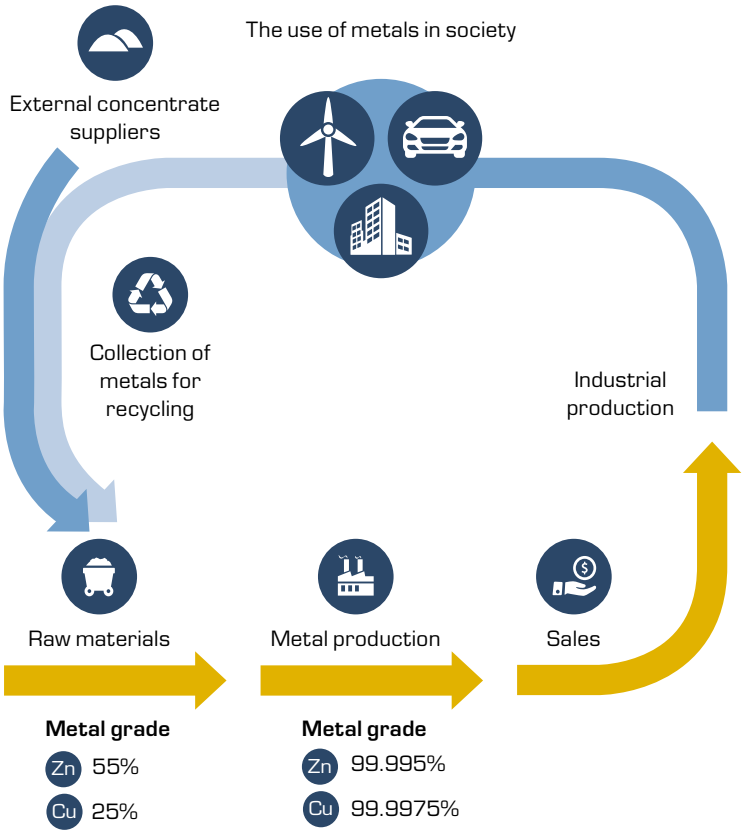
We create value for shareholders and society from exploration to the recycling of metals. Cutting-edge competence ensures competitiveness and the least possible environmental impact.



Production of metal in concentrate

	2019	2018
Zinc, ktonnes	290	290
Copper, ktonnes	121	140
Lead, ktonnes	55	55
Nickel, ktonnes	10	14
Gold, kg	7,257	7,678
Silver, kg	372,199	402,349

In addition to primary metals, concentrates contain other metals, which are mainly processed in Boliden's smelters.



Metal production

	2019	2018
Zinc, ktonnes	486	486
Copper, ktonnes	322	364
Lead and lead alloys, ktonnes	75	76
Nickel in matte, ktonnes	26	31
Gold, kg	14,976	16,653
Silver, kg	446,591	544,846

In addition to metal production, Boliden also produces large quantities of by-products such as sulfuric acid, tellurium, palladium, cobalt, nickel sulphate and copper residuals.

OUTCOMES

Economic impact

- Purchases: SEK 40,840 m (39,749)
- Salaries paid to employees: SEK 5,106 m (4,818)
- Dividends to shareholders[1]: SEK 1,915 m (3,556)
- Financial expenses including interest: SEK 272 m (242)
- Paid tax: SEK 2,060 m (2,286)
- Retained within Boliden: SEK -1,279 m (2,133)

Social impact

- Direct and indirect job opportunities in Sweden, Finland, Norway and Ireland
- Frequency of occupational accidents leading to absence from work, LTI: 4.4 (5.1)
- Sick leave: 4.3% (4.5)
- Involvement and value creation in local communities
- Utilization of land and water

Environmental impact

- The supply of metals necessary for societal development and adaptation to climate change

	2019	2018
Discharges of metals to water, tonnes, Me-eq[2]	51	61
Emissions of metals to air, tonnes, Me-eq[2]	69	74
Sulfur dioxide emissions, ktonnes	6.2	7.7
Carbon dioxide emissions, ktonnes[3]	917	971
Waste:		
i. Non-hazardous, ktonnes	249	279
ii. Hazardous, ktonnes	886	869

[1] 2019 refers to the proposed ordinary dividend of SEK 7.00 per share.
[2] Since 2019, the Natural Capital Protocol methodology is used to calculate metal equivalents.
[3] Carbon Dioxide includes scopes 1 and 2 according to the GHG protocol.

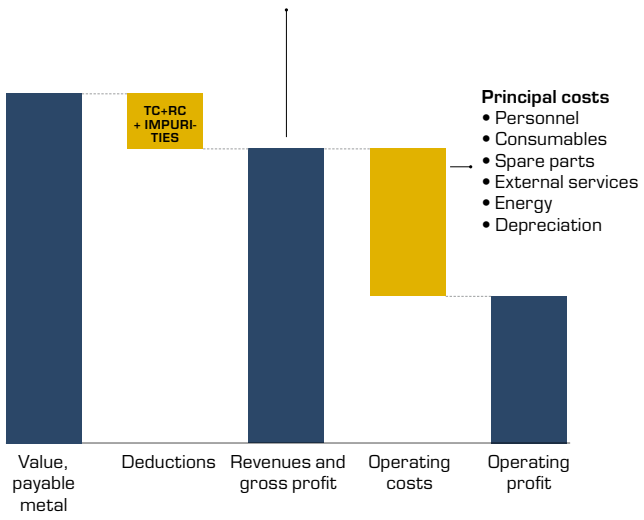
The model is based on the International Integrated Reporting Council's (IIRC) framework. The primary purpose of the model is to explain how the Group creates long-term value.

Income model

Boliden operates in the metal market's two subsidiary markets; selling raw materials from mines to smelters and selling metals, primarily to industrial customers. Boliden's integrated business model generates a number of synergies and ensures stable revenues for the Group, as the income cycle of mines and smelters often differ.

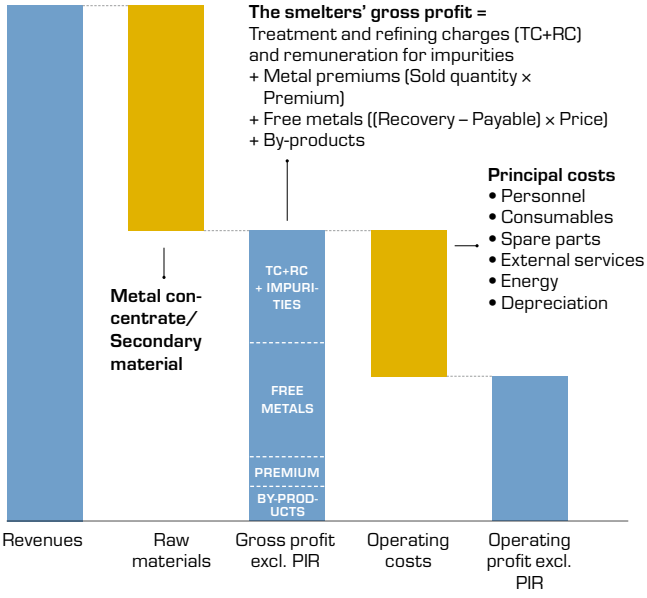
MINES

The mines' gross profit =
The value of metal concentrate (Price x Payable)
– Deductions for treatment, refining charges (TC+RC) and impurities



SMELTERS

The smelters' gross profit =
Treatment and refining charges (TC+RC) and remuneration for impurities
+ Metal premiums (Sold quantity x Premium)
+ Free metals ((Recovery – Payable) x Price)
+ By-products



Boliden's smelters have the capacity to process considerably larger volumes than those produced by Boliden's mines, and substantial volumes of concentrate are thus purchased from external mines. All sales of metal concentrates between Boliden's mines and smelters are on market terms. Bars in the charts are not to scale.

MINES

Boliden's Business Area Mines produces metal concentrates. Revenues are affected by ore tonnage, metal grades, recovery during the concentration process, the price of concentrates in USD, and exchange rate fluctuations.

Gross profit and revenues usually have the same value, as Mines has no input raw materials. Concentrate prices are an effect of the global market price of the pure metal and the payable metal content (the quantity of metal in concentrates for which the mines can get paid), less treatment and refining charges (TC and RC) and deductions for impurities in the concentrate. The levels of TC/ RC and impurity charges are determined in negotiations between mines and smelters.

Operating profit is gross profit less operating costs, the most important of which are personnel, consumables, spare parts, external services, energy and depreciation.

An individual mine has natural variations in grades, waste rock dilution, energy requirements at different depths, equipment maintenance and other factors that result in the profit varying over time. These variations are often known well in advance and are clearly defined in so-called life of mine plans. Boliden provides guidance on major changes in grades in the larger mines when grades are expected to significantly deviate from the reserves' average grades.

SMELTERS

Boliden's Business Area Smelters produces pure metals. Revenues comprise the LME price plus metal premiums. The metal premium is determined by regional supply and demand and constitutes a local adjustment of the LME price, including transportation and customized alloys, and is affected by payment terms.

Gross profit is the difference between revenues and the price of the raw materials, and consists of treatment and refining charges (from concentrates and secondary raw materials), remuneration for impurities, metal premiums, income from so-called free metals, and income from by-products. Free metals arise when the amount of metal recovered exceeds the payable metal content of purchased metal concentrates and secondary materials.

Sales of by-products extracted during the processing, such as sulfuric acid, also generate important revenues.

Operating profit comprises gross profit less operating costs, mainly personnel, consumables, spare parts, external services, energy, and depreciation. Boliden reports operating profit excluding revaluation of the smelters' process inventory (PIR), in order to provide a better picture of the underlying trend.

Unlike mines, smelters have a similar production situation over time with the exception of maintenance shutdowns, which are more comprehensive and usually grouped together – typically every third year and usually during the warmer part of the year. Boliden provides guidance on maintenance shutdowns for the year ahead.

Revenue components

Price	Global market price in USD, which is set on the LME and LBMA
Premium	Metal premiums, which comprise a local adjustment of the LME price
Payable	The payable metal content of the concentrates
TC	Treatment charges
RC	Refining charges
Impurities	Deduction/compensation for impurities in the metal concentrates/secondary materials
Recovery	Extracted metal as a percentage of the metal content, which depends on the quality of the process and the material
By-products	Income from by-products

Trends that shape the demand for metal

Boliden's metals are part of the past, the present and the future. Base metals have always been a key element in developments due to their properties – conductivity for electricity and heat, protection against corrosive and other demanding environments.

POPULATION GROWTH

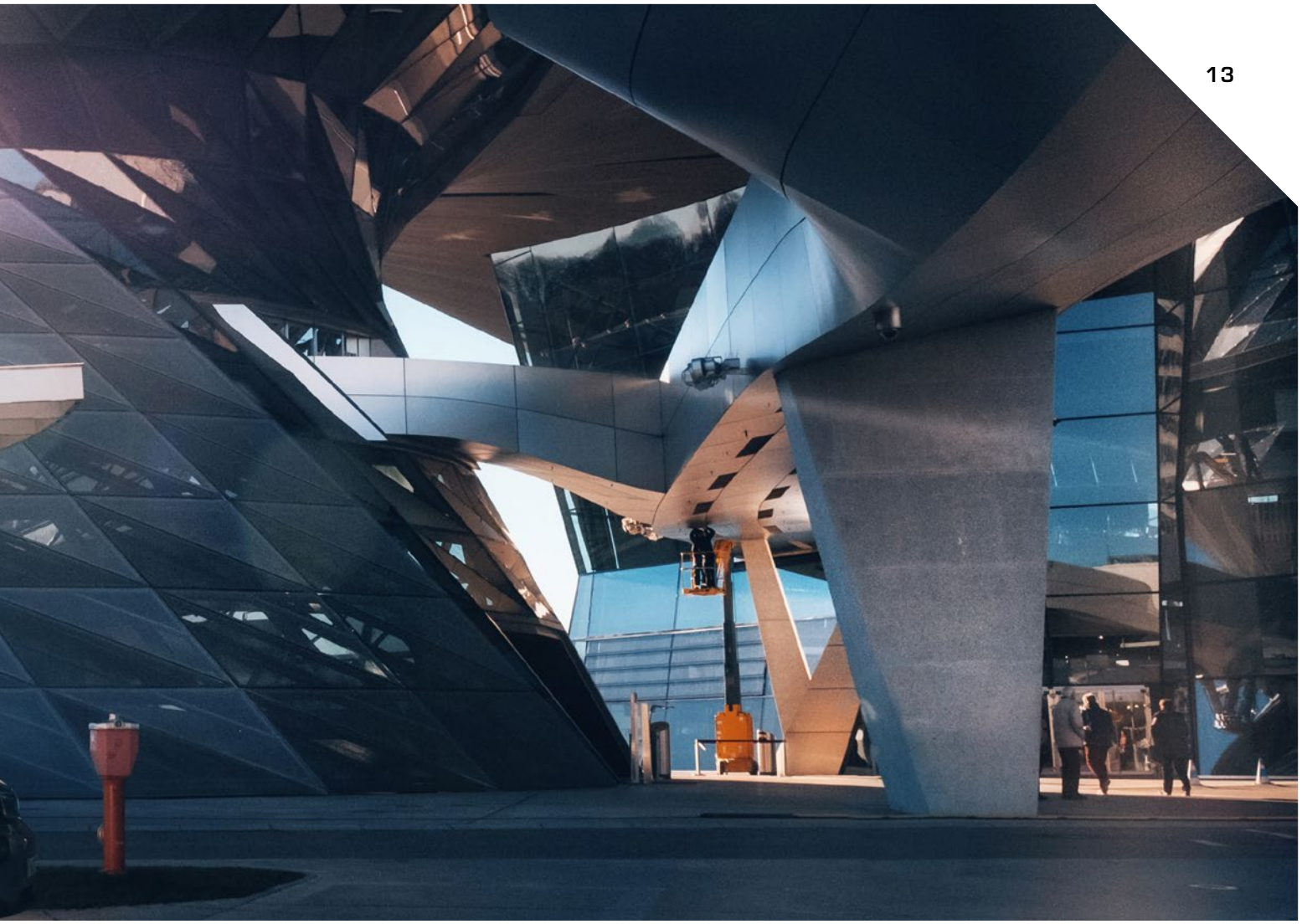
The world's population is growing, and demand for metal is growing in line with this. Over the past ten years, the world's population has increased by 1% per year and this trend is expected to continue. Of the world's population, 91% are below the age of 65 and 26% are below the age of 15. Population growth combined with urbanization and increased prosperity is driving the demand for metal around in the world.

Metals are required both in the early stages of economic development within societies as well as later. Increased access to electricity, heating and infrastructure is providing the conditions for people to drive industrial development in order to achieve increased prosperity. As the standard of living increases, there is continued growth in the demand for metals.

CLIMATE CHANGE ADAPTATION

Human impact on the climate is resulting in a considerable need to phase out our dependence on fossil fuels. Important aspects of this transition include fossil-free energy production, electrification and various changes in value chains in order to reduce our footprint on the environment. There are increasing demands for low-carbon production processes in industries and solutions for managing waste in the long term.

Metals are essential in almost all new choices of technologies and applications that will have a lower impact on the climate. Climate change adaptation is therefore also driving demand for copper, nickel and lead, for example.



URBANIZATION

People tend to gather in places where they can interact and participate in value chains that provide a higher standard of living. Urbanization in developing countries is particularly important when it comes to driving demand for metal.

Urbanization has come a long way in mature economies and population growth in cities combined with the need to regenerate urban structure, infrastructure and, above all, transport is continuing to drive this demand.

The proportion of the population who live in cities varies greatly. In the United States, the proportion stands at 82%, in China it is 60% and in India only 34%.

ECONOMIC GROWTH

The importance of increased prosperity in relation to demand for metal varies depending on how developed a country is. When basic factors such as access to water, electricity and heat are present, the growth in the standard of living can really accelerate.

Historically, demand for metal has grown fastest in countries with a GDP of between USD 5,000 and USD 15,000 per capita, but this can vary from country to country depending on the purchasing power of the population and which policy decisions are taken in respect of the distribution of resources.

Around half of the world's population have a GDP per capita of less than USD 5,000, while just over 35% are between USD 5,000–15,000.

INFRASTRUCTURE DEVELOPMENT

When a country moves from a low to a higher rate of urbanization, the expansion of infrastructure is intensive, although investments in infrastructure never actually stop.

Changes are constantly taking place within cities, and connections are required both between cities and as well as between cities and rural areas. This relates to roads, tunnels, bridges, means of transport, power line corridors, electricity charging stations, new heating solutions and many other areas that are driving investment in infrastructure. Infrastructure also ages and needs to be renewed.

Major infrastructure projects are often funded by states, which is why their economic development is of great importance.

PERSPECTIVE:
COPPER IN OUR LIVES

Copper has played a central role in social development towards higher living standards for hundreds of years. Today, copper also plays a key role in facilitating the ongoing climate change adaptation. When copper, for example, is used to conduct energy, it enables significant emissions reductions. Of the more than 600 Mtonnes of copper produced since 1900, it is estimated that two-thirds are still in use today according to the European Copper Institute.

With its high conductivity with regard to electricity and heat, for example, copper is a unique and critical raw material for modern economies and developing societies. This is characterized by urbanization, renewable energy production and increased electrification in society. In addition, large amounts of copper are required to transmit electricity with low losses.

Roughly a third of copper demand around the world is met through recycling. Like the vast majority of metals, copper can be recycled endlessly, without losing its properties or qualities through the recycling process.

60%

Copper is one of the best conductors of electricity and heat, and approximately 60% of total copper usage goes to these applications.

Cu

BOLIDEN AND COPPER

Boliden holds a strong position in Europe as a producer of copper concentrate. At the same time, Europe imports 80% of copper concentrates from other continents. On a global scale, Boliden is consequently a small player.

In 2019, Boliden produced a total of 121 ktonnes copper in concentrates in the Aitik, Kevitsa, Kylylahti, Kristineberg, Renström and Maurliden mines. The Rönnskär and Harjavalta copper smelters also purchase mined concentrates and secondary raw materials from external suppliers. The smelters produced 322 ktonnes of copper, of which recycling accounted for 20% in 2018. Industrial customers, in particular manufacturers of wire rod, rods and copper alloys in Europe, purchase the majority of the metal.

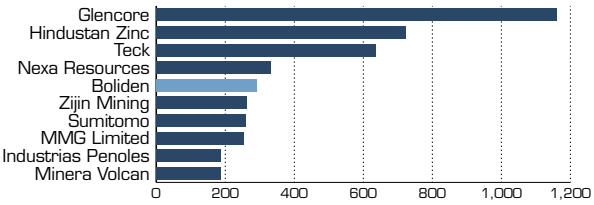
Market position

Boliden operates in a global market and is one of the world's largest zinc mining and smelting companies, as well as being a smaller yet still a leading player in Europe within copper. It has also built up a position within nickel in recent years. Boliden also enjoys a market-leading position in the field of electronics recycling and is a prominent player in the European lead recycling sector.

Mining companies – zinc

Boliden is the fifth largest zinc mining company in the world. Tara and Garpenberg are both large zinc mines by international standards. The Garpenberg and Boliden Area mines in Sweden receive revenues from a number of other metals, such as silver, gold, lead and copper, while Tara in Ireland receives limited revenues from by-product metals.

The ten largest zinc mining operators ktonnes of metal, 2019

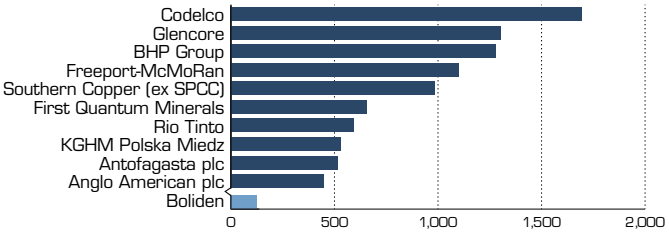


Source: WOOD MACKENZIE, JAN 2020

Mining companies – copper

Boliden is a minor operator in the global copper mining industry, but a significant one in Europe. The Aitik mine is a large mine with low grades, world-leading productivity and additional revenues from gold and silver. Kevitsa is a mine with good productivity and where the primary metals are nickel and copper. Copper is one of several metals in the Boliden Area.

The ten largest copper mining operators ktonnes of metal, 2019

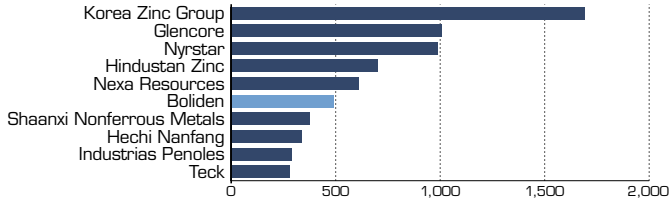


Source: WOOD MACKENZIE, JAN 2020

Smelting companies – zinc

Boliden is the sixth largest zinc smelting company in the world. The Kokkola smelter is a major zinc producer, while the Odda smelter is a medium-sized producer.

The ten largest zinc smelting operators ktonnes of metal, 2019

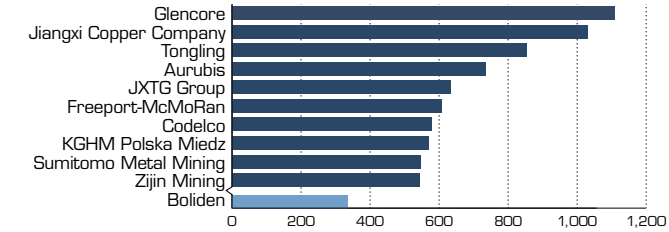


Source: WOOD MACKENZIE, JAN 2020

Smelting companies – copper

Boliden is the twentieth largest copper smelting company in the world. The Rönnskär smelter is a major copper producer and a world leader in electronics recycling. The Harjavalta smelter is a minor copper smelter, but is the biggest nickel smelter in western Europe. Measured as a producer of refined copper cathodes, Boliden is the twentieth largest company in the world.

The ten largest copper smelting operators ktonnes of metal, 2019



Source: WOOD MACKENZIE, JAN 2020

Mining and smelting companies – nickel

Boliden switched from subcontracted smelting on behalf of another company to its own production in 2015. Since then, Boliden has built up a network of concentrate suppliers and customers. The acquisition of the Kevitsa mine in Finland means that Boliden has the same integrated structure for nickel as for copper and zinc, with the exception that Boliden does not produce a finished metal, rather an intermediate product called nickel matte that is sold for further processing.

Mining and smelting companies – lead

Boliden is a significant global mining company when it comes to lead and a medium-sized smelting company for primary lead. The Bergsöe smelter also gives Boliden a significant position in the European lead recycling sector.

Competitiveness

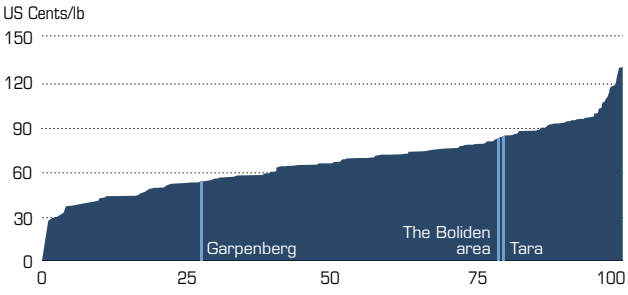
Metals are traded and priced on global exchanges. Competitive costs and sustainable processes are critical to long-term success in that the metals are largely produced and traded in their pure forms without distinguishing properties.

Unlike pure metals, mined concentrates are not traded on exchanges, but are priced by leading operators who announce their terms in the form of annual contracts known as benchmark contracts. The mines' cost per tonne of metal is well-known to the market's operators due to the information on cost levels, known as cash cost, regularly compiled by independent analysis companies. Strongly competitive mines often have high grades, substantial revenues from by-product metals, advantageous infrastructure and low costs. Smelters' competitiveness is usually compared using the cash margin metric, which is a more comparable metric, in that smelters extract multiple metals and by-products. Smelters' competitiveness depends on cost levels, stable processes, and the extraction of further metals and by-products in addition to their primary metals. The following graphs display data produced by an analysis company and were not compiled by Boliden.

CASH COST IN THE MINING INDUSTRY

Zinc – cash cost C1 composite costing

Source: WOOD MACKENZIE, JAN 2020

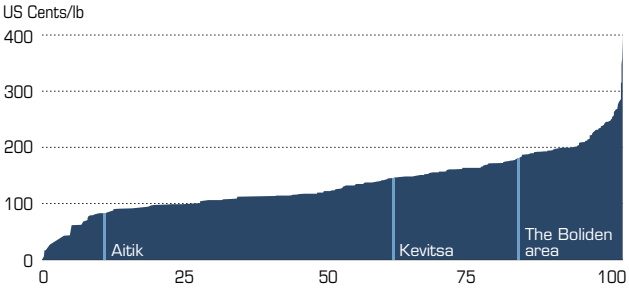


Percentage of the industry's production of zinc metal in concentrate, %

Garpenberg and the Boliden Area have substantial revenues from several metals, and cash costs are calculated using pro rata costing. Tara is described using normal costing. According to Wood Mackenzie, Garpenberg's productivity is amongst the best in the world, and Tara's productivity is high.

Copper – cash cost C1 composite costing

Source: WOOD MACKENZIE, JAN 2020

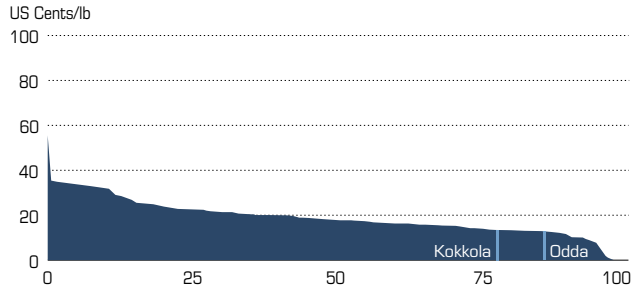


Percentage of the industry's production of copper metal in concentrate, %

Aitik's cash cost is low due to it being the world's most productive open pit mine with concentrating facilities (according to Wood Mackenzie). Kevitsa is a nickel and copper mine with by-metals. Kevitsa is located in the better quartile of the industry's cash cost curve for nickel.

CASH MARGIN FOR SMELTERS

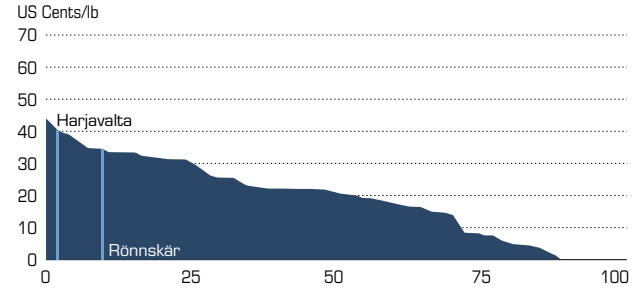
Zinc – cash margin for smelters



Percentage of the industry's production of zinc metal, %

Kokkola is a larger smelter than Odda. Odda's margin is lower than Kokkola's, but the curve is flat, and the differences between smelters at lower and higher percentiles are small.

Copper – cash margin for smelters



Percentage of the industry's production of copper metal, %

Rönnskär has a substantial supply of materials from secondary raw materials while Harjavalta generates substantial revenues from the nickel business, which can make it difficult for the analysis companies to compare these smelters with the sector as a whole.

The graphs are based on estimates and assumptions by the analysis company, Wood Mackenzie, and may differ from Boliden's own cash cost per mine data due to differences in the underlying data. There are a number of different definitions of cash cost: composite costing is used in Mines graphs, whereby mines are reported using either pro rata or normal costing. Pro rata costing divides the costs between the different metals, while normal costing reduces the costs by the net revenues from by-metals.

Productive mines and smelters

The competitiveness of the individual mines and smelters relies on stable processes and high productivity. Boliden's broad portfolio of base metals and precious metals provides better stability over pricing cycles.

Successful exploration has extended the lifespan of several mines, enabling growth investments. At the same time, capacity boosting investments have been carried out at several smelters, resulting in lower costs per tonne of metal. Furthermore, the smelters collaborate with each other with the aim of extracting as much metal as possible from primary and secondary material. Comprehensive investments in long-term sustainable waste management solutions are in progress at certain smelters.






Several of Boliden's units can be found on instagram.

BOLIDEN'S MINES

Aitik
Aitik is Sweden's biggest copper mine, and its ore contains copper, gold and silver. Large-scale production, rational methods and a high degree of automation lead to high productivity despite comparatively low grades.

The Boliden Area
The Boliden Area consists of the underground mines Renström, Kristineberg and Kankberg with a joint concentrator. Gold ore is mined in Kankberg with the by-product tellurium. In the other mines, the ores contain zinc, copper, lead, gold and silver.

Garpenberg
Complex sulphide ore containing zinc, silver and the by-products lead, copper and gold is mined in Garpenberg. Productivity is high, among other things as a result of mine design and a high degree of automation.

Kevitsa
Boliden acquired the open pit mine in Kevitsa, northern Finland, in 2016. The mine, which is currently in a ramping up phase, produces concentrate containing nickel, copper, gold, platinum, palladium and cobalt.

Kylylahti
The underground mine in Kylylahti, which was acquired in 2014, produces copper, gold, zinc, nickel and cobalt. Kylylahti is being mined out.

Tara
Tara is Europe's largest zinc mine, and lead is also extracted as a by-product. The tailings dam was extended during the year, which has prolonged life of mine. Moreover, exploration towards a zinc deposit at greater depth progressed (Tara Deep).

BOLIDEN'S SMELTERS

Bergsöe
Bergsöe is one of Europe's largest recycling installations for lead acid batteries and the only smelter in the Nordics for secondary lead. Its main products are lead and lead alloys. Bergsöe collaborates closely with Rönnskär and Odda to process certain materials.

Harjavalta
Harjavalta is a copper and nickel smelter that also produces gold, silver and sulfuric acid. Harjavalta has high environmental performance compared with competing smelters. Investments are being made to increase copper production.

Kokkola
Kokkola is one of Europe's largest zinc smelters. It produces a total of around 40 different zinc products containing both pure zinc and zinc alloys for certain customer segments.

Odda
Odda produces pure zinc and zinc alloys. The smelter has a production capacity of 200 ktonnes of zinc per year, and a high environmental performance compared to competing zinc smelters around the world thanks to the good availability of renewable energy.

Rönnskär
Rönnskär produces copper, gold, silver, and lead, the by-products sulfuric acid and zinc clinker and a number of other metals. The smelter is also one of the world's leading operators in the field of electronics recycling. Investments are underway in a sustainable underground repository as well as a leaching plant, which will increase resource utilization.

Investments and increased production

Long-term responsibility combined with a high degree of safety and productivity characterize Boliden's mining operations. During 2019, the majority of expansion investments were carried out aimed at further strengthening our competitiveness.

Successful exploration is the basis for all mining operations. Boliden prioritizes exploration close to existing mining areas in order to create opportunities for increased production and extended life of mine. All of the mines produce concentrates containing multiple metals, which are chiefly extracted by Boliden's smelters.

Important events in 2019

During the year, the focus was on the implementation of the investment projects in above all Aitik, Kevitsa and Garpenberg. In addition, investments were made linked to automation and reducing environmental and climate impact from an already low level.

The majority of the investments in Aitik were carried out aimed at increasing production to 45 Mtonnes in 2020. Among other things, the truck fleet was expanded as was milling capacity in the concentrator. Furthermore, automation initiatives with regard to drilling have been successful. In the Boliden Area, a new drift was cut from the Kristineberg mine towards the Rävliden deposit, and investments were carried out in the Renström mine to increase capacity. Minor investments were carried out in Garpenberg to increase production to 3.0 Mtonnes. Expansion investments in Kevitsa were brought forward, enabling the faster ramping up of new production capacity to 9.5 Mtonnes. The tailings dam in Tara has been extended, and significant investments were made to increase knowledge of the Tara Deep deposit.

Loading in the zinc mine in Garpenberg. One of Sweden's deepest mines.

PERSPECTIVE:

ZINC IN OUR LIVES

Of all the metals used everyday in various ways, where each one is an important building block in our civilization, zinc is one of the least known, even though it can be found everywhere and is used in the most varied applications. The use of zinc dates back to the Roman Empire when it was used to make brass. Today, it's the fourth most common metal in use after iron, aluminium and copper. More than 60 percent of the zinc used goes to galvanizing, which significantly prolongs the lifespan of steel[1]. A thin layer of zinc on steel is enough to combat rust for up to 100 years, and prolong the lifespan of steel structures. This means a significant reduction in the amounts of carbon dioxide emitted, while also making society's infrastructure investments more sustainable.

Like most metals, zinc is highly recyclable and does not lose its properties or qualities in the recycling process, regardless of whether it is used as a construction material or as a coating on other materials.

> A thin layer of zinc on steel is enough to combat rust for up to 100 years and prolong the lifespan of steel structures.

[1] Source: International Zinc Association (IZA)

Zn

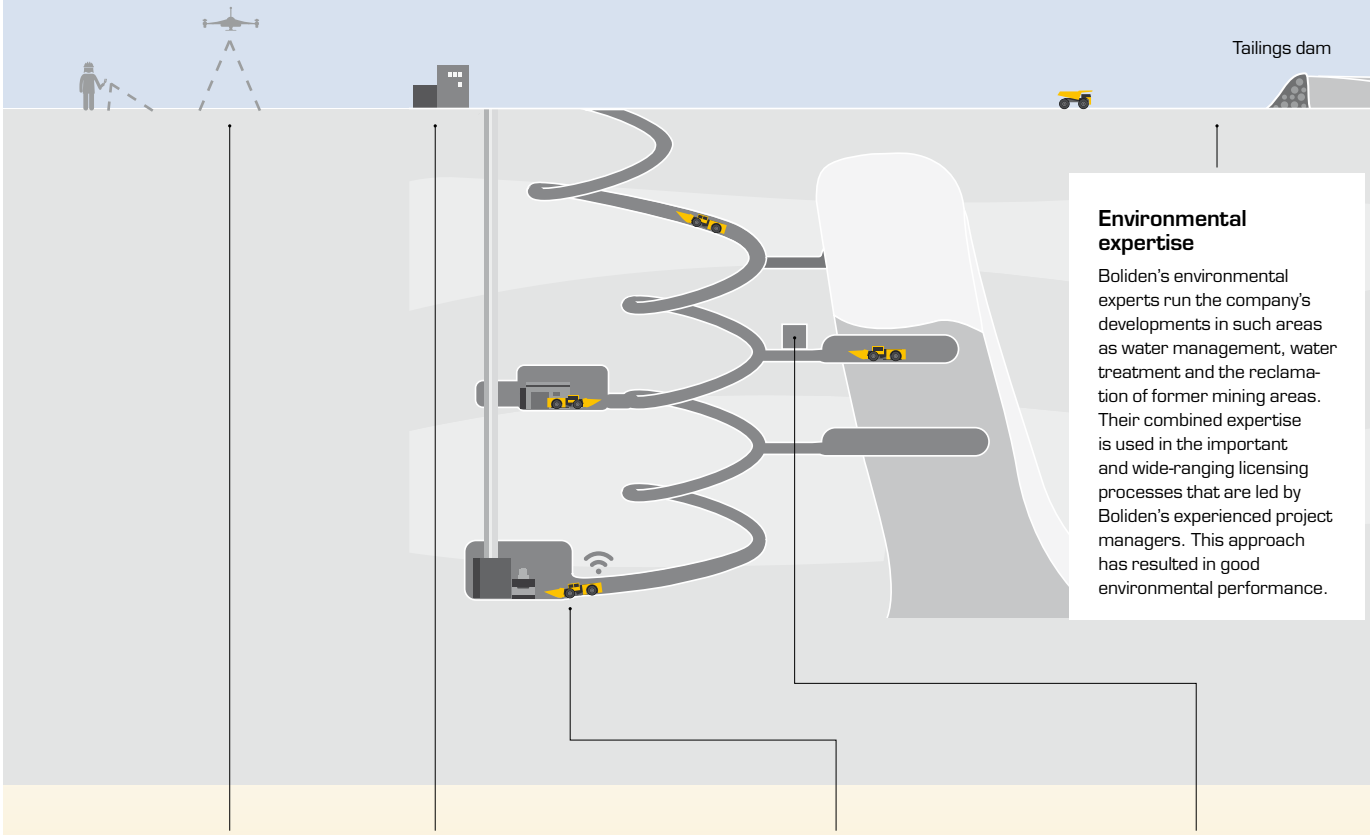
ZINC AND BOLIDEN

Boliden is one of the world's largest zinc producers and has a strong position as a supplier to producers of galvanized sheet metal. In 2019, Boliden produced 486 ktonnes of zinc from the smelters in Kokkola and Odda. Zinc concentrate is produced in the mines in Garpenberg, the Boliden Area in Sweden and Tara in Ireland. A total of 290 ktonnes of zinc in concentrate were produced in 2019, which for the most part were supplied to the Group's own smelters. Boliden's zinc smelters also use recycled raw material, including dust from steel mills. Rönnskär also produces around 35,000 tonnes of zinc clinker every year, of which approximately 10–15% comes from steel mill dust. The zinc clinker is shipped to Odda in Norway for processing into pure zinc.

How Boliden's mines work

Boliden has both open pit and underground mines. Mine production comprises the following processess: drilling, blasting, crushing, concentration and transportation to smelters. Thanks to advanced technology and highly developed processes, several of Boliden's mines are the most productive in the world.

EXPLORATION **UNDERGROUND**



Environmental expertise

Boliden's environmental experts run the company's developments in such areas as water management, water treatment and the reclamation of former mining areas. Their combined expertise is used in the important and wide-ranging licensing processes that are led by Boliden's experienced project managers. This approach has resulted in good environmental performance.

Exploration

Long-term and systematic exploration is carried out to find new mineable deposits. Flight measurements, rock surface finds, geophysical and seismic methods make up the initial phases, while core drilling is the final stage in confirming a mineralization. Boliden uses a range of different techniques and equipment. Some of the instruments used were developed in-house by Boliden's technology departments.

Remote control

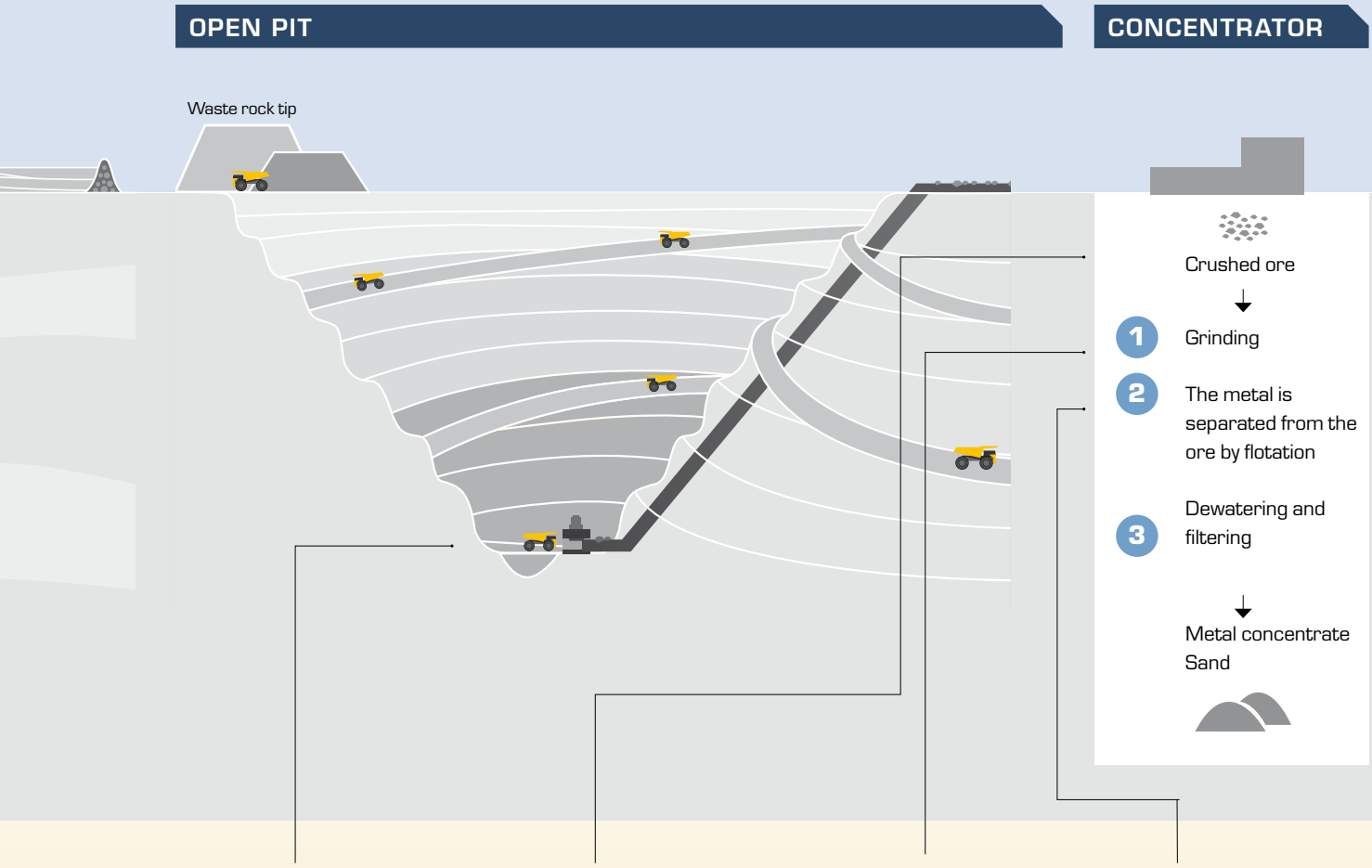
The journey down to workplaces in the mines, which may lie several hundred metres underground, can take up to an hour. Operators can now increasingly control loading and drilling machines from control rooms. Some of the loading machines drive themselves (autonomously) to the shaft where the ore is tipped for transportation on to the concentrator at the surface.

Positioning

Boliden has equipped all of its mines with a positioning system that enables the exact position of individuals and vehicles to be located in real time. The technology offers similar functionality to GPS underground in order to provide visual flows in production. The technology improves the safety of the working environment and increases productivity by allowing the operations centre to plan different transportation routes and control production.

Safety

Occupational health and safety in underground mines has high priority and maintains a high standard. Rescue chambers constitute an important part in the extensive safety system that every mine has. Systematic training is carried out including frequent evacuation drills.



Optimal mine design

Open pits have lower production costs and higher productivity than underground mines. How steep the open pit slope can be made determines how much waste rock is mined in relation to the quantity of ore. This, combined with the ore value per tonne, forms the basis for optimized open pit design.

Mobile control rooms

The concentrators' control rooms are in several cases connected to mobile units, giving the operators access to processing data in real time. The operators steer and control the processes via smartphones or tablets, increasing understanding and communication between individuals, departments and suppliers. This, in turn, enables faster intervention, for example, when adjustments to processes are required and increases the potential to delegation.

Autogenous grinding

Boliden's concentrators primarily use a technology known as autogenous grinding, whereby the ore is ground without the addition of grinding agents. The technique cuts costs but requires more advanced control than conventional technologies. Autogenous grinding also results in less wear and reduced maintenance costs.

Concentration of complex ores

Boliden has developed concentrating techniques for complex ores. Mineralogical studies are used systematically to optimize the concentration process. Boliden has a pilot concentrator that is used to evaluate processes with new minerals, or to enhance performance in the concentrators.

Long-term mining operations

Boliden's mining operations are characterized by long-term thinking all the way from exploration to reclamation. New technology is developed at every step with the goal of minimizing environmental impact while drawing full benefit from the operation.

EXTENSIVE EXPLORATION

Boliden conducts extensive exploration work in-house. The purpose of the operation is to develop existing deposits and identify new ones to the highest level of knowledge possible. In 2019, Boliden invested SEK 570 m in exploration aimed chiefly at base metals and precious metals in existing mining operations. Typical projects carried out during the year include the zinc deposit in Tara Deep in Ireland and the Rävliden deposit in the Boliden Area. In both cases, new drifts were cut with the aim of reaching new drilling positions from which to increase knowledge about the deposits.

In addition to drilling, exploration takes place using a number of different methods including geophysical surveys to investigate the physical properties of the bedrock, and by means of geochemical sampling to analyze and trace mineralizations in the bedrock. Drill cores are analyzed, mapped and archived, where together with other geological information collected they constitute the basis upon which long-term mining plans are established. The exploration of potential deposits in completely new areas takes place on the basis of the permitting processes in the countries concerned. However, Boliden's focus remains the same, i.e. to identify mineral assets in bedrock and increase knowledge about them with the ultimate aim of reaching a decision as to whether new mining operations can be established.

For further information, see Mineral Resources and Mineral Reserves on page 106.

Field exploration in Garpenberg.

DAM SAFETY

An important part of mining operations are the construction, operation and reclamation of tailings dams. Tailings from the concentrator are deposited together with process water in these dams. The tailings form sediments in the dams and the excess water is led to a clarification pond. Boliden is responsible for 10 dam systems, of which nine are located at existing and disused mining areas, and one at the Harjavalta smelter. The safety of these dams is of the highest priority. Each dam has its own dam safety organization to ensure that laws, guidelines and procedures are followed. The frequency and regularity of dam monitoring and inspections is very high and includes such things as data collection and analyses. Furthermore, independent reviews of dam safety are carried out. The reviews confirm that Boliden complies with the increasingly stringent international guidelines in this field. For further information about Boliden's dam safety work, see www.boliden.com.

> The frequency and regularity of dam monitoring and inspections is very high and includes such things as the collection and analysis of data.

Inspecting the tailings dam in Tara, Ireland.

In a unique research project, reindeer are wearing GPS collars that register their movement. The goal is to investigate how mining operations affect reindeer and reindeer husbandry's use of grazing land.

LEADER IN RECLAMATION

When mining comes to an end, the area must be reclaimed and returned to nature. Today, Boliden has reclamation responsibility for around 30 active and disused mines, and it conducts systematic inspections and risk analyses. Where possible, reclamation is already begun while the mine is in operation. The conservation of biological diversity is a high priority issue. Boliden collaborates with a number of research projects, partly to develop reclamation technologies, and partly to strengthen the re-establishment of plants. These include tests together with SLU for the re-establishment of lichens aimed at speeding up the prospects for reindeer grazing. On several occasions, Boliden has returned with improved initiatives to mines already reclaimed. One such example is Näsliden in the Boliden Area where the waste rock dump has now been covered with a mixture of moraine and volcanic clay with recognized excellent qualities.

High stability from smelters

Boliden's smelters extract metals and by-products from concentrate and secondary materials. Metal recycling is a priority area as it contributes to high resource utilization in society.

Boliden's smelters are supplied by concentrate from our own mines as well as external concentrate suppliers. Secondary materials such as spent electronics, lead acid batteries and ash from industry, is also an important source of raw materials. The goal is to extract as much metal as possible thereby minimizing waste and ensuring high resource utilization. However, recycling metals generates significant quantities of carbon dioxide. There are many development projects in progress to reduce emissions of both metals and carbon dioxide. The intention is to enable a circular economy with low climate impact.

Important events in 2019

During the year, a plastics separation plant was commissioned in Bergsöe. Recycling the plastic from battery cases will reduce carbon dioxide emissions by 25 percent. Investments in increased cathode copper production are in progress in Harjavalta, while a new sulfuric acid plant was commissioned, reducing the discharge of metals to water. Production stability in the zinc smelting plants in Kokkola and Odda was high. The extensive investment program in Rönnskär continued during the year. The new leaching plant and the underground repository at the smelter will be commissioned at the end of 2020. The capacity-boosting investments in the converter hall and the sulfuric acid plant are planned for commissioning at the beginning of 2021.

Recently commissioned sulfuric acid plant in Harjavalta with high environmental performance.

PERSPECTIVE:

NICKEL IN OUR LIVES

Nickel plays an important part in society, and its many properties make essential technologies, products and processes possible. It has a high melting point and high resistance to corrosion and oxidation. It is also soft and magnetic at room temperature. Nickel is used in more than 300,000 products for consumers, industry, pharmaceuticals, energy, transport, space, marine, architectural and many other applications.

The global supply of nickel from mines is around 2.4 Mtonnes. No less than 70 percent of all nickel produced is used in stainless steel.[1)] Stainless steel plays an important part in today's society with its wide range of important consumer and industrial products and applications. On the consumer side, cookware, sinks and cutlery are typical examples of everyday products in which stainless steel is a central component.

A new, growing application for nickel is its use in rechargeable batteries for electric and hybrid vehicles and stationary storage. The demand for nickel in this technology is anticipated to grow significantly over the next 10 years. Reducing carbon dioxide emissions is the primary driving force behind this development.

Another minor but extremely important area of use for nickel, with its superior resistance to corrosion and its ability to withstand high temperatures, is in super alloys used in aircraft jet engines.

In common with most metals, nickel can be recycled an unlimited number of times. Approximately 68 percent[1)] of all nickel in consumer products is recycled.

[1)] Source: Nickel Institute

> A new, growing application for nickel is its use in rechargeable batteries.

Ni

NICKEL AND BOLIDEN

Boliden produces two intermediate products, nickel matte and raw nickel sulphate. Both are produced in Harjavalta from nickel concentrate. Annual production of nickel in matte is between approximately 25,000 and 35,000 tonnes. Boliden's mine in Kevitsa accounts for half of the concentrate, and the rest comes from external suppliers. Nickel matte is sold globally for further processing into pure metal. Raw nickel sulphate is a by-product from copper production in Rönnskär and Harjavalta, where Boliden produces around 1,500–2,000 tonnes annually.

How Boliden's smelters work

Boliden's smelters process complex raw materials into pure metals. The smelters' processes contribute to a high resource utilization through flexibility in the supply of different raw materials.

Boliden's smelters are characterized by their long history of supplying society with metals. Technology advances, investments and skills development have enabled a drastic reduction in environmental impact while also allowing more metal, and metals, to be extracted over the years. At the same time, secondary material has become an increasingly important part of raw material supply. Boliden is among the best in the world at recycling electronics and is one of Europe's biggest recyclers of lead acid batteries.

The variety of processes at the smelters enable a broad portfolio of raw materials that are refined to produce a variety of metals and by-products. This diversification reduces Boliden's smelters sensitivity to economic fluctuations when it comes to both material supplies and output. At the same time, the smelters seek to reduce the amount of material sent to landfills and are constantly increasing resource utilization.

Technical ability and supply of raw materials, combined with the stable availability of electricity and competitive energy prices, are important competitive factors for the energy-intensive operations that smelters are. Boliden's smelters are located in areas with a high proportions of fossil-free energy production, which generally means high environmental performance. In addition, research and development work takes place aimed at further reducing environmental impact, leading to such things as specially modified filters to minimize emissions to air from smelter processes.

CONTINUOUS IMPROVEMENTS

Customized products
Boliden's product portfolio consists of the metals copper, zinc, nickel, gold, silver and a number of by-products. In addition, Boliden offers a variety of different lead and zinc alloys adapted to meet customer requirements. The alloys enable customers to create specific end-product properties, reduce costs and increase productivity.

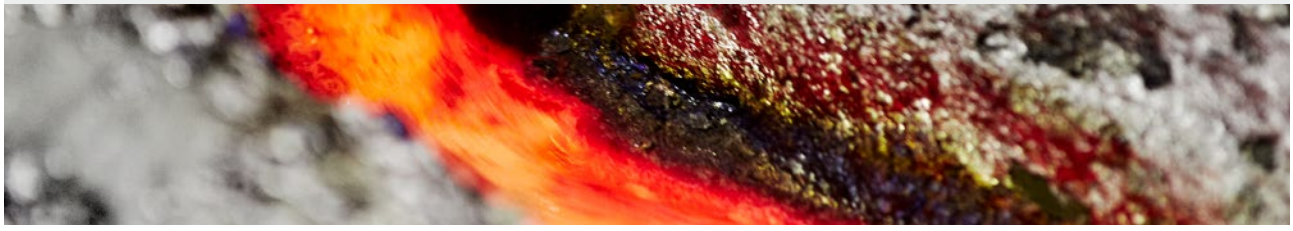
Treatment
The smelters' treatment processes are continuously developed to improve environmental performance, while stable processes with few stoppages are important for minimizing emissions. The biggest recent environmental investment was the new sulfuric acid plant in Harjavalta, while in Kokkola investments are in progress in expanding water treatment capacity, and in the replacement of sulfur dioxide purification filters.

Recycling
Thanks to unique, energy-efficient technology, Rönnskär is one of the world's leading operators in the field of recycling of copper and precious metals from electronics. Bergsöe is one of Europe's biggest operators in the recycling of lead from end-of-life car batteries. Synergies between Boliden's smelters and mines make it possible to recycle metals from residual products from processes to maximize the value of incoming raw materials.

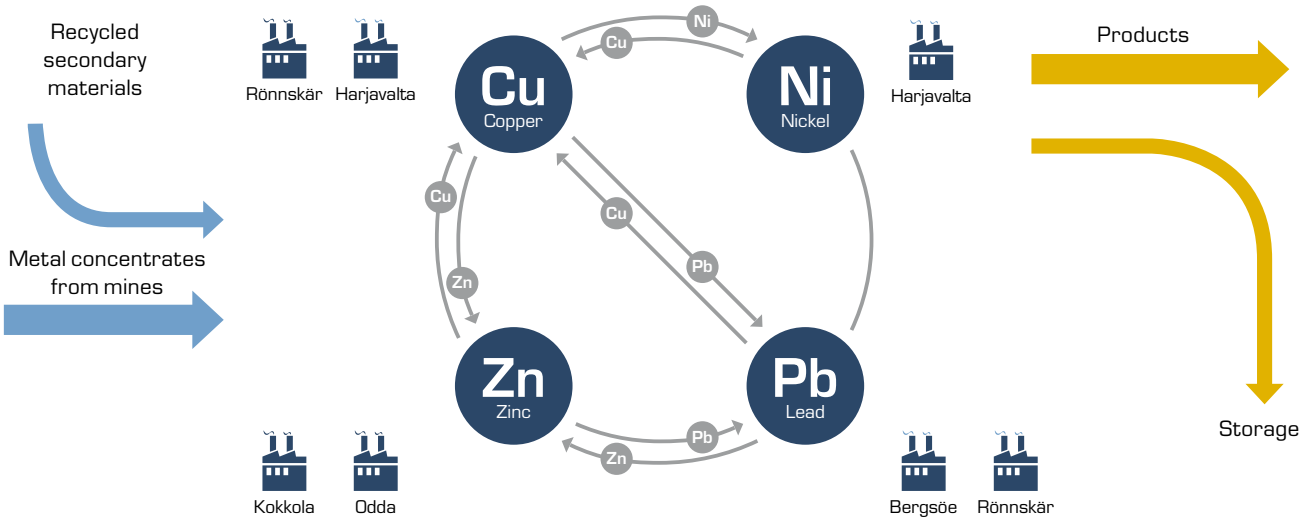
Efficiency
Competitiveness relies on stable and efficient processes, high recovery levels and low costs. Maintenance work is streamlined with the aid of Boliden's lean-based improvement program, New Boliden Way.

Flexibility
The ability to use complex raw materials for metals production increases the availability of materials and usually generates increased revenues. The smelters develop processes and technical skills to enable capacity increases and flexibility. In order to process increasingly complex raw materials containing impurities, Boliden is investing in waste management and increased capacity.

Underground storage
Underground storage enables sustainable, permanent disposal of certain wastes. The use of these unique waste disposal solutions increases the ability of smelters to process complex raw materials. In Odda, waste is deposited in rock caverns, and at Rönnskär storage facilities 350 m below ground are under preparation, and planned for completion during 2020.



SMELTERS



INPUT

Around half of the metal concentrates come from Boliden's mines while the remainder comes from mines in different parts of the world. Secondary materials come from society in the form of lead batteries and electronics, as well as from industry, for example, in the form of ashes.

BY-PRODUCTS

By-products occur in processes at all of the smelters, and the smelter concerned may lack the technology to perform further processing. Also, waste occurs for which further processing is not possible. In order to handle these materials in the best way and extract as much value as possible from the raw material, the smelters exchange materials with each other. For example, material containing zinc is generated in Rönnskär for further processing to zinc in Odda. There are also some exchanges between smelters and mines.

OUTPUT

Metal and by-products are delivered mainly to industrial customers in Europe. For example, a train laden with refined copper leaves Rönnskär every day. Unprocessable material is prepared for long-term storage.

Smelters	By-products	Receiving smelter and outcome
Cu Pb Rönnskär	Metal-bearing slag	**Boliden Area** Increased metals recovery through slag concentration
	Zinc clinker (Zn)	**Odda** Zinc production
	Antimony slag	**Bergsöe** Production of lead-antimony alloy
Cu Ni Harjavalta	Zinc-bearing filter dust (Zn)	**Kokkola** Zinc production
	Blister copper (Cu)	**Rönnskär** Used as cooling scrap in copper production
Zn Kokkola	Lead sludge (Pb)	**Rönnskär** Lead production
	Silver concentrate (Ag)	**Rönnskär** Silver production
	Copper-bearing residual products (Cu)	**Harjavalta** Copper production
Zn Odda	Copper-bearing residual products (Cu)	**Harjavalta** Copper production
Pb Bergsöe	Lead-bearing filter dust (Pb)	**Rönnskär** Lead production
	Matte, slag	**Odda** Final storage in underground caverns

Sustainable metal production

Boliden provides metals for the development of modern societies, and is one of the leaders in the industry in terms of taking responsibility for safety, environment and climate work as well as reclamation of mining areas.

Boliden's sustainability topics

Financial, environmental and social responsibility is of highest priority in Boliden. The business model extends along several parts of a metal's value chain, from the mining operation to recycling. Through investments in modern technology, development of low emission processes and responsible company management the sustainability performance is continuously improved. Global macro trends, stretching from the climate issue to urbanization, digitalization and technological development alter conditions for the business. Boliden's success is dependant upon its ability to create value in a way that meets stakeholder needs, while also taking into consideration financial, environmental and social consequences. Sustainability is part of the company's strategy and business planning. Every sustainability topic has a long-term direction that shall support and guide the structure and efforts at every level in the company. Boliden's sustainability topics and directions are presented in the company's Sustainability Index.

Boliden has identified its sustainability topics by analyzing technology and consumption trends as well as maintaining a close dialogue with customers, suppliers and other stakeholders. Every year, a workshop and a materiality analyze are carried out with representatives from the entire operation, where the significant sustainability topics have been identified. The prioritized topics then form part of the company's strategy work. Climate change was identified as one of Boliden's significant topics in 2019, which led to the overall goal of a 40% reduction in carbon dioxide intensity by 2030.

Governance of Boliden's sustainability work

The Board is responsible for ensuring an appropriate company structure and a sustainable strategy. The CEO is responsible for implementing Boliden's sustainability work and for ensuring that a management system is in place. Sustainability topics are addressed at every Group management and Board meeting. The business area's Mines and Smelters are responsible for integrating sustainability into their operational work. Boliden's sustainability work is based on own standards, stakeholders expectations, the UN Global Compact and the UN's global goals for sustainable development. Boliden also supports the Task Force on Climate-related Financial Disclosures (TCFD) and has a management system that complies with the ISO standards for environmental,

quality, energy and occupational health and safety´management. In addition to the Annual and Sustainability Report, a Sustainability Index is published, which is reviewed by an external party.

Boliden's stakeholders

Boliden's operations affect people, society and the environment in different ways. Stakeholders often have different opinions and expectations about how the company's operations should be run, and these are captured in stakeholder dialogues. Each unit is responsible for identifying its own stakeholders. Stakeholder dialogues are conducted regularly at both Group and unit levels. Boliden follows the sustainability trends from a process and product perspective, e.g. through participation in European and national industry organizations. This monitoring of context enables identification of opportunities and risks to be recognized at an early stage, and for advocacy efforts to be conducted in important issues.

FOUR PRIORITY AREAS

Priority topics are identified in the materiality analysis and then integrated into strategy work. The business areas develop activities and plans to achieve the Group's goals.

1 Employees and partners

Boliden puts people first and seeks to ensure they grow and thrive. Boliden develops processes for the production of metals in collaboration with partners.

2 Environment and climate

Boliden contributes to societal development and adaptation to climate change by extracting, producing and recycling metals while taking clear environmental responsibility.

3 Innovation and continuous improvements

Boliden's business development focuses on innovation and continuous improvements in areas such as automation, digitalization and electrification.

4 Responsible business

Business ethics and personal responsibility are important principles in Bolidens Code of Conduct for employees and business partners.

The first ore was mined in Fågelmyran in 1926 and the community of Boliden sprang up.

High levels of skills and sustainable work environments

Boliden seeks to offer meaningful, safe and healthy jobs in stimulating work environments. Innovation and modern technology support the day-to-day work. Sustainable work environments lead to increased job satisfaction, strong commitment and improved conditions for attracting and developing employees.

Work environment, health and safety

All employees, contractors and others working at or visiting Boliden's production units and offices are entitled to a safe and healthy working environment.

The goal is an accident-free, healthy operation where people are healthy and feel well. Safety is largely created in individual situations in day-to-day work and depends on everyone taking responsibility before they carry out their tasks. The consensus between management and the trades unions concerning safety issues is good, and safety work is under constant development. A coaching leadership presence using proactive metrics which includes psychosocial health and safety issues are all important parts of our safety efforts. Accordingly, great attention is paid to raising awareness of safety culture efforts in both internal and external leadership training courses, in which 200 people have so far participated. During the autumn of 2019, a safety ambassador training also was started for unofficial leaders. At the same time, many projects are in progress concerning increased automation, aimed at improving safety for employees in connection with productivity developments.

Every year, a large number of workplaces visits and training courses are carried out with a focus on improving the safety culture. The sick leave rate within the Group during the past year was just over 4%. Boliden conducts systematic occupational health and safety work aimed at reducing the sick leave rate further.

Involved, active leadership that pursues both preventive initiatives and effective rehabilitation measures to reduce long-term sick leave helps achieve good health.

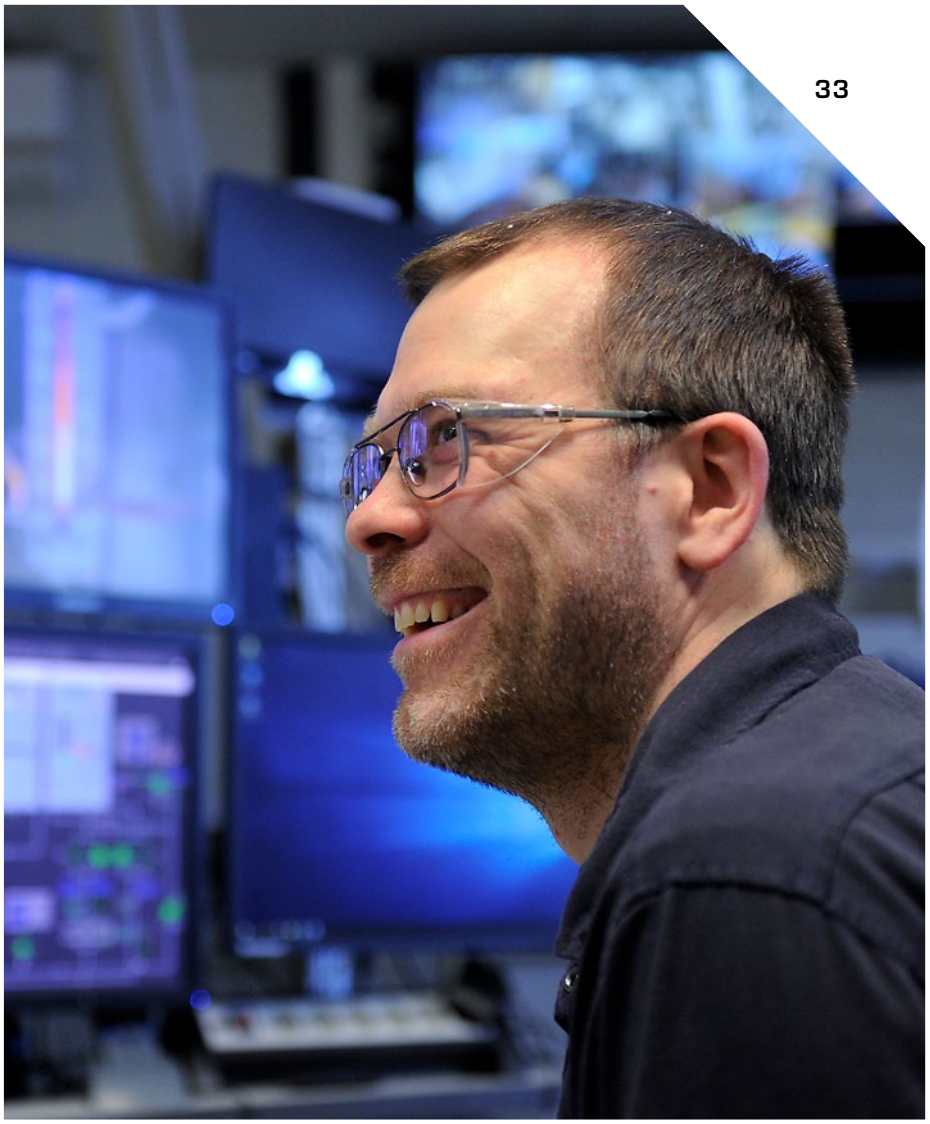
Securing future skills

Boliden's strategy is based on the efficiency of operations, organic growth and ensuring safe, healthy workplaces, and this requires dedicated employees, the right skills and strong leadership. Competition for employees is increasing, which means the work of attracting, developing and retaining employees is of the highest priority. A comprehensive technology shift is taking place in Boliden through digitization and automation. This creates opportunities for employees to broaden their skills, contribute to technological development and thus develop their work.

During 2019, a number of activities were carried out to secure skills for the future. These took place within the framework of Boliden's HR strategy, which consists of five focus areas as described below.

The marketing of Boliden as an employer

The marketing of Boliden as an employer includes both internal communications to existing employees to raise job satisfaction, and to reinforce the brand for those external target groups who are most important for future skills supply.



In 2019, work on strengthening Boliden's employer brand was intensified. Employees were involved in this work and the revised employer brand will be launched in 2020. Also, the use of social media for reaching out to important target groups increased during the year, which has provided positive results in the form of greater interest in the company.

Culture and leadership

Boliden's values, culture and leadership involve a passion for improvements, responsibility for the entire value chain and personal commitment. Corporate culture and leadership can be strengthened in line with these values through work with the introduction of new employees, goal orientation and leadership development programmes.

A number of group-wide leadership development programmes were carried out in 2019. Work concerning our values was begun in 2019 aimed at further strengthening corporate culture, and the work will involve the entire organization in 2020.

Talent supply

Work began in 2019 to create a common talent supply framework. The ability to identify, attract, develop and retain talent is crucial for the success of strategic skills supply. Diversity and inclusion are important talent supply focus areas as they contribute to innovation, development and greater access to skills. Good leadership, good opportunities for personal development and clear career paths are other important factors in inducing talents to stay, grow and reach their full potential.

A number of talent forums were held in 2019 throughout the Group in a process whereby talents and successors for key positions in the operation are identified and provided with individually tailored plans for their continued development within Boliden.

Employee strategy and skills

Work on recruitment and skills development is based on operational needs combined with the Group's strategic goals. It is very important that the work is done strategically and systematically to ensure continous access to employees with the necessary knowledge, skills and competences.

A comprehensive technology shift with increased digitization and automation demands new skills in many vocational fields. Skills development in order to further develop existing employees is essential for meeting the new skills requirements. We are actively planning short-term and long-term skills development in the various operations in order to identify and meet current and future recruiting and skills requirements.

Digitized personnel processes

A pilot study was carried out in 2019 aimed at investigating how Boliden should securely, uniformly and efficiently process data regarding the organization, its employees and skills, and how to streamline the Group's working methods and strategic planning within HR. The pilot study resulted in a decision to introduce group-wide HR masterdata system. The implementation will begin in 2020.

> A safe work environment for Boliden's employees is of the highest priority.

Proactive environmental initiatives

Boliden contributes to societal development by extracting, producing and recycling metals in a environmentally responsible way. The Boliden units are also actively engaged in minimizing their environmental impact and are in many cases a driving force behind technological development.

Environmental agenda

The use of metals continues to increase, partly due to global population growth and partly because an increasing number of people can afford to buy goods and services that depend on metals. There is also increasing demand for metals to meet new societal challenges such as climate change. Several of our metals have also been identified as being of particular strategic significance for Europe. However, the mining and smelting industry simultaneously generates significant amounts of greenhouse gas emissions.

Although Boliden provides metals that are necessary for adapting to climate change, it also has the responsibility of reducing climate impact from operations as well as contributing to technological development in the industry as a whole.

Environmental impact

Land use and energy consumption are areas which have a local environmental impact in the form of e.g. emissions to air, discharges to water, dust, noise and changes to the landscape. Environmental impacts from mines and smelters can also occur on a regional basis, through e.g. acidification and eutrophication, and globally through carbon dioxide emissions. The units takes responsibility for limiting the environmental impact throughout the value chain, including reclamation before and after a mine is taken out of production.

Water management and dam safety

Boliden's operations require large amounts of water. Through recycling and process efficiency the water consumption is reduced. All of Boliden's operations have a watermanagementplan where risks and priorities are determined, focusing on minimizing the impact on animals and nature.

Boliden has many dams for tailings, water storage and water treatment. The dams are located close to mines´ and smelters´ operations and in closed production areas. The Group's units strive to minimize the impact on the surroundings, both during the construction of dams, and throughout and after a dam's operational lifetime. Each unit follows the relevant country's dam safety directives as well as the Boliden's internal dam safety guidelines. During 2019, the review of dam safety continued with the support of independent dam safety experts, the Independent Technical Review Board (ITRB).

Initiatives for biodiversity

Boliden works proactively to preserve and compensate for the loss of biodiversity. Land areas are managed through reclamation and value-creating activities such as ecological reclamation and compensation. Studies concerning biodiversity are carried out at different stages, during the early project phase, as a basis for localization studies ,and as in depth localization studies during the permitting project. Investigations are conducted, to decide on protection of species, ecological reclamation and re-creation of biodiversity as a compensation for loss of species and habitat.

Boliden's efforts in respect of biological compensation are based on the so-called damage limitation hierarchy's four steps – avoid, minimize, mitigate and compensate damage. Reclamation of closed mining areas is carried out in consultation with local residents to create ecological added value. The work with reclaiming mining areas is under constant development. The goal is to use the best available technology and to document and follow-up on performance.

Management of forest and land

Boliden owns 23,600 ha of land and forests and practices responsible forestry, as defined by the Forest Stewardship Council (FSC® FSC-C007235). This includes promoting and protecting biodiversity and creating environmental and social values.

> Boliden takes far-reaching responsibility for limiting environmental impact throughout the value chain, including reclamation when a mine is taken out of production.

ENVIRONMENTAL PERFORMANCE 2019

AN ACTIVE PART OF THE CIRCULAR ECONOMY

Boliden contributes to the circular economy by extracting and recovering metals from concentrates and secondary materials. Metals can be recycled repeatedly without changing their properties.

The Group's units recirculate 4 million lead acid batteries from the automotive industry every year (50 ktonnes Pb/year) and recovers electronic material equivalent to 2 million mobile phones every day (120 ktonnes/year). In all, 13% of Boliden's metals come from recycled materials.

LAND USE AND BIODIVERSITY

Continuous monitoring are done on water chemistry and more extensive evaluations of biodiversity for example on fish, algiers in water and mosses. Feather moss samples are analysed for metal content. Specific evaluations on metal occurance in berries, mushroom and reindeer grazing are performed. Specific species are monitored like moor frog, smew and tufted duck to follow up on the presence and rejuvenation. Active measures are also taken to improve the nesting possibilities.

In conjunction with the extension of the Aitik mine tailings pond, forested area covering 837 ha was protected to conserve biodiversity and compensate for the area occupied by the pond. Boliden has also initiated a research projects in the area in collaboration with the Swedish University of Agricultural Sciences (SLU) to monitor the processes involved in creating new natural areas and relocation of species.

ENERGY AND CLIMATE

Reduced consumption of fossil fuel through electrification
Boliden's ambition is to reduce carbon dioxide emissions per tonne of metal produced. Development projects are being implemented according to plan to reduce diesel dependency, increase electrification and plan fossil-free mines. The direct (scope 1) and indirect (scope 2) carbon dioxide emissions from mines were equivalent to 312 (341) ktonnes of carbon dioxide for the year. The direct (scope 1) and indirect (scope 2) carbon dioxide emissions from smelters were equivalent to 605 (630) ktonnes of carbon dioxide.

Better energy efficiency
The production units have implemented an energy management system to improve energy efficiency and save energy. In business area Smelters, excess heat is made use of and helps reduce carbon dioxide emissions. During the year, 1,306 (649) GWh were made use of internally and 848 (1,101) GWh were supplied for external use, e.g to nearby district heating plants.

MINIMIZING EMISSIONS

Boliden works constantly to reduce emissions to air and discharges to water by improving process efficiency. The Group's operations are well prepared to meet the requirements of the Best Available Technology as stipulated in EU directives from 2020. Discharges of metals to air were 69 (74) tonnes Me-eq[1] and 6.2 (7.7) ktonnes sulfur dioxide. Discharges to water from mines consist primarily of nitrogen, 181 (189) tonnes, but also of 8 (10) tonnes Me-eq metals. Discharges to water from smelters consist primarily of metals, 43 (51) tonnes Me-eq. Smelters generated nitrogen emissions of 47 (51) tonnes.

[1] Since 2019, the Natural Capital Protocol methodology is used to calculate metal equivalents.

Metals for adaptation to climate change

The base metals produced by Boliden are necessary for climate resilience, and this has a positive effect on demands. From an international standpoint, the operations´ climate performance is already very high, and developments in technology and processes will improve it further.

Climate program

In order to meet the challenges associated with the operations´ climate impact, a program was created covering the entire Group. Each business area has evaluated emission and discharge sources, the measures that shall be taken and development projects that need to be initiated. Climate program coordination and consolidation takes place at Group level.

Boliden's long-term climate goal include producing metals with a low carbon footprint and reducing the carbon dioxide intensity by 40% by 2030. In an international context, the operation already have a low climate impact. The ambition is to contribute to the achievement of the Paris Agreement's goal of keeping the global temperature rise below 2° C.

The Group's governance of climate work

Boliden's Board takes decisions on long-term climate goals. Group management is responsible for identifying and implementing measures to achieve the goals. Group management meetings with a focus on the environment and climate are held four times per year. Boliden's environmental council, which consists of experts from both business areas, prepares decisions, support documentation reviews and other input, in order to support Group management in this work.

Management of opportunities and risks

Boliden's two business areas conduct climate-related opportunity and risk analyses as an integrated part of their environmental management systems. Opportunities and risks are compiled per business area. The most significant opportunities and risks are presented to Group management and are compiled annually for the Board.

BOLIDEN'S CLIMATE PROGRAM

Providing metals with a low carbon footprint

Reducing carbon dioxide intensity by 40% by 2030

Activities defined in Boliden's strategy plan:

- Investigate fossil-free reducing agents
- Reduced carbon footprint in transportation
- Increased metal recovery
- Improved energy efficiency
- Increased use of fossil-free energy and optimized power generation technologies
- Investigate the possibility of carbon capture

Examples of improvement activities carried out in the climate field, 2019:

- A long-term energy supply contract for newly established fossil-free energy was concluded with a wind power developer. The contract covers the annual supply of electricity totalling 240 GWh in Sweden and 175 GWh in Finland.
- An investment regarding SEK 300 m for the electrification of mine transport in Kevitsa and Aitik was approved. The annual diesel savings are estimated to be 5,500 m^3, which will mean a reduction in carbon dioxide emissions of 300,000 tonnes over the lifetimes of the mines. Measures have also been taken in underground mines to electrify applications where diesel is the current fuel.
- Transportation from Garpenberg to the Port of Gävle used 100% HVO biodiesel, which is derived from slaughterhouse waste.
- The plastic separation plant in Bergsöe was inaugurated during the year and is expected to reduce the smelter's total carbon dioxide emissions by 20–25%.
- The mines and the concentrator in the Boliden Area use RME biodiesel derived from rapeseed oil for its road transport.
- A number of studies were initiated aimed at reducing process emissions at smelters. A typical example is the evaluation of alternative reducing agents to replace coal.

PERSPECTIVE:

TREND TOWARDS FOSSIL-FREE MINES

From a global perspective, Boliden's mines have a comparable low climate impact. Effective logistics solutions with a high degree of electrification together with the energy mix in the countries where Boliden operates are beneficial from a climate standpoint. In general, the climate impact from mines is largely attributable to the use of diesel. Of the total energy consumption in Boliden's mines, 30% is linked to diesel consumption, while 70% is linked to electricity. For example, conveyors and mills are electrically driven. In order to increase the degree of electrification, a decision was taken during the year to partially electrify transportation at the open pits in Aitik and Kevitsa. A total of SEK 300 m will be invested over the next five years in the conversion of mine trucks and the construction of a almost 5 km long trolley track. The investments mean that climate impact over the lifetime of the mines will be reduced by 15 and 9% respectively. Continued investments in e.g. the development of battery technology can further reduce climate impact. As trolley solutions are not possible in underground mines, the mines are dependent on the continued development of battery technology. Today, a degree of technological development has taken place in drill rigs, and is being implemented in operations. Technology development to meet specific requirements for underground transportations are moving ahead rapidly, even if challenges within this area are anticipated to remain for a few more years. When new technology becomes available, change can take place more quickly than in open pits as the depreciation time for such vehicles is shorter.

> The investments mean that climate impact over the lifetime of the mines will be reduced by 15 and 9% respectively.

73%
of total energy consumption in Boliden is electricity.

Pilot project for electrified transports at the copper mines in Aitik in Gällivare.

Responsible business

Business ethics and personal responsibility are important principles in Boliden's Codes of Conduct for employees and business partners.

Codes of conduct

Boliden's Code of Conduct is based on the company's values and ethical principles and provides a framework for responsible business conduct The Code applies to all employees and members of the Board. Complementary to the Code, there are a number of internal policies that all employees are expected to comply with. The Code of Conduct was updated in 2019 and approved by the Board.

Operating in a global market in which legislation, working conditions, environmental standards and business ethics vary demands a comprehensive strategy regarding responsible business, business ethics and risk management. Therefore, Boliden has a Code of Conduct for business partners which reflects the requirements on the own organization. It sets out the minimum level of conduct required of all parties in the value chain, whether Boliden is the buyer or seller. Similar to the internal Code of Conduct, it is based on international standards such as the UN's Global Compact, the ILO's core conventions and guidance from the OECD.

Human rights

Boliden became a member of the UN Global Compact in 2012, and has since then continuously worked with implementing its 10 principles related to human rights, labour rights, environment and anti-corruption. We support and respect human rights and strive to ensure that we are not complicit in human rights abuses in our own operations or through our business partners.

Boliden operates in countries where the risks of human rights violations are deemed to be low, but that does not mean there are not important aspects to consider. Rights of indigenous peoples is an important aspect which is given much focus. Establishing a zero tolerance culture for harassment, discrimination or other behaviour that may be regarded as offensive or degrading is another important aspect. In regard to the supply chain, great attention is paid to addressing and mitigating risks for human rights violations. Also working conditions, non-discrimination and the rights of indigenous peoples are important aspects for consideration when evaluating business partners.

Anti-corruption

Working against corruption in all its forms is a central part of Boliden´s ethics and sustainability work. The company has a zero tolerance approach to bribery and corruption and the anti-corruption policy applies to all employees andthe Board. The policy also applies to companies and joint ventures in which Boliden has an interest, and to third parties who act for or on the behalf of Boliden. In addition to the anti-corruption work, great emphasis is placed on compliance with applicable competition regulations and the group-wide competition law policy.

Ethics and compliance

During 2019, Boliden assigned a Chief Ethics & Compliance Officer. The ethics & compliance function is responsible for developing compliance programs, reviewing company policies and advising management on potential risks in relation to anti-corruption, antitrust, trade sanctions, data privacy, human rights, whistleblowing, and business partner due diligence.

Further information about human rights and anti-corruption is available in Boliden's Sustainability Index for 2019.

Whistleblower channel

All employees and business partners are encouraged to report any actual or suspicious serious misconduct. For many years Boliden has had an anonymous whistleblower reporting channel in place. During 2019, a new whistleblower system, provided by an independent and external third party, was implemented. The new system enables anonymous dialogue between the whistleblower and the recipient of the report. Internal policies and procedures were updated to improve and facilitate the investigation process and to ensure safe processing of personal data. If misconduct is proven, disciplinary action are taken in the form of warnings or dismissal. Boliden does not tolerate retaliation against any employee who raise concerns in good faith.

> A new improved whistleblower system was implemented in 2019.

Transport of zinc concentrates at Odda in Norway.

Evaluation of business partners

The process for evaluating business partners is an important part of Boliden's ambition to be a responsible company. The evaluations aimes to ensure compliance with laws and the Code of Conduct for business partners, and are carried out on both existing and prospective counterparties.

To be qualified as a Boliden customer or supplier, all business partners must undergo sanctions controls and an evaluation from a responsible business perspective. Where there is a risk of non-compliance with the Code, a more in-depth review of the business partner takes place. If the outcome still shows deviations from the Code, an action plan may be created, or the transaction may be closed or rejected.

Sanctions checks and evaluations of existing business partners are conducted regularly. Around 100 senior executivesas well as everyone in the sales and purchasing departments underwent training on trade sanctions and sanctions controls in 2019.

Trade in hazardous waste

Boliden has a policy with regard to hazardious waste whereby no payment is made until the material has been processed. Visits and audits are carried out to ensure policy compliance and that the waste is processed correctly. Country of origin documentation is required for all raw materials to ensure that they do not originate from areas with armed conflicts.

An active member of society

Boliden is an important operator everywhere it does business. Local jobs, investments and tax revenues are just some of the values created. What's more, Boliden is active in social development in various ways.

Jobs and investments

In all, Boliden has 5,997 employees in eight countries. In many of the locations where it operates, Boliden is the biggest employer and a large proportion of employees live close to the workplace. The salaries Boliden pays create indirect tax revenues in the municipalities concerned, as a very high proportion of employees also reside in the immediate vicinity of the business. Furthermore, job opportunities are created at suppliers linked to operations, and also in connection with maintenance and growth investments. The total purchased volume in 2019, excluding concentrates, was SEK 18.4 billion. Of this, Mines accounted for 59% (58), and Smelters 41% (42). Thus operations are of great direct and indirect importance for local employment and the financing of social services.

The Garpenberg mine in Hedemora municipality is a typical example. The majority of employees are resident in the municipality, and local taxes are paid through their salaries. In 2017, these tax payments totalled SEK 24 m, thereby constituting 3.6% of the municipality's total tax income. The equivalent figures for the neighbouring municipalities of Avesta and Säter are SEK 5 m and 4 m respectively. If indirect effects are included, in particular through tax payments from suppliers' employees, the tax footprint is even greater.

In addition to local jobs and their indirect tax contributions, Boliden pays fees and tax in different areas.

SEK m	Sweden	Finland	Norway	Ireland
Corporation tax	1,558	396	41	62
Employer's contributions	603	7	27	63
Energy and environmental taxes	118	155		
Other taxes [1]	3	13	2	
Other payments to public authorities [2]	4	85		57
Total tax paid and charges	**2,286**	**656**	**70**	**182**

[1] Other taxes mainly refers to property tax and stamp duty
[2] Other payments are specified separately in the report on payments to public authorities and in accordance with the Act (2015:812) on reporting payments to authorities applicable to operations in the mining industry

COMMUNITY RELATIONS AND IMPROVEMENT PROJECTS

In addition to jobs, Boliden contributes to local communities, especially in locations where it operates. It does this by supporting and cooperating with voluntary organizations and associations e.g. in sports, cultural events, schools and hospitals. There is often a connection to children and youth activities. Also, improvement projects around the activities are run together with stakeholders.

New grazing areas

Together with the Swedish University of Agricultural Sciences (SLU) and the Sami villages, Boliden has begun a project to develop methods for re-establishing lichens in the industrial areas. This is an important step in achieving value-added reclamation. The collaboration with SLU is aimed at scientifically proving the feasibility of re-establishing lichens, and also to investigate which method is best. Lichens are the principal food for reindeer during the winter six months, and when land is used for mining areas or pits, it may mean that grazing land is no longer accessible to reindeer for shorter or longer periods. In this project, Boliden seeks to show that it can achieve reclamation that adds value and that it is able to hand back areas for other land use.

Reclamation in Garpenberg

As part of the reclamation of the previous industrial area in Garpenberg, schools and the general public were invited to submit proposals concerning the area's continued use. The points of view provided will form the basis for continued planning of the work that will take place in the years ahead. In conjunction with the dialogues, the 74 meter high shaft tower that was in operation from the 1950s until 2014 was demolished, and the material was hauled away for recycling. All functioning equipment had been taken away previously.

Bcause - Boliden's charity fund

Boliden has long had a local involvement in club activities and non-profit organizations. The Bcause charity fund was started in 2014 as part of its ambition to also contribute globally. Bcause builds on voluntary monthly contributions from Boliden employees. Every krona donated is matched by two kronor from Boliden.

Purchasing of goods and services

Boliden has around 6,700 suppliers, of whom approximately 280 represent 80% of the purchasing volume, excluding concentrates. A great number of cost-cutting sourcing initiatives were carried out in 2019, but exchange rate changes and cost inflation in some categories resulted in a slight increase in the overall price level.

PURCHASE CATEGORIES

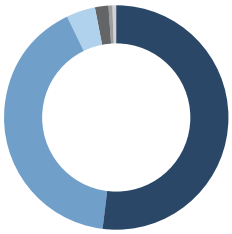
The table below describes Boliden's purchasing categories and their overall strategy as well as the trends in the supplier market and Boliden's cost trends 2019.

Category	Market trends and strategy	Boliden's cost trends	
Services	Pricing trends in general follow wage and fuel price trends, but certain categories have higher price increases. The overall strategy focuses on safety, efficiency, consolidation and openness to competition.	The general price trend is essentially unchanged as a result of long-term contracts at fixed prices with minimal index regulation in medium-term contracts.	→
Electricity	The market price of electricity fell somewhat in 2019 compared to the previous year. The price of emission allowances were at the same level as the end of 2018. Network charges were slightly lower than the previous year's.	The Group's electricity costs and its consumption were unchanged compared to 2018.	→
Bulk products & chemicals	General price decrease following the substantial price increases in 2018. Drastic price reductions for caustic soda and coke. The strategy of active exposure to competition, risk management and focus on sustainability remains.	Taxes and CO2 regulations affected fuel costs significantly. Long-term contracts for e.g. caustic soda will keep price levels stable for many years ahead.	→
Fixed equipment	High market demand resulted in challenging prices and delivery times in most sub-categories. Good competition has brought more suppliers to new investment projects.	Minor price increases on indexed contracts. New suppliers were selected to increase competition and reduce costs.	→
Mobile equipment	High demand affected delivery times and prices. Investments in the truck fleet and an increased focus on automation and electrification.	Prices have largely followed inflation, but eased slightly toward the end of the year.	→
Logistics	The cost of transport services increased in general as a result of higher fuel prices, taxes and fees. Continued shortage of drivers in Europe.	Unforeseen strikes and disruptions in rail traffic and shipping drove up costs. Competitive sourcing, mainly in Finland, meant total cost levels were maintained.	↗
IT & Telecom	The price of IT services has increased in line with wages and currency effects. The main strategy of standardization, consolidation and exposure to competition remains.	General inflation was balanced by a number of groupwide procurements and consolidations which resulted in small overall savings within the category.	↘
Indirect materials & services	Temporary labor, consultants and cleaning costs are driven by wage trends in the countries concerned. Other items are affected by the degree of competition in the local markets.	Overall prices in the category were unchanged despite inflationary pressure from increased wages.	→
Tools & consumables	The main cost drivers are raw materials and exchange rate changes. The overall strategy is group-wide contracts and a focus on countering price creep.	Standardized contracts in this category contribute to competitive prices, but in general prices increased slightly.	↗
Electrical Installations & equipment	High demand for products and services for electrification and a general shortage of industrial electricians has led to wage drift in many regions. Focus on long-term collaborations and framework agreements with contractors.	Demand and wages are cost drivers, but price increases were moderate during the year thanks to existing framework agreements for ongoing electrical work.	↗

Purchase volume per category

- Services, 30% (27)
- Bulk goods and chemicals, 13% (15)
- Logistics, 13% (15)
- Electricity, 11% (12)
- Fixed equipment, 10% (8)
- Mobile equipment, 9% (9)
- IM&T, IT and other, 7% (7)
- Tools and consumables, 4% (4)
- Electrical installations and equipment, 3% (2)

Purchase per currency



- EUR, 52% ((51)
- SEK, 41% (43)
- USD, 4% (3)
- NOK, 2% (3)
- GBP, 0.4% (0.4)
- Other, 0.4% (0.2)

Total purchase volume in 2019, excluding concentrates, was SEK 18.4 billion. Business Area Mines represented 59% (58) of the purchase volume, while business area Smelters stood for 41% (42).

DEVELOPMENT: THE GROUP

Financial development during the year

The Group's operational result decreased compared to 2018. Higher metal prices in Swedish kronor were countered by lower grades, more extensive maintenance shutdowns and strikes. Production in both business areas decreased. The focus has been on improved safety and better productivity.

Revenues and operating profits

Boliden's revenues totalled SEK 49,936 m (52,454), and the operating profit was SEK 7,597 m (9,004). The operating profit excluding revaluation of process inventory was SEK 7,035 m (9,074). The operating profit for Mines totalled SEK 4,484 m (6,451), while for Smelters, the operating profit excluding revaluation of process inventory was SEK 2,716 m (2,435). Planned maintenance shutdowns for Smelters were charged to the profit in the sum of SEK –745 m (–200) in the form of lower production and higher costs. The Group's operating costs before depreciation totalled SEK 16,053 m (15,125), with the increase due to increased costs for maintenance, personnel and consumables. Depreciation increased as a result of higher mined production. Finnish strikes, initiated at the national level, had a negative impact on operating profits in the amount of approximately SEK 100 m.

Investments

Investments for the year totalled SEK 8,826 m (6,140). Slightly more than half of this was maintenance investments which includes waste rock excavation to access the ore in the mines. Major projects during the year included the acquisition of new mining trucks for the open pits, the expansion in Kevitsa to achieve a milled volume of 9.5 Mtonnes and the new leaching plant in Rönnskär.

Future reclamation costs

The reclamation provision and associated non-current assets have been increased by SEK 1,070 m and SEK 815 m respectively. An investigation into the reclamation of land in Rönnskär showed a need for future reclamation work on certain storage locations. The estimated reclamation cost is SEK 139 m, which was expensed in the second quarter. New results were obtained in the second quarter from investigations relating to an ongoing environmental permit process regarding future reclamation work at the Kevitsa mine. The investigations indicate high requirements regarding future capping of mining waste. As a result, the reclamation provision and the corresponding asset in Kevitsa have both been increased by EUR 56 m. For further info, see Note 25.

Cash flow

The cash flow from operating activities before changes in working capital totalled SEK 10,005 m (11,531). Increased working capital had a negative effect on the cash flow of SEK –562 m (237), and the cash flow from operating activities totalled SEK 9,442 m (11,768). The free cash flow totalled SEK 635 m (5,692). Paid tax for the year totalled SEK 2,060 m (2,286).

Financial position

As of 31 December 2019, Boliden's net debt totalled SEK 5,493 m (2,034). Equity totalled SEK 41,440 m (39,011), including net market valuation of currency and interest rate derivatives in the amount of SEK 47 m (11) after fiscal effects. The net debt/equity ratio increased to 13% (5) at the end of 2019 as a result of lower free cash flow. The average term of Boliden's total granted loan facilities at year-end was 3.4 years (3.5). As of 31 December 2019, the average interest level in the debt portfolio was 1.1% (1.3) and the fixed interest term was 1.1 years (0.9). At year-end, Boliden's current liquidity, in the form of cash and cash equivalents and unutilized binding credit facilities with terms of over one year, totalled SEK 7,165 m (9,964). For further information, see Note 29.

The Parent Company

The Parent Company conducts limited operations and operates, fiscally speaking, on commission with Boliden Mineral AB. For further information, see page 75.

Principles for remuneration to the President and other senior executives

Boliden's remuneration to senior executive consists of fixed salary, variable remuneration, pension benefits and other benefits. Remuneration to senior executives is described in Note 5. The Board of Directors will propose to the Annual General Meeting a change in the guidelines for senior executives. The change, however, does not in essence mean a change in the principles now in force.

Performance analysis

SEK m	2019	2018
Operating profit	**7,597**	**9,004**
Revaluation of process inventory	561	–70
Operating profit excl. revaluation of process inventory	**7,035**	**9,074**
Change		**–2,039**
Analysis of change		
Volumes		–2,583
Prices and terms		1,341
Metal prices		*–1,056*
By-product prices		*258*
Treatment and refining charges		*130*
Metal premiums		*22*
Exchange rate effects		*1,987*
Costs (local currencies)		–576
Depreciations (local currencies)		–150
Items affecting comparability[1)]		–126
Other		54
Change		**–2,039**

[1)] 2019 includes an expense item in the amount of SEK –139 m for future reclamation work in Rönnskär. 2018 includes an item in the amount of SEK –50 m for a fire in Bergsöe and a SEK +37 m item in respect of the sale of the closed Canadian mine, Premier Gold.

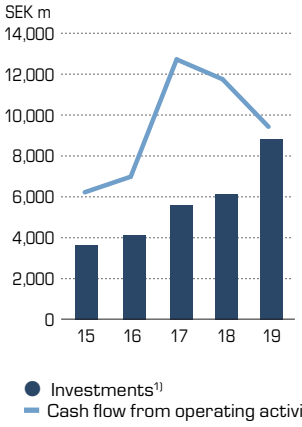
Investments

SEK m	2019	2018
Mines	6,409	4,482
Smelters	2,398	1,656
Other	19	2
Total investments	**8,826**	**6,140**

Financial performance

SEK m	2019	2018
Revenues	49,936	52,454
Operating costs before depreciation	16,053	15,125
Depreciation	5,092	4,930
Operating profit excl. revaluation of process inventory	7,035	9,074
Operating profit	7,597	9,004

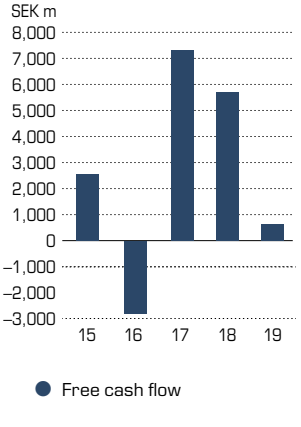
Investments and cash flow from operating activities



The cash flow from operating activities totalled SEK 9,442 m (11,768).

1) Investments excluding acquisitions: Kevitsa 2016 (SEK 5,961 m)

Free cash-flow



The free cash flow totalled SEK 635 m (5,692).

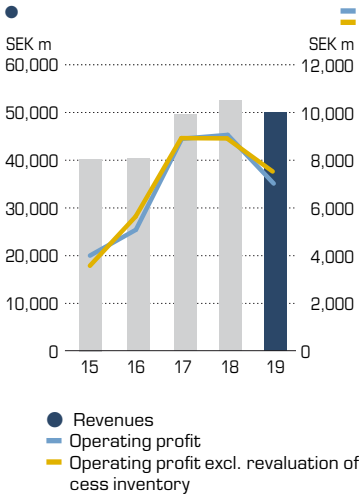
Cash flow

SEK m	2019	2018
Cash flow from operating activities before changes in working capital	10,005	11,531
Changes in working capital	–562	237
Cash flow from operating activities	9,442	11,768
Cash flow from investing activities	–8,807	–6,076
Free cash flow (before financing)	635	5,692

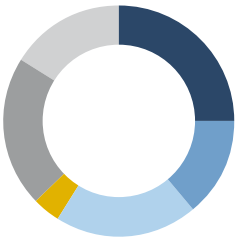
Capital structure and returns

SEK m	2019	2018
Balance Sheet total, SEK m	66,424	58,727
Capital employed, SEK m	49,809	44,441
Equity, SEK m	41,440	39,011
Net debt, SEK m	5,493	2,034
Return on capital employed, %	16	20
Return on equity, %	14	19
Equity/assets ratio, %	62	66
Net debt/equity ratio, %	13	5

Revenues and operating profit

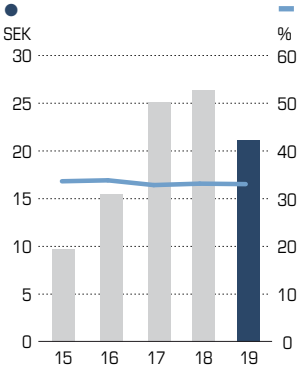


Breakdown of operating costs



Personnel, 25% (25)
Energy, 14% (14)
Consumables and spare parts, 20% (19)
Transport, 4% (4)
External services, 21% (20)
Depreciations and other, 16% (18)

Earnings per share and dividend share



Earnings per share totalled SEK 21.15 (26.32). The proposed ordinary dividend is SEK 7.00 (8.25) per share, corresponding to a dividend share of 33.1% (33.2). For 2018, an extra dividend of SEK 4.25 per share was made through an automatic share redemption procedure.

Financial information, Mines

The major part of sales from Mines are made to Boliden's smelters on market terms. Revenues decreased to SEK 17,060 m (18,404), of which external sales totalled SEK 1,318 m (1,788). Operating profit from Mines decreased to SEK 4,484 m (6,451), mainly as a result of lower grades. Total operating costs for Mines before depreciations were SEK 8,849 m (8,481). This corresponds to an increase of 3% (4) in local currency. Depreciations increased to SEK 3,824 m (3,708), mainly as a result of higher percentage of mined production taking place in capital-intensive areas. Investments increased to SEK 6,409 m (4,482).

The deterioration in Aitik's operating profit during the year was due to the fact that the positive effect of higher milled volumes and higher metal prices in Swedish kronor could not fully compensate for the negative effect of lower grades.

Profit in the Boliden Area was in line with 2018, as stable milled volumes at higher metal prices in Swedish kronor were neutralized by higher costs. Garpenberg did not achieve the level of 2018's operating profit, as higher milled volumes were counteracted by lower zinc prices and higher zinc treatment charges. Kevitsa's operating profit fell sharply compared to 2018. The mine has been in a transitional phase to increase production, which entails additional costs. Furthermore, a nationwide strike initiated in December had a negative impact. Kylylahti turned 2018's operating loss into a small operating profit. Production is limited by technical mining challenges as the mine proceeds towards final mining in the second half of 2020. Despite this, the operating profit increased during the year mainly as a result of lower depreciations in line with reduced milled volumes. Tara's deterioration in profits during the year was

Key data

	2019	2018
Revenues, SEK m	17,060	18,404
Operating costs excl. depreciations, SEK m	8,849	8,481
Depreciations, SEK m	3,824	3,708
Operating profit, SEK m	4,484	6,451
Investments, SEK m	6,409	4,482
Capital employed, SEK m	28,719	26,328
Return on capital employed, %	16	25
Number of employees, FTE	3,442	3,291

Performance analysis

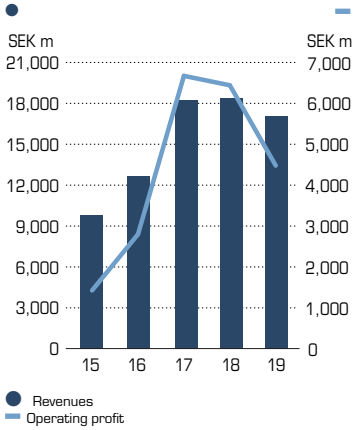
SEK m	2019	2018
Operating profit	**4,484**	**6,451**
Change		**–1,967**
Analysis of change		
Volumes		–1,760
Prices and terms		124
Exchange rate effects		*1,271*
Costs (local currencies)		–259
Depreciations (local currencies)		–72
Items affecting comparability[1)]		–37
Other		37
Change		**–1,967**

[1)] 2018 included an item in the amount of SEK +37 m related to the sale of the issues Canadian mine, Premier Gold.

Operating profit

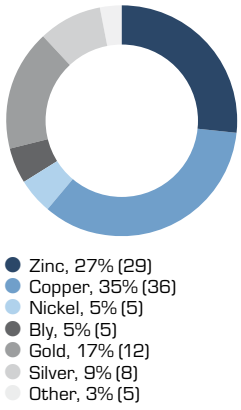
SEK m	2019	2018
Aitik	2,149	2,494
The Boliden Area	738	756
Garpenberg	2,079	2,225
Kevitsa	67	974
Kylylahti	39	–31
Tara	283	798

Revenues and operating profit



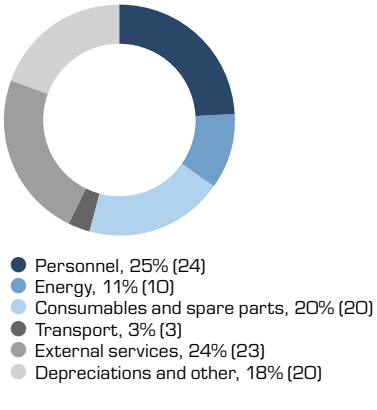
The reduction in operating profit compared to 2018 is due mainly to lower grades.

Breakdown of sales per metal



Copper and zinc constitute the main part of Boliden's revenues. The item "Other" includes inter alia cobalt.

Breakdown of operating costs



Operating costs, excluding depreciation, increased by 3% in local currencies.

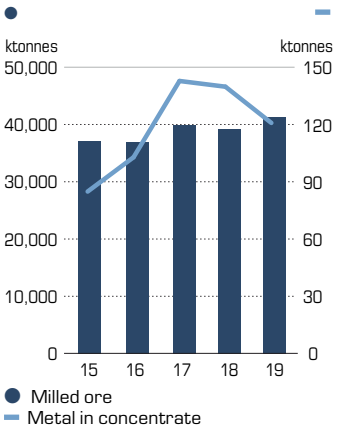
due to lower grades, lower zinc prices and higher zinc treatment charges.

Production, Mines

The production of copper concentrate decreased compared to 2018, but remained unchanged in the case of zinc. Higher milled volumes in Tara and Garpenberg were countered by lower zinc grades. Higher milled volumes in Aitik was countered by lower copper grades in all copper producing mines. Lower grades also caused the production of precious metals in concentrate to decrease. The production of nickel fell sharply mainly due to lower grades, but also as a result of a strike in Kevitsa.

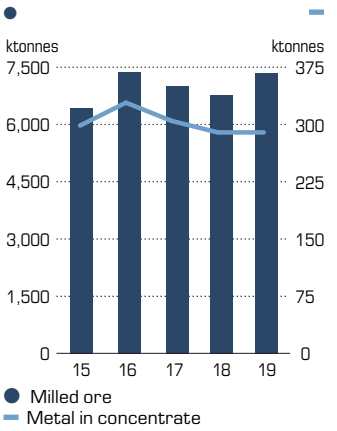
Aitik's milled volume increased to a new record level of 40.7 Mtonnes (38.5), thanks to improved crusher availability. The copper grade fell to 0.25% (0.29). Recovery deteriorated compared to the previous year due to a higher proportion of oxidized ore. The milled volume increased somewhat in the Boliden Area as the area's three remaining mines compensated for the loss of ore from Maurliden, which was mined out in 2019. Garpenberg's milled volume increased to 2,861 ktonnes (2,622), and thus zinc production increased somewhat. Tara also increased its milled volume, but despite this, lower grades led to lower zinc production. Kevitsa's milled volume was unchanged, but lower grades and the strike led to lower metal production. During 2019, Kevitsa was in a transitional phase to increase production in 2020. Kylylahti's milled volumes and metal production both decreased. Production was hampered by technical challenges in the mine related to its planned closure in 2020.

Copper production



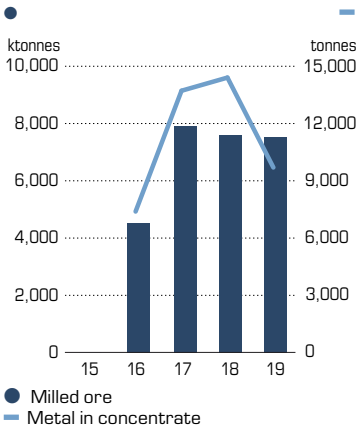
The production of copper in concentrate decreased primarily as a result of lower grades in Aitik and Kevitsa.

Zinc production



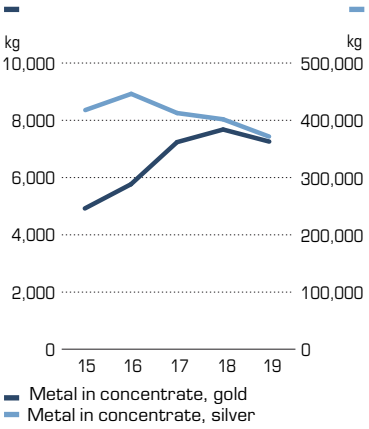
Zinc production was in line with the previous year. Higher milled volumes were unable to compensate for lower grades, especially in Tara.

Nickel production



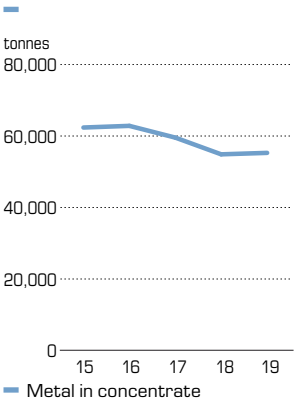
The production of nickel fell mainly as a result of lower grades and a nationally initiated strike in Kevitsa.

Gold and silver production



The decrease in the production of gold in concentrate is primarily explained by poorer grades in Aitik and Kevitsa.

Lead production



The production of lead in concentrate was stable. Increased production, mainly in the Boliden Area, was countered by lower production in Tara.

Financial information, Smelters

Revenues totalled SEK 48,556 m (50,634) and the gross profit, excluding revaluation of process inventory, was SEK 10,969 m (10,088).

The operating profit, excluding revaluation of process inventory, was SEK 2,716 m (2,435). Including the process inventory revaluation effect of SEK 561 m (–70), the operating profit totalled SEK 3,277 m (2,364). Total operating costs for Smelters before depreciations were SEK 7,070 m (6,490). This corresponds to an increase of 5% (4) in local currency.

Improved terms for zinc treatment charges and a stronger USD made a positive contribution. Higher costs attributable to maintenance shutdowns and strikes in Kokkola and Harjavalta had a negative effect. The operating profit was affected by maintenance shutdowns by SEK –745 m (–200), which also includes a negative impact on earnings from the nickel breakdown in Harjavalta of approximately SEK –180 m. Discussions are ongoing with insurance companies about possible compensation.

Rönnskär's lower profit was due to the counteraction of the positive effect of improved market conditions by lower volumes at higher costs. In the second quarter, Rönnskär was burdened by an item affecting comparability of SEK –139 m regarding future land reclamation work. Harjavalta did not achieve the level of 2018's operating profit despite improved prices and terms. A breakdown in the nickel line and the fourth quarter's strike both had a negative effect. Kokkola's profit increased sharply thanks to improved zinc treatment charges, despite the negative effect of the strike in the fourth quarter.

Key data

	2019	2018
Revenues, SEK m	48,556	50,634
Gross profit excl. revaluation of process inventory, SEK m	10,969	10,088
Operating costs excl. depreciations, SEK m	7,070	6,490
Depreciations, SEK m	1,253	1,220
Operating profit excl. revaluation of process inventory, SEK m	2,716	2,435
Operating profit, SEK m	3,277	2,364
Investments, SEK m	2,398	1,656
Capital employed, SEK m	21,175	18,237
Return on capital employed, %	16	13
Number of employees, FTE	2,350	2,322

Performance analysis

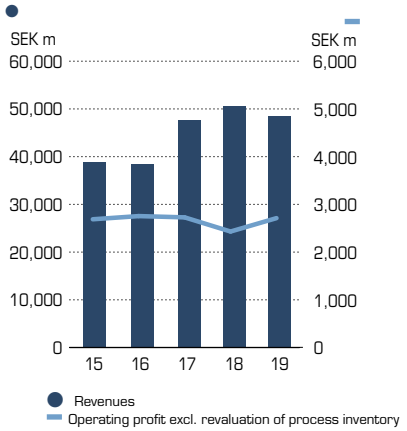
SEK m	2019	2018
Operating profit	**3,277**	**2,364**
Revaluation of process inventory	561	–70
Operating profit excl. revaluation of process inventory	**2,716**	**2,435**
Change		**281**
Analysis of change		
Volumes		–749
Prices and terms		1,508
Exchange rate effects		*661*
Costs (local currencies)		–336
Depreciations (local currencies)		–65
Items affecting comparability[1)]		–89
Other		12
Change		**281**

[1)] 2019 includes a cost item in the amount of SEK -139 m for future reclamation work in Rönnskär, and 2018 includes an item in the amount of SEK -50 m for the fire in Bergsöe.

Operating profit

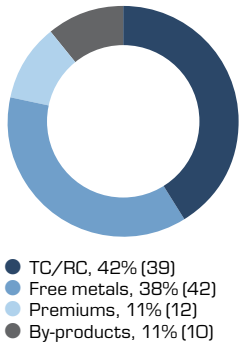
SEK m	2019	2018
Rönnskär	519	756
Harjavalta	746	1,043
Kokkola	912	461
Odda	467	168
Bergsöe	97	8

Revenues and operating profit excl. revaluation of process inventory



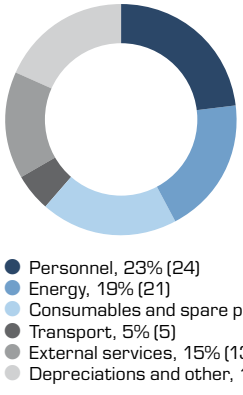
Operating profit excluding revaluation of process inventory was higher compared to the previous year mainly as a result of higher zinc treatment charges and a stronger USD.

Breakdown of gross profit excl. revaluation of process inventory



Treatment charges and free metals accounted for 80% of gross profit excluding revaluation of process inventory.

Breakdown of operating costs



Operating costs, excluding depreciation, increased by 5% in local currencies.

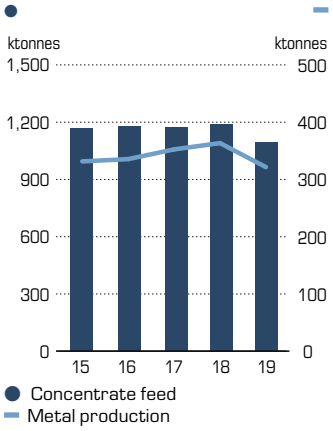
Odda also benefited from significantly higher zinc treatment charges, which was the principal reason for the improvement in profit. Bergsöe's profit increased thanks to improved prices and terms combined with increased productivity. However, Bergsöe's operating profit in 2018 included an item affecting comparability of SEK –50 m related to a fire.

Production, Smelters

Smelters' production of zinc and lead was unchanged from 2018. The production of other metals decreased. Rönnskär's process stability improved, but lower precious metal content in raw materials and more extensive maintenance shutdown had an adverse effect. The same applied to Harjavalta, which also suffered a nickel failure in July in connection with maintenance work and a four-day industrial strike at the end of the year. Kokkola's feed and zinc production decreased somewhat. Production and availability were generally good, but here too, an industrial strike and a longer electricians' strike in the fourth quarter had a negative effect. Production in Odda increased compared to the previous year and reached the highest volume so far in terms of both feed and volume of cast zinc. Thus the expansion investment previously carried out has shown good results.

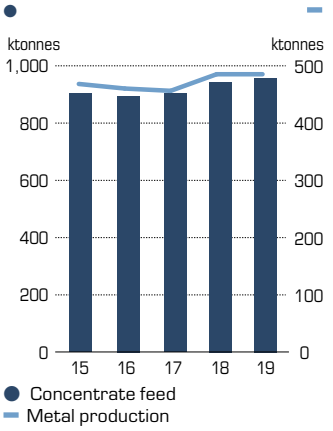
Bergsöe's production of lead alloys was higher than in 2018 thanks to improved process stability. The new plastics separation plant commissioned during the third quarter had a positive effect in regard to both battery feed and lead production.

Copper production



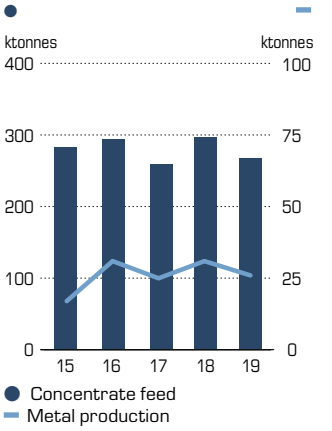
Concentrate feed and copper production declined primarily as a result of maintenance shutdowns and a Finnish strike.

Zinc production



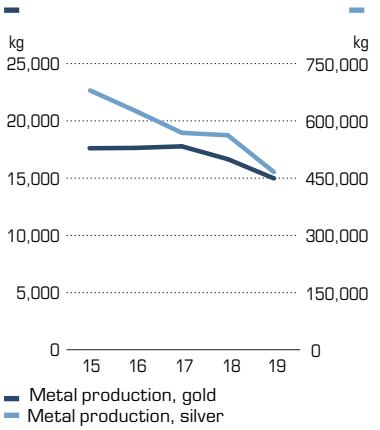
Zinc production was unchanged. Increased production in Odda made a positive contribution, but strikes in Kokkola had a negative effect.

Nickel production



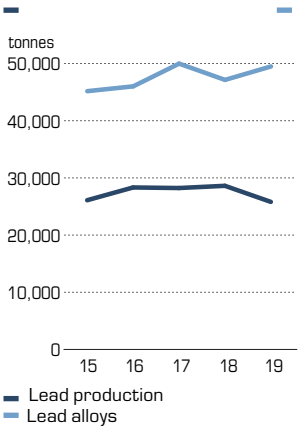
Harjavalta's nickel production decreased as a result of a breakdown and a strike.

Gold and silver production



Precious metal production fell mainly due to lower grades in input concentrate and the Finnish strike.

Production of lead and lead alloys



Lead production was affected positively by improved process stability in Bergsöe but was affected adversely by maintenance in Rönnskär.

Trends on the metal markets

Base metal prices fell in line with the downturn in the industrial business cycle with the exception of nickel, which fell during the first six months but rose sharply during the second six months. The rise in the nickel price followed news that the Indonesian state will reintroduce its export ban on nickel ore, which was imposed in order to limit the supply of nickel from China. Precious metal prices rose, which is a common pattern during business cycle downturns.

Market trends 2019

The industrial business cycle deteriorated during the year and industry growth was low. Global GDP grew faster than industrial production as the service sector continued to expand and the growth of global consumption was at a good level. The demand for copper increased during the first half of the year but weakened during the second half. Zinc demand fell for the second year in a row primarily driven by a weak automotive market and a poorer industrial climate. Nickel demand increased due to the high stainless steel production increase in China and Indonesia during the first half of the year. Copper supply increased, but there was a shortage of concentrate from mines during the second half of the year and treatment charges on the spot market fell. Supply and demand in the copper metal market were in balance.

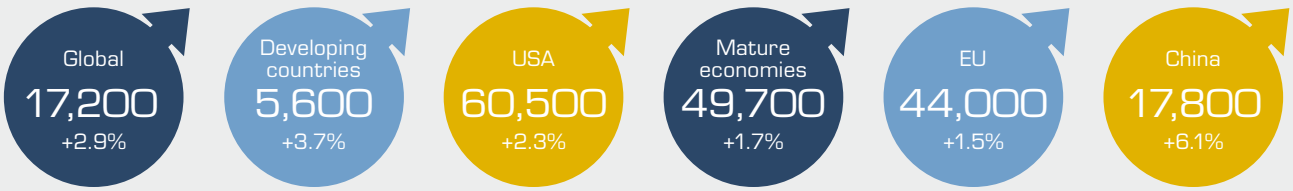
Zinc mines that began operations during the past two years continued to increase production, but the increase was lower than anticipated, while smelters in China remained out of production. This resulted in a continued global shortage of zinc metal. The supply of zinc concentrate increased and treatment charges rose.

The supply of nickel metal increased and balanced demand. During the autumn, the Indonesian state announced that the export ban on nickel ore will be reintroduced in 2020, which may limit the nickel supply from China. China imports large volumes of ore from Indonesia for the production of nickel pig iron.

Global economic growth

The demand for metals is growing fastest in countries where the per capita GDP is within the USD 5,000 to 15,000 range as society's progress from agricultural to industrial economies. Lower rates

PER CAPITA GDP 2019



Values are rounded in USD PPP constant prices. Change refers to GDP growth compared to the previous year. Source: Oxford Economics, IMF October 2019

TRENDS IN SUBMARKETS, 2019

The demand for Boliden's metals is driven chiefly by the level of activity in the global industry, trends in the infrastructure and construction markets (construction market investments) and the automotive market.

Submarket	Global	China	USA	Europe
Construction market investments	Lower growth	Good growth	Low growth	Good growth
Industry activity level	Lower growth	Lower growth	Low growth	Lower level
Vehicle production	Lower level	Lower level	Lower level	Lower level

ABOUT PRICING

Metals

Prices for copper, zinc, nickel and lead are set daily on the London metal exchange (LME). In addition to the price, there is usually a premium whose level is governed by the local balance between metal demand, smelter capacity, shipping costs and payment terms. Prices for gold, silver, palladium and platinum are set in a similar way by the London Bullion Market Association (LBMA). Cobalt and Tellurium prices are published in the Metal Bulletin.

Concentrates

The price of concentrate is usually the LME price less treatment charges and is calculated on the payable part of a concentrate's metal content, and regulated by terms and conditions between mines and smelters. The balance between the supply of concentrates from the world's mines and smelter demand governs pricing between mines and smelters.

of investment in China are expected to dampen the growth in demand for metals compared to the past 10 to 15 years. It will take another 10 to 15 years before other populous countries take over as growth drivers for base metal markets. Mature economies still account for a significant share of global demand, but growth is low. Investments in new energy systems and electrification in various sectors will have a positive effect on demand throughout the world. Recycled metal is expected to increase as a proportion of total supply.

Business cycle patterns

Mines have a limited lifespan and the supply of metal will decline unless new mines are put into production. Investments in new mines will only take place if companies believe future prices will make mining projects profitable. When metal prices are low, high-cost mines are closed temporarily or permanently to bring the market into balance.

There has been rapid expansion of copper smelters in China, while the expansion of global mining capacity is sometimes limited. Therefore copper prices peaked in 2011 and treatment charges were low for several years and bottomed in 2012. Mine supply increased subsequently, treatment charges rose and metal prices fell. Over the past two years, mining supply was once again limited, treatment charges had fallen and the metals market has been in balance.

The expansion of zinc smelters in China was also rapid, but mining capacity and metal stocks were sufficient to keep the metal market in balance until 2014. When major mines closed permanently in 2015 and 2016, treatment charges were depressed until 2018 and the metal price peaked. The supply of concentrate increased in 2019, and treatment charges rose sharply from a low level.

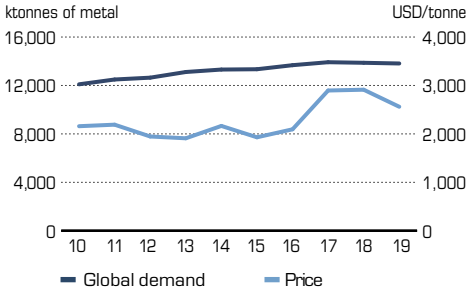
There was extensive investment in nickel mines and nickel smelters until the early 2010s, which resulted in a surplus of metal. A number of mines closed in 2014, and there was a shortage of metal between 2016 and 2018. Supply grew faster than demand in 2019, and there was balance in the metal market and a metal surplus from time to time.

Trends, prices and terms

ZINC MARKET

Price and global demand

Source: REFINITIV, CRU Jan 2020



Global demand

13.8

MTONNES (–0.4%)

Global demand fell for the second year running, smelter production was still lower than normal in China, and there was a global shortage of metal. Smelter production has been a bottleneck for a long while. Demand in China increased by 1% and accounted for approximately 48% (48) of global demand.

Average price

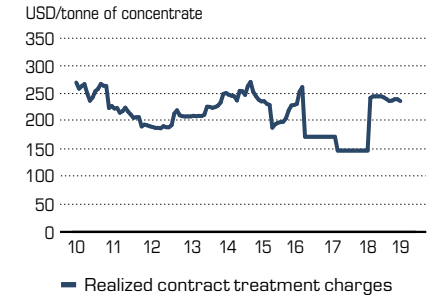
2,546

USD/TONNE (–13%)

The average metal price fell compared to last year. Prices rose at the beginning of the year to a peak of USD 3,030 but then fell in line with weak trends in the industrial business cycle and at its lowest was USD 2,200 in September and December. The price was USD 2,280 (2,519) at year-end, well above cash cost for high-cost mines in the 90th percentile on the cash cost curve for mines.

Treatment charges (TC)

Source: CRU Jan 2020



Global smelter production

13.5

MTONNES (+1.7%)

Global production increased by just under 2% and in China by 6%, with the biggest increase occurring during the second half of the year. Smelter production in China was lower than usual for an extended period following environmental reviews and as a result of lower profitability.

Realized contract treatment charges (TC)

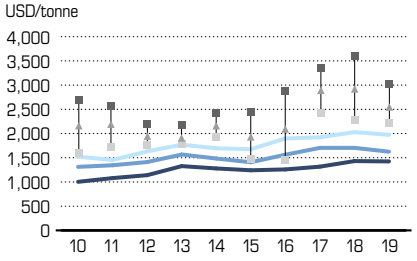
241

USD/TONNE CONCENTRATE (+64%)

Negotiations in the run-up to 2019 led to a sharp rise in contract treatment charges as the supply of concentrate was expected to rise while smelter capacity continued to be a bottleneck. The cost sharing mechanism between mines and smelters changed from zero sharing to a certain sharing of the zinc price change. Spot market treatment charges at year-end were higher than contract prices.

Cash cost and price

Source: Wood MacKenzie, REFINITIV Jan 2020



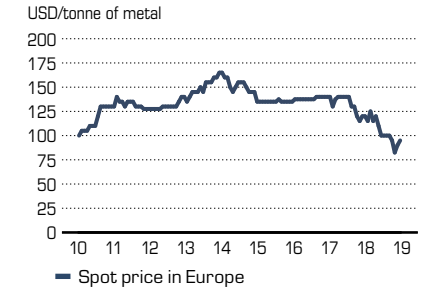
Cash cost zinc

In weaker market conditions, metal prices have often reached bottom at a cash cost level for high-cost mines. On occasional trading days during difficult economic conditions, the zinc price dropped towards the 60th percentile where 40% of production has a negative cash flow. On average, zinc prices during difficult market conditions have been close to the 90th percentile. It was mainly higher treatment charges that increased the average cash cost level in 2019. Cash cost in the 90th percentile is estimated to have increased to USD 2,030 per tonne (1,920).

50th percentile · 75th percentile · 90th percentile
Minimum price · Average price · Maximum price

Spot metal premium in Europe

Source: CRU Jan 2020



Global mining production

12.4

MTONNES (+0.8%)

Mining production increased by slightly less than 1% and was higher than demand from smelters. Smelter capacity was a bottleneck during the year as capacity was closed in China as a result of environmental audits. Mining production in China increased after having declined last year. A number of new major mines are ramping up in various countries and part of the volume increase comprises more complex concentrates.

Spot metal premiums in Europe

103

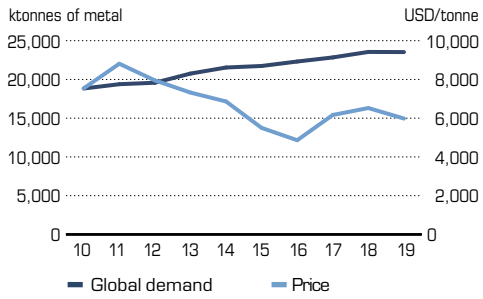
USD/TONNE (-20%)

The European metal market continued to be well supplied and the metal premium on the spot market fell further.

COPPER MARKET

Source: REFINITIV, CRU Jan 2020

Price and global demand



Global demand

23.5

MTONNES (–0.1%)

Global demand was unchanged from last year, but growth was high during the first half of the year and weaker during the second half. Demand increased by 1% in China and accounted for 50% (50) of global demand. In the rest of the world, demand fell by slightly more than 1%.

Average price

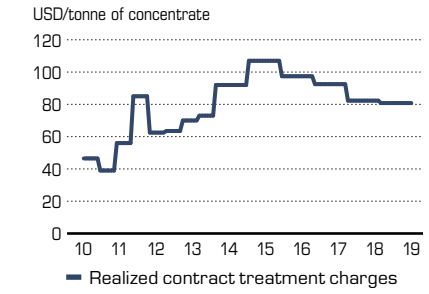
6,000

USD/TONNE (–8%)

Prices rose during the spring to a peak of USD 6,556, but then fell when the industry business cycle weakened, and in September it was at a low of USD 5,585. The price then rose to USD 6,149 (5,949) at year-end, which is above cash cost for high-cost mines in the 90th percentile on the cash cost curve for mines.

Source: CRU Jan 2020

Treatment charges (TC)



Global smelter production

23.6

MTONNES (–0.1%)

Global production was unchanged compared to last year, and increased by just over 3% in China, which continued to expand capacity. China's share of global production was 40% (39). Production in the rest of the world was 2% lower, largely due to extensive maintenance shutdowns in smelters.

Contract treatment charges (TC)

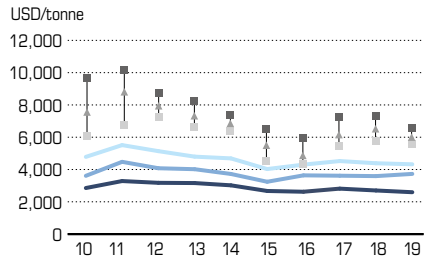
80.8

USD/TONNE CONCENTRATE (–2%)

Compared to 2018, lower contract treatment charges were negotiated in the run-up to 2019 as a certain shortage was anticipated. From a historical standpoint, production disruptions in the mining industry were few, but there was still a shortage of concentrate outside integrated flows. Treatment charges on the spot market dropped below contract level.

Source: Wood MacKenzie, REFINITIV Jan 2020

Cash cost and price



Cash cost copper

In weaker market conditions, metal prices have often reached bottom at a cash cost level for high-cost mines. On occasions during difficult economic conditions, the copper price dropped towards the 80th percentile where 20% of production has a negative cash flow. On average, copper prices during difficult market conditions were higher than the 90th percentile. It was mainly lower prices for bi-metals that raised the average cash cost level in 2019. The cobalt price fell sharply from the high level in 2018. Cash cost in the 90th percentile was close to unchanged at USD 4,390 (4,520) per tonne.

50th percentile · 75th percentile · 90th percentile
Minimum price · Average price · Maximum price

Source: CRU Jan 2020

Spot metal premium in Europe

Global mining production (concentrates)

16.5

MTONNES (–0.6%)

Mining production (concentrates) decreased slightly from 2018 due to production disruptions during the winter in conjunction with unrest in Chile and strikes. There were few major copper projects ramping up and the capacity increase was limited.

Spot metal premiums in Europe

44

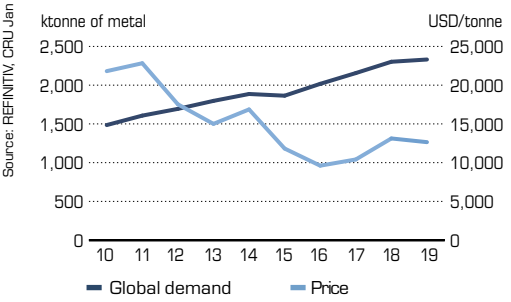
USD/TONNE (–6%)

Spot premiums declined further during 2019 as the availability of metals for quick delivery to Europe was good.

NICKEL MARKET

Price and global demand

Source: REFINITIV, CRU Jan 2020



Global demand

2.3

MTONNES (+2.9%)

Nickel demand rose by just under 3% from 2018 and growth during the first half of the year was high, driven by increasing stainless steel production in Indonesia and China. The battery sector continued to grow, but so far has a limited share of the total nickel market. Nickel stocks on exchanges fell sharply during the year and were low compared to global metal consumption.

Average price

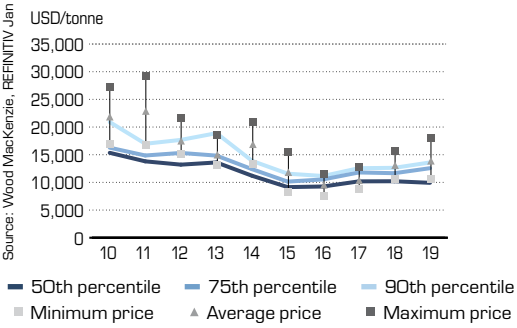
13,936

USD/TONNE (+6%)

The nickel price trended in line with other base metals during the first half of the year, but rose sharply from July to October upon news of the reintroduction of the Indonesian export ban on nickel ore. The price fell from October when the growth and demand weakened, ending the year at USD 13,950 per tonne (10,605). The price at year-end was somewhat higher than cash cost in the 90th percentile.

Cash cost and price

Source: Wood MacKenzie, REFINITIV Jan 2020



Global smelter production

2.3

MTONNES (+8.6%)

Production of nickel metal increased by just under 9%; a significant share of the growth was in Indonesia and China when new nickel pig iron (NPI) installations began operation. Total NPI production in China and Indonesia accounted for 42% (37) of global nickel supply.

Global mining production

2.6

MTONNES (+11%)

The Philippines and Indonesia together accounted for 49% (43) of global mining production and they provide the raw material for the production of NPI in China and Indonesia. Global mining production increased by 11% and in Indonesia by 45%, but it fell by 2% in the Philippines, a country which also exports ore. In the run-up to 2020, Indonesia will reintroduce a ban on the export of nickel ore.

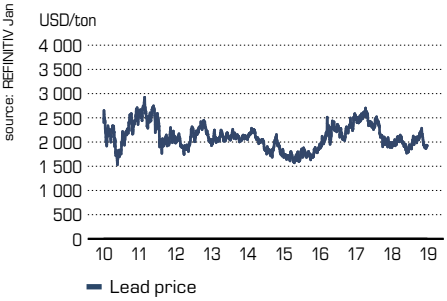
Cash cost nickel

In weaker market conditions, metal prices have often reached bottom at a cash cost level for high-cost producers. The nickel price has seldom dropped below cash cost in the 75th percentile, but high stocks depressed the nickel price even lower in 2016 and 2017. Cash cost in the 75th percentile was USD 11,680 per tonne (11,800), and in the 90th percentile USD 12,630 per tonne (12,600). Lower prices for bi-metals, mainly cobalt, a stronger USD and lower oil prices have lowered the average cash cost from 2018.

LEAD MARKET

Price and global demand

source: REFINITIV Jan 2020



Average price

2,000

USD/TONNE (–11%)

Lead

Global lead demand fell by 0.5% compared to 2018, due to a weak global car market that was only balanced in part by the aftermarket for car batteries. There was a surplus of lead metal in the market, and the lead price fell by 11% compared to 2018. There was a prolonged scarcity in the concentrate market, but it gradually moved to a supply surplus in 2019.

MARKETS FOR PRECIOUS METALS AND SULFURIC ACID

Source: REFINITIV Jan 2020

Gold price

Average price

1,394

GOLD USD/TROZ (+10%)

16.2

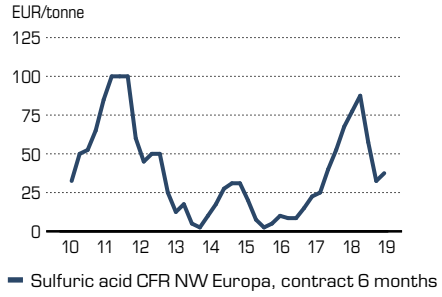
SILVER USD/TROZ (+3%)

Gold and silver

Because gold and silver prices are governed by expectations about the global economic situation, the metals have often been sought after in times of great uncertainty and a weak economy. Over the past 10 years, they have assumed an increasingly important place in the investment portfolios of financial operators. The gold price rose compared to the previous year, driven by increasing concern about economic prospects. The silver price also rose slightly, but silver forms a significant share of consumption in segments sensitive to the economic cycle.

SOURCE: CRU Jan 2020

Sulfuric acid price



Average price

54

EUR/TONNE (–9%)

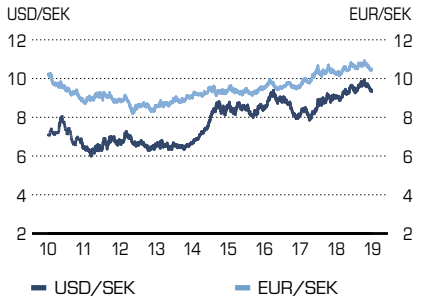
Sulfuric acid

Global sulfuric acid demand was in line with supply during the first quarter of 2019, after which there was a global surplus. Prices on the north-west European market were lower than in 2018.

CURRENCY TRENDS

SOURCE: CRU Jan 2020

Currency

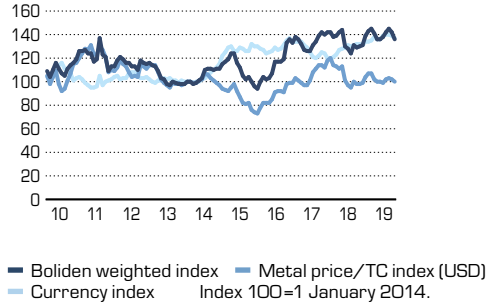


The US dollar continued to trend strongly during the year, and the American currency strengthened against most other currencies. A continuing, relatively strong American economy and interest rate differentials compared to the Euro area contributed to the strength of the dollar. The euro weakened against the dollar, but appreciated against the Swedish krona.

On average, the USD to SEK rate was 9.46 (8.69), and at year-end it stood at 9.32 (8.97). On average, the EUR to SEK rate was 10.59 (10.26), and at year-end it stood at 10.43 (10.28).

BOLIDEN WEIGHTED INDEX

Index



The table on the left shows a weighted index of the prices, terms and currencies that have the greatest impact on Boliden's profits, together with a weighted currency index and a weighted metal price and treatment charge index. The Boliden weighted index rose by 5% during the year and is at a historically high level. Currencies and metal prices have often displayed a negative correlation that has had an equalizing effect on the Boliden-weighted index and on Boliden's earnings.

The Boliden share

The Boliden share is noted on NASDAQ Stockholm exchange and is part of the Large Cap segment. During the year, the share price rose by 29%, thus trending more strongly than the Stockholm Stock Exchange.

Trading in the Boliden share

In all, 0.7 billion (0.9) Boliden shares were traded in 2019 with a total value of SEK 284 billion (245). The NASDAQ accounted for 76% of all trading in Boliden shares. During the year, 384 million (395) Boliden shares were traded on the NASDAQ Stockholm, with a total value of SEK 91 billion (103). An average of 1.6 million (1.6) shares were traded per trading day, and the Boliden share accounted for 2.1% (2.3) of the total volume of shares traded on the NASDAQ Stockholm. The largest exchange after NASDAQ, was Cboe CXE, which accounted for 14% of trading in the share.

Price trend and dividend

The Boliden share rose by 29%, compared to the OMX Stockholm 30 index, which rose by 26%, and the EMIX Global Mining Index in SEK, which rose by 30%. At year-end 2019, the Boliden share was quoted at SEK 249 (192) on NASDAQ Stockholm, corresponding to a market capitalization of SEK 68.0 billion (52.5). In common with other raw materials companies, the value of the Boliden share varies on average more than the broad stock market indices. Over the last five years, the beta value of the Boliden share against OMXSPI has been 1.39.

The Board of Directors proposes to the Annual General Meeting an ordinary dividend of SEK 7.00 (8.75) per share for 2019, which is in line with Boliden's dividend policy. The proposed dividend corresponds to 33.1% (33.2) of the net earnings per share and a dividend yield of 2.8% (4.6) of the share price at year-end. The Boliden share's total return (dividend paid and the price trend) over the most recent 10-year period, was on average, 14% per annum.

Share capital

The total number of shares is 273,511,169. Each share has a nominal value of SEK 2.12, and the share capital totals 578,914,338. Boliden's share capital comprises a single class of share in which every share has the same voting power and grants the same entitlement to dividends. The Boliden Articles of Association contain no provisions restricting the right to transfer shares or any limitations with regards to the number of votes that a shareholder can exercise at General Meetings of the company's shareholders. Boliden does not hold any of its own shares, nor has it issued any shares in 2019.

Boliden is unaware of any agreement between shareholders that may entail restrictions on the right to transfer shares in the company. Boliden is not party to any significant agreement affected by any public buyout offer. Boliden has no shareholders who have declared that they directly or indirectly represent at least one tenth of the total number of votes for all shares.

Ownership structure

As of 31 December 2019, Boliden had 82,922 shareholders (77,354).

Approximately 63% of the shares (60) were registered to foreign accounts. The ten biggest individual shareholders represented 28.2% (30.6) of the share capital.

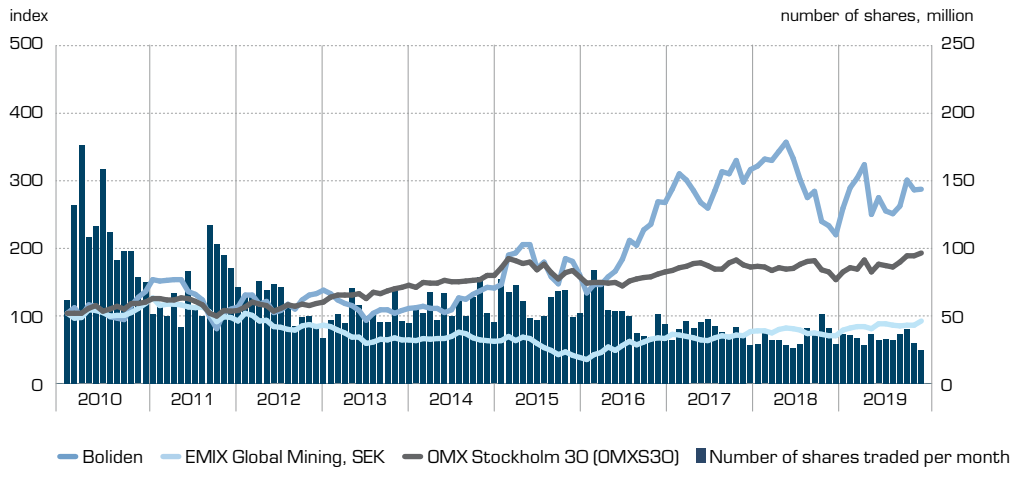
Boliden's employees hold shares, via profit sharing foundations, for which voting rights cannot be directly exercised. At year-end, the foundations held 964,354 shares (653,418).

Share price, sector index, and Nasdaq Stockholm

Share price, sector index, and Nasdaq Stockholm

During the year, the Boliden share rose by 29%, while the OMX Stockholm 30 index rose by 26% and the EMIX Global Mining Sector index in SEK rose by 30%.

Source: Thomson Reuters Datastream



Breakdown of Boliden's shares as of 31 December 2019

Shareholdings	Number of shareholders	Number of shares	Shareholding, %	Votes, %
1 – 100	45,769	1,687,514	0.6	0.7
101 – 500	23,813	6,876,871	2.5	2.5
501 – 1,000	7,040	5,851,926	2.3	2.1
1,001 – 10,000	5,730	15,398,570	6.0	5.6
10,001 – 50,000	343	7,327,071	3.1	2.7
50 001 –	227	178,095,104	64.3	65.1
Anonymous ownership		58,274,113	21.3	21.3
Total	**82,922**	**273,511,169**	**100.0**	**100.0**

Source: Monitor, Modular Finance AB Holdings

Boliden's 10 biggest shareholders as of 31 December 2019

Percentage of capital and votes, %	
Norges Bank	5.2
BlackRock	5.0
Swedbank Robur	4.8
Vanguard	2.9
Handelsbanken fonder	2.2
AMF	2.0
Söderbloms Factoringtjänst AB	1.8
T. Rowe Price	1.5
SEB Fonder	1.4
Invesco	1.4
Total	**28.2**

Source: Monitor, Modular Finance AB. The verification date may vary for certain shareholders.

The share in brief, 2019

Exchange	Nasdaq Stockholm
Ticker	BOL
ISIN code	SE 0012455673
ICB code	1700
Highest price paid	SEK 292
Lowest price paid	SEK 182
Closing price	SEK 249
Market cap. 31 Dec	SEK 68 b
Turnover ratio	143%
Number of shares	273,511,169
Beta value (5 years)	1.39

Source: Nasdaq OMX

Annual total return as of 31 December 2019	1 year	3 years	5 years	10 years
Boliden	35%	5%	18%	14%
OMX Stockholm 30	31%	9%	8%	10%
EMIX Global Mining, SEK	35%	16%	12%	2%

The average total shareholder return on the Boliden share over the past 10 years was 14% per annum and 270% for the period as a whole.

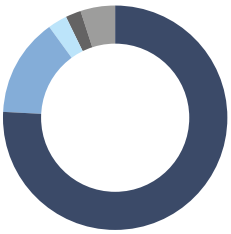
Source: REFINITIV

Shareholder information on the website

Continuously updated information about the Boliden share, the shareholder list, metal prices and currencies is available on the Boliden website at boliden.com. Boliden's financial reports, presentations and contact details to the stock analysts in the 18 banks and fund commissioners who monitor Boliden are also available on the website.

Boliden's 2019 capital market days began in Stockholm on 13 March followed by a visit to Aitik on 14 March. The theme was "Continuing our strategy for stable and profitable growth". Around 100 institutional investors, analysts and journalists took part.

Trading on different exchanges

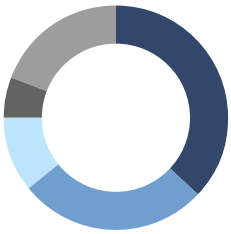


- Nasdaq, 76%
- Cboe CXE, 14%
- Aquis, 3%
- Cboe BXE, 2%
- Other, 5%

In 2019, the percentage of Boliden shares traded on the Stockholm Exchange increased to 76% (63).

Source: Monitor, Modular Finance AB

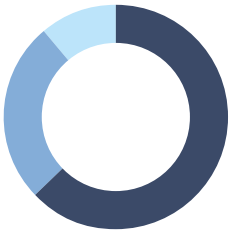
Ownership by country



- Sweden, 37%
- USA, 27%
- United Kingdom, 11%
- Norway, 6%
- Other, 19%

The percentage of foreign-owned shares increased in 2019; 63% (60) of the shares were registered to foreign accounts.

Ownership by category



- Foreign accounts, 63%
- Swedish legal entity accounts, 26%
- Swedish natural person accounts, 11%

Risk management

Boliden pursues a business that is exposed to fluctuations in metal prices and foreign exchange rates. Operations affect the surrounding environment and many processes are associated with occupational health and safety risks. Boliden seeks to mitigate these risks, inter alia through scenario analysis.

OPERATIONAL RISKS

Operational risks are managed by the operating units in compliance with the guidelines and instructions established for each business area and unit.

Risk	Description of risk	Management and comments for the year
Health and safety	Boliden handles large flows of materials both above ground and below. Employees and contractors are periodically exposed to heavy machinery and lifting, to high temperatures, and to substances that are hazardous to health. Inattentiveness or departures from established procedures can create dangerous situations and increase the risk of injury. A great many Boliden employees and contractors do shiftwork, which increases psycho-social risks.	Boliden has a zero vision for accidents and follows established procedures for health and safety. The number of accidents resulting in lost time (LTI) per million hours worked, including contractors, fell compared to 2018. The intensified work on developing Boliden's safety culture in recent years has begun to yield tangible results, thanks to the continued focus on managerial involvement, preventive risk management, and greater involvement by employees in health and safety activities. Other important activities that helped generate these positive results include an increased understanding of psychosocial risks such as stress, unhealthy workloads and shift work.
Environmental impact	***Environmental impact*** Boliden's operations affect the air, water, land and biodiversity in the vicinity of those operations. The extraction of metals also creates waste products that must be processed safely. There are risks posed by both ongoing and decommissioned operations. Significant issues managed by Boliden include emissions to air and discharges to water, waste storage, land-use (landfill, waste management, impact on biodiversity), climate and energy consumption. ***Climate change*** Global warming may increase the risk of more severe weather events as the global climate continues to change. Changes in precipitation may lead to heavier snowfall or flooding that can affect operations. ***Emission allowances*** Changes to regulations and taxes in the EU Emissions Trading Scheme (ETS) may lead to cost increases that jeopardize Boliden's competitiveness on the international market. ***Water management and dam safety*** Tailings ponds constitute one of the mining industry's significant risks through their environmental impact during dam construction, and the risk of dam failure. Extreme weather conditions and changes in average rainfall affect these risks.	Boliden sets emissions goals and monitors them closely. The management of emissions and discharges is based on risk analyses, monitoring and maintenance. Also, technological development is constantly in progress to ensure best resource utilization and the smallest possible waste volumes. To safeguard Boliden's contribution to the global climate challenges, it has created a climate programme covering the entire Group; see page 36. Boliden's operations have also implemented an energy management system to improve energy efficiency and conserve energy. In business area Smelters, excess heat is utilized to help reduce carbon dioxide emissions. Each unit is responsible for evaluating the physical risks associated with weather conditions and their operation. Planning includes the analysis of scenarios arising from changed climate conditions in a mine's various phases (including reclamation following closure) as part of the investigation process. Boliden works through industry organizations to promote transparency in the emissions trading system and to ensure that European metal producers are not disadvantaged. Boliden develops water balance models to ensure better resource utilization and to create a wider safety margin in relation to emergency water discharges. Every operating unit with its own dam has a dam safety manager and a dam operations manager.
Unplanned stoppages	Boliden's production essentially consists of continuous processes, and any unplanned stoppages can affect production, emissions and discharges to air and water, and financial performance. Stoppages may be long-term. Unplanned stoppages may occur due to e.g. technical problems, accidents or strikes.	Boliden carries out preventative maintenance work at all of its production facilities. Major maintenance shutdowns are carried out every year within the smelting operations, while maintenance work forms an integral part of day-to-day operations in mines.
Skills supply	In the years ahead, a large number of Boliden employees will retire. Meanwhile, a major technology shift is taking place in Boliden with an increase in digitization and automation that will require new skills in many different occupational areas. In general, the competition for skilled labour is hardening in many of the places where Boliden operates, due to e.g. business start ups.	Work was begun during the year to create a group-wide talent management framework aimed at ensuring a uniform approach to work with talent, leaders and employees with key skills in the company. Also, the Board decided to invest in a group-wide HR computer system to create conditions for standardized personnel processes. Work with diversity, equal opportunities and the clarification of Boliden's employer brand will also play important parts in the years ahead.

MARKET AND COMMERCIAL RISKS

Boliden's market and commercial risks are primarily managed within the individual business areas and at Group level.

Risk	Description of risk	Management and comments for the year
Metal prices	Changes to metal prices have a significant impact on Boliden's profits and cash flow.	Boliden's policy is not to hedge metal prices, but rather to allow changes to be reflected in profits. Some exceptions are made, e.g. when mining ore bodies with short residual lifespans or in conjunction with major investments. Boliden also continuously hedges the metal price and currency exposure, known as transaction exposure, that Smelters are subject to during the period between the purchase of raw materials and the sale of corresponding metals (with the exception of process inventory).
Treatment charges	Treatment charges make up a large part of the smelters' gross profit and are determined by supply and demand in metal concentrates.	Terms are negotiated annually by the major operators in the mining and smelting industries. Boliden applies these terms internally and the majority of external contracts are based on them.
Customers	In copper, Boliden is dependent on a small number of large customers. Reduced sales to industrial customers in Europe increases the need to conduct sales via the London Metal Exchange (LME), with slightly lower margins as a result.	Boliden endeavours to reduce these risks by maintaining a diversified portfolio of customers with long-term relationships, via its own northern European sales organization. Boliden also has plans in place that would enable production to be reorganized to produce LME-quality products for sale via the LME.
Raw materials supply	Stable, reliable raw materials supply is important for creating the most profitable raw materials mix and thereby enabling the smelters to produce at high levels of capacity utilization and consistent quality.	Boliden endeavours to conclude long-term contracts in relationships with reliable external suppliers of metal concentrate and secondary materials, who also demonstrate high-performance in sustainability issues.
Energy prices	Energy accounts for approximately 14% of operating costs, and changes in energy prices can have a significant effect on profitability.	In Norway, Boliden has a long-term electricity agreement with inflexible pricing clauses. The contract portfolios in Sweden, Finland and Ireland have shorter terms and Boliden is more exposed to market prices, and rising or falling energy prices affect operating profit accordingly. During the year, Boliden concluded long-term contracts in Sweden and Finland which come into force in 2021 and 2022. Boliden monitors the potential for entering into longer term pricing agreements as and when favourable terms are offered.
Brexit	A no-deal Brexit may entail risks to transport flows in Europe.	Boliden has analysed potential scenarios and prepared certain actions.

FINANCIAL RISKS

Boliden has a centralized finance department responsible for managing financial risks with the exception of credit risks in trade receivables. The role of the finance department is to support management and operational units with risk control. The finance department is responsible for identifying and limiting the Group's financial risks in line with the financial policy adopted by the Board of Directors.

Risk	Description of risk	Management and comments for the year
Exchange rate and metal price risks	The pricing terms for Boliden's products are primarily determined on raw materials exchanges such as the London Metal Exchange (LME) for base metals, the London Bullion Market Association (LBMA) for precious metals, and the currency and money market. Because Boliden's products are largely priced in USD, fluctuations in the USD, SEK and EUR exchange rates have a significant impact on Boliden's profits and cash flow. The Group's exchange rate and metal price exposure covers transaction exposure and translation exposure. ***Transaction exposure*** Boliden's transaction exposure arises from binding undertakings to customers and suppliers. ***Exposure in connection with binding undertakings*** A transaction risk arises when Boliden undertakes to participate in a transaction at a fixed value and which is not compensated for by an opposite transaction of a corresponding size and nature. The Group buys metals in the form of raw materials, which it processes into refined metals, and where the purchase price of the raw materials and the exchange rates may differ from the final sales value. Such differences arise from variations in quantities and processing and selling dates. Some customers are offered fixed prices in different currencies that are sometimes set well in advance of delivery. ***Exposure in connection with forecast cash flows*** This exposure also arises from future revenues that are affected by fluctuations in metal prices and exchange rates.	Transaction exposures in conjunction with binding undertakings are hedged, with the exception of the smelters' process inventory. The Group uses futures contracts to ensure that the sale price and exchange rate correspond to those applicable in conjunction with the purchase of the raw material in question or with the signing of a sales agreement at a fixed price. Hedge accounting is applied to forward exchange agreements to hedge fair values in the Income Statement. Boliden's policy is not to hedge metal prices and exchange rates in relation to the Group's future income. To limit risks in certain situations, Boliden may hedge parts of forecast cash flows. Also, see the section under market and commercial risks. Boliden continuously calculates the way in which changes in metal and exchange rate markets will affect the Group's future financial position. The Group's total sensitivity to the factors listed in the sensitivity analysis table below is calculated on the basis of the quarterly reports detailing the Group companies' planned exposure arising from metal production, exchange rates and interest. This information forms the basis for quantifying the effects from various market scenarios and for managing financial risks, which are then reported to the Board, management and the market. The Group may use contracts to hedge metal prices and exchange rates for the cash flows from forecast metal sales. Hedging is only carried out in conjunction with certain major investments, when the investment amount is in a currency other than local currency. Boliden uses a rolling forward exchange rate contract strategy with maturities shorter than two months. When a forward exchange rate contract falls due, a new contract is signed as a separate hedging relationship. Hedge accounting is applied to the derivative to hedge cash flows in Other comprehensive income. See page 58 for a sensitivity analysis of how the Other comprehensive income is affected by a change in the value of financial derivatives (cash flow hedging).

CONT. FINANCIAL RISKS

Risk	Description of risk	Management and comments for the year
Currency risk	***Translation exposure*** A translation difference arises when converting net investments in overseas operations into Swedish kronor in conjunction with exchange rate fluctuations, which affects Other comprehensive income within the Group.	Under Boliden's finance policy, the effect of translation exposure is not actively eliminated (so-called equity hedging). However, if an external borrowing requirement exists, the liability in foreign currency is used as equity hedging against the foreign asset pool. The main borrowing currencies are EUR and SEK.
Interest rate risk	Changes in market interest rates affect the Group's profits and cash flows. The rapidity with which a change in interest rate levels affects the Group's net financial items depends on the fixed-interest term and the duration of the loans.	Boliden's financial policy provides the scope for an average fixed interest term of up to three years. On 31 December 2019, the Group's loan portfolio had an average fixed interest term of 1.1 years (0.9). Interest rate swaps are used to extend the fixed interest term.

Sensitivity analysis

Operating profit, excluding outstanding derivatives: The table below presents an estimate of how changes in market terms will affect the Group's operating profit over the next 12 months. The calculation is based on listings on 31 December 2019 and on Boliden's planned production volumes. The sensitivity analysis disregards the effects of metal price hedging, currency hedging, contract treatment charges, and the revaluation of process inventory in the smelters.

SEK m	2019				2018			
Change in metal prices, +10%	**Operating profit**	**Net financial items**	**Tax**	**Equity**	**Operating profit**	**Net financial items**	**Tax**	**Equity**
Copper	785	8	–170	623	730	10	–163	577
Zinc	750	8	–162	596	740	10	–165	585
Gold	400	4	–86	318	300	4	–67	237
Silver	185	2	–40	147	165	2	–37	130
Nickel	150	2	–32	119	100	1	–22	79
Lead	110	1	–24	87	110	1	–25	87
Change in exchange rates, +10%								
USD/SEK	1,600	17	–346	1,270	1,490	20	–332	1,177
EUR/USD	1,065	11	–230	846	970	13	–216	767
USD/NOK	165	2	–36	131	130	2	–29	103
Change in treatment charges, +10%								
TC Zinc	90	1	–19	71	55	1	–12	43
TC/RC copper	65	1	–14	52	75	1	–16	60
TC lead	–10	0	2	–8	–10	0	2	–8
Change in market interest rates by +1% [1]		58	–12	46		34	–7	26

Other comprehensive income, including outstanding derivatives: The table on the right provides an estimation of the effect on other comprehensive income (revenue and expense items including reclassification adjustments not reported in profits), before tax, from the change in value of outstanding derivatives based on closing day prices as of 31 December 2019. Changes in the value of financial derivatives relating to binding commitments and translation exposure, have very little or no effect on profit or on other comprehensive income. Accordingly, the table on the right includes effects from changes in the value of derivatives that are intended to meet the Group's forecast exposure.

SEK m	2019	2018
Translation exposure in net investments in foreign operations, exchange-rate +10%[2]	**Other comprehensive income**	**Other comprehensive income**
EUR/SEK	1,615	1,586
NOK/SEK	166	138
Effect of interest rate +1%, USD/SEK +10%[3]		
Interest-rate derivatives, interest rate swaps	37	5
Foreign exchange derivatives, USD/SEK	11	3

[1] Based on closing loan portfolio excluding interest rate swaps on 31 December.
[2] Based on closing balances on 31 December.
[3] Based on outstanding derivatives as of 31 December.

CONT. FINANCIAL RISKS

Risk	Description of risk	Management and comments for the year
Refinancing and liquidity risk	The risk that Boliden will be unable to obtain the requisite financing or meet its payment obligations due to insufficient liquidity.	Boliden limits refinancing risk by ensuring a good spread of counterparties, financing sources and maturities. Satisfactory current liquidity is created in the form of unutilized credit facilities containing an extra liquidity reserve extending beyond identified needs, and with maturities adapted to market and operational conditions. The need for refinancing is reviewed regularly and is mainly dependent on market trends and investment plans. The loan agreements include certain defined key ratios which must be met to avoid early repayment. A deterioration in the global economic climate may entail increased risks in respect of profit performance and financial position, and the risk of Boliden coming into conflict with loan terms and conditions. Boliden complied with all loan conditions in 2019. The average term of total loan limits was 3.4 years (3.5) at the end of the year, which is in accordance with established Group policy. As of 31 December 2019, Boliden's current liquidity, in the form of cash and cash equivalents and unutilized binding credit facilities with a term of more than one year, totalled SEK 7,165 m (9,964). See also note 29 on financial liabilities and the maturity profile. Boliden has a structure of cash pools that enables a central overview of liquidity flows and ensures efficient management of the Group's liquidity.
Credit and counter-party risk	***Credit risks and financial operations*** The term 'credit and counterparty risk' refers to the risk that a counterparty in a transaction may fail to fulfil their obligation, thus causing the Group to incur a loss. Boliden's financial exposure to counterparty risk mainly occurs when trading in derivative instruments. ***Credit risks in trade receivables*** The risk of the Group's customers failing to fulfil their obligations constitutes a credit risk.	Boliden's financial policy mandates a Standard & Poor's credit rating of A when entering into a transaction, and a maximum investment of cash and cash equivalents per counterparty. The credit quality and counterparty spread for derivatives are considered to have been good in 2019. On 31 December 2019, the credit risk in derivative instruments corresponded to a market value of SEK 93 m (154), which relates to Boliden's receivables from external counterparties. Offsetting of financial assets and liabilities is regulated under ISDA agreements (International Swaps and Derivatives Association) which handle both offsetting between contracted counterparties during day-to-day operations and in conjunction with special circumstances, such as failure to pay. In the course of its day-to-day operations, Boliden reports market values net in the same currency, and with the same counterparty, that fall due when the surplus amount is paid by the party with the biggest liability. In the event of a breach of contract, all outstanding obligations covered by ISDA agreements are terminated. In the majority of ISDA agreements, the outstanding sum is paid by the counterparty with the biggest liability. Credit risks are managed through an established credit rating process, active credit monitoring, short credit periods, and daily procedures for monitoring payments. The necessary provisions for doubtful receivables are also monitored continuously. The quality of trade receivables is deemed to be good. Impairment charges for outstanding trade receivables on 31 December 2019 only occur in limited amounts and have also been insignificant in historical terms. See also Note 20, Trade and other receivables. Credit insurance is also used in certain cases.
Risk management and insurance	The risk of damage that causes financial loss.	The objective of the risk management function at Boliden is to minimize the total cost of the Group's damage risks. This is achieved partly by continuously developing damage prevention and mitigation efforts in the operations, and partly by introducing and developing group-wide insurance solutions.
Financial reporting	The risk of inaccurate financial and operational reporting.	Boliden has a well functioning internal control structure. Control functions exist locally, in individual units, the business areas and at the head office. All of the functions work within a group-wide internal control framework for financial reporting that is based on COSO. Controls are tested annually within the framework, both internally and by external auditors. Operational reporting is followed up and controlled by the Group's controller function, which works closely with the local units and the business areas.

OTHER RISKS

Risk	Description of risk	Management and comments for the year
Legal risks	Boliden's operations are to a great extent subject to licensing and to wide-ranging environmental and other regulations. Also, Boliden may become involved in commercial disputes and legal proceedings.	Operations are dependent to a great extent on the retention and renewal of existing licences and the granting of new ones. Boliden monitors legal developments in relevant fields, and implements, follows up and ensures compliance with applicable laws and regulations. Boliden participates actively in the development of legislation through its membership in industry associations, and training initiatives for decision-makers and other stakeholder groups. Information on legal proceedings and disputes is provided in Note 31.
Risks to confidence	Confidence in Boliden can be harmed by events such as accidents or the failure of employees or business partners to live up to Boliden's business ethics and responsibility requirements. See also pages 38 and 39.	Boliden conducts systematic evaluations and sanctions checks on customers and suppliers. The evaluations are made inter alia with the aid of a self-assessment form. New business partners must accept Boliden's code of conduct for business partners before contracts are concluded. Where necessary, audits are carried out on business partners' premises to ensure compliance with the code of conduct. In the event of departures from the code of conduct an improvement plan must be drawn up and in the case of serious breaches, collaboration may be terminated. Boliden trains its employees in anti-corruption and competition law. Selected target groups are trained in trade sanctions. Boliden has a crisis management group with procedures for managing crises and complex events. Boliden also has a whistleblower system that enables the anonymous reporting of serious irregularities within the Group.
Political risks	Political decisions can have effects in Sweden and in the countries where Boliden and its business partners conduct operations. Examples of such decisions include changes to various types of taxes, the management of reclamation work and permitting processes.	Boliden and its industry organizations are often referral bodies for upcoming political decisions relating to Boliden's operations.

Corporate Governance

Governance of the Group
Boliden is a Swedish limited company listed on Nasdaq Stockholm. The Boliden Group has approximately 6,000 employees and runs mines and smelters in Sweden, Finland, Norway and Ireland.

Boliden's corporate governance is based on the Swedish Annual Accounts Act, the Swedish Companies Act, Nasdaq Stockholm Rule Book for Issuers, the Swedish Code of Corporate Governance, and other applicable legislation and regulations.

In addition to these enactments and regulations, Boliden applies internal governance instruments, such as New Boliden Way – the Group's organizational and operational philosophy – and the internal control tool, BICS. There are also policies in a number of areas; one such is Boliden's code of conduct, which all employees must be familiar with and follow. Also, the Group's units work in compliance with management systems for occupational health and safety, the environment, energy and quality.

Issues during 2019
The past 10 years have involved major changes in the outside world. Some global trends, such as the focus on sustainability in terms of occupational health and safety, the environment and business ethics, have become prerequisites for all responsible businesses. In the same way, technological advances in electrification and artificial intelligence have opened up new opportunities. Other trends with major impacts include globalization and internationalization.

Naturally, all of these external factors and changes influence the Board's work and the issues discussed in the boardroom. The central focus is always business, but over time the meaning of the word business has become more complex, and it not only conveys the concept of profitability, but also concern for people and the environment.

It is part of the Board's remit to consider these overarching issues. During the year, Board meetings discussed issues such as: What are the metals of the future and how should we position ourselves? Where are mines and smelters being opened, and what does supply and demand look like? Do electric vehicles and new battery technology present a threat or an opportunity for Boliden's business – positive for copper, but how will metal recovery be affected in the immediate future and long-term? What are the forces that control the nickel market? How should Boliden prepare for a business downturn? Should it prioritize organic growth, or are there any interesting acquisition opportunities?

Macro discussions like these form the foundation of the investments tabled for a Board decision. In 2019, investments other than various maintenance investments totalled around SEK 4.5 billion, so it's a matter of making sure the money is placed where it does most good. To achieve this, investments are not only prioritized by evaluating their profitability, but also with regard to technology choices, sustainability,

COMMENT FROM THE CHAIRMAN OF THE BOARD

Efficient corporate governance is a prerequisite for generating added value for our shareholders and maintaining confidence among our stakeholders in a broader sense.

A group, essentially comprising Swedish institutional investors, has been a long-term owner in Boliden since we were re-listed in Sweden nearly 20 years ago, and the last few years have seen their ranks joined by a number of large, foreign, institutional owners. However, there is no clear principal owner, and this places special demands on the Board as the owners' ambitions must be "inferred".

We work in an industry that is characterized by high volatility, that is, rapid and vigorous fluctuations in profits, and this is something that our shareholders have to understand. It also places great demands on the company's management and Board and their ability to provide high quality, transparent information and to handle rapid changes without suffering from hubris during upturns or despondency during downturns.

At the same time, the Board and management must be able to manage major, long-term investment projects. Naturally, while such projects are crucial for value creation within the company, they also entail many risks, and these are discussed by the Board over a relatively long period before any decision is taken.

One of the prerequisites for value-generating work by the Board is that the Board has a firm grip on operations and a good grasp of events in the outside world. We achieve this through e.g. monthly reports and a well-structured body of material for the Board. We also usually visit two of Boliden's operating facilities every year to make a thorough study of the operations and to meet local management and employees.

To make sure we devote sufficient time to the more long-term, strategic issues, we agree each year on a number of themes for incorporation into our agenda. The Corporate Governance Report details the themes we addressed during the past year. Some of them are recurring themes, such as CSR issues, which we address specifically at our October meeting, and leadership development, which is the focus of our December meeting.

The evaluation of the Board's work as performed in 2019 shows that it continues to function well. The evaluation forms the basis for the work of the nomination committee, and is an important tool for the Board's efforts to ensure continuous improvement in its work.

February 2020

Anders Ullberg
Chairman of the Board

safety and other relevant parameters. The biggest and most important investments are the subject of discussions for extended periods before a Board decision is taken. Another important part of this work is following up previous investment decisions to ensure good cost control as well as checking the expected positive effects. One of the Board's central tasks is to make certain resources are allocated and used optimally to improve competitiveness and safeguard long-term, sustainable operations that create value for our shareholders.

These days, the need for investments to be sustainable is almost a foregone conclusion. But the things that provide the best environmental benefit themselves demand careful, complex consideration and sometimes compromises that are difficult to reconcile. To achieve its carbon dioxide emissions targets, the Board resolved in 2019 to take further steps in the electrification of mine transport in Aitik and Kevitsa with new trucks, an extension of the electric trolley track and approved long-term electricity contracts from wind farms in close proximity to the mines in the Boliden Area and the smelter in Kokkola. A collaboration agreement was also concluded with Vattenfall regarding technology developments in the electrification of mines and smelters, the circular economy, battery solutions and freedom from fossil fuels. Investments in minimizing waste are made e.g. through the previously initiated investment program for Rönnskär, which includes a new leaching plant for processing residual products and the commissioning of an underground repository, both in progress at the same time as production capacity is being expanded.

Mines are finite resources, and there are constant efforts to extend the lifespan of existing assets and to find new deposits. In 2019, the Board paid special attention to the Boliden Area's challenges to compensate for the operations in the Maurliden mine, which came to an end during the year. The Board also visited Tara in Ireland to gain a better on-the-spot understanding of the conditions for prolonging production there.

A related issue with regard to developing deposits and one which has kept the Board busy, is what Boliden can do to enjoy more predictable, efficient permitting processes.

ANNUAL GENERAL MEETING 2019

The Annual General Meeting (AGM) was held on 3 May in Boliden. The AGM was attended by 1,166 shareholders in person or by proxy, representing a total of slightly more than 109 million shares. The shares represented constituted approximately 40% of the total number of shares. The majority of Board members and members of Group management and the auditor were present at the AGM.

Among other things, the AGM resolved to re-elect all Board members with the exception of Pekka Vauramo, who had declined re-election. Perttu Louhiluoto was elected as a new Board member. Anders Ullberg was re-elected as Chairman of the Board. The AGM also resolved:

- To pay a dividend of SEK 8.75 per share, totalling SEK 2,393 m (2,256), in accordance with the proposal by the Board.
- To disburse just under SEK 1,162 m to the shareholders, in addition to the ordinary dividend, corresponding to SEK 4.25 per share, through an automatic redemption procedure. Thus together with the ordinary dividend, shareholders received SEK 13 per share, i.e. a total of almost SEK 3,555 m.
- To appoint Jan Andersson (Swedbank Robur fonder), Lars-Erik Forsgårdh, Ola Peter Gjessing (Norges Bank Investment Management), Tommi Saukkoriipi (SEB Investment Management) and Anders Ullberg (Chairman of the Board) as members of the nomination committee.
- To raise the fee to the Chairman of the Board by SEK 100,000 to SEK 1,750,000, to raise the fees to Board members who are not Boliden employees by SEK 30,000 to SEK 580,000, and to raise the fees for work in the audit committee to SEK 225,000 for the Chairman and SEK 125,000 to each of the audit committee's other two members, all in accordance with the proposal by the nomination committee. The fees for the remunerations committee remained unchanged at SEK 50,000 to each of the committee's two members.
- To elect Deloitte AB as the company's auditors for the period up to the conclusion of the next AGM, in accordance with the proposal by the nomination committee, and that auditors' fees be payable against approved invoices.

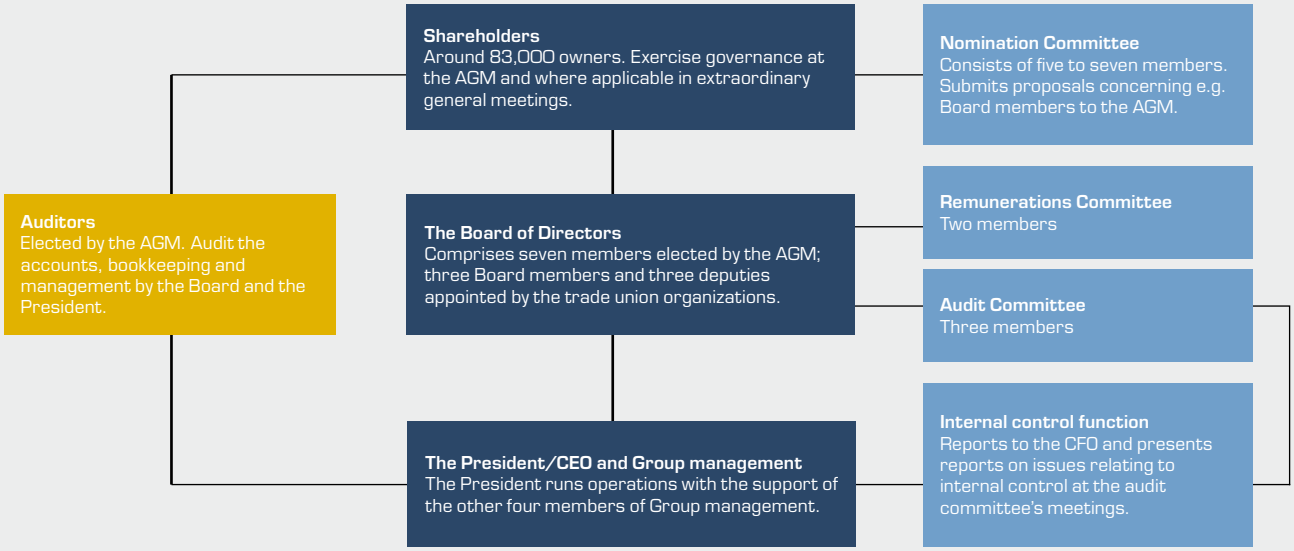
The AGM also resolved to approve the proposed principles for remuneration to Group management whereby the remuneration must comprise a fixed salary, any variable remuneration, other benefits and pensions. Variable remuneration may not exceed 60% of the fixed salary for the President and 40–50% of the fixed salary for other senior executives and must be based on outcomes in relation to set targets. The variable remuneration is not pensionable salary.

The resolutions passed by the 2019 AGM are noted in the minutes of the meeting published on Boliden's website, where the minutes of previous AGMs are also published.

WELCOME TO THE 2020 ANNUAL GENERAL MEETING.

The 2020 AGM will take place in Aitik on 28 April.

BOLIDEN GOVERNANCE STRUCTURE



Is it possible to grow organically in the markets where the company operates today; what are the permitting processes and conditions; is it possible to develop deposits with reasonable conditions and within a reasonable time period? Other issues concerning the mining industry's conditions and co-existence side-by-side with different interests have also been up for discussion, such as how the local population is affected by planned expansions, especially in the light of the relocation of the Liikavaara community nearby Aitik.

Dam safety is another important sustainability issue that is the subject of recurrent reviews. As a result of the dam failure that occurred earlier in the year in Brazil, the Board emphasizes the importance of learning the right lessons and further improving dam safety work. Last but not least, the Board also discussed the challenges identified regarding the availability of personnel with the right skills and Boliden's attractiveness as an employer.

Shareholders and the AGM

The biggest shareholders are Swedish and foreign funds and institutions. At year-end, the number of shareholders was 82,922 (77,354). The biggest single shareholders were Norges Bank, BlackRock and Swedbank Robur. The share of foreign ownership increased during the year to approximately 63% (60). Further information about ownership structure is available on pages 54 and 55 in the annual report and on Boliden's website.

Boliden's shareholders exercise their right of decision by submitting proposals to, and participating in and voting on the resolutions submitted to the AGM and any extraordinary general meetings. Shareholders may request that a matter be discussed at the AGM by submitting a written request to the Board at the designated time sufficiently in advance of the meeting that the matter can be included in the notice to attend. Shareholders are also welcome to submit enquiries on company issues to the Board and the President, the auditor and the remuneration committee and audit committee chairmen during a general meeting.

The AGM is the highest decision-making body. The duties of the AGM include the election of members of the Board, the Chairman of the Board, and the nomination committee; adoption of the income statement and balance sheet, resolutions on the appropriation of earnings and release from liability for members of the Board and the company's CEO; the approval of fees to members of the Board and auditors and the principal terms and conditions of employment for the CEO and other senior executives. Where applicable, the AGM also passes resolutions on changes to the articles of association and the election of auditors.

AGMs are usually held at one of the installations in Sweden to provide shareholders with an insight into the business. In conjunction with the meetings, the shareholders have the opportunity to enjoy guided tours in mines, concentrators or smelters to gain a deeper understanding of the various operations and an opportunity to meet Boliden's employees.

Nomination Committee

The nomination committee represents the shareholders. The nomination committee is tasked with preparing and submitting proposals for resolutions shareholders vote on at the AGM. The proposals concern the number and election of members of the Board, the Chairman of the Board, fees payable to the Board and its committees, the election of auditors and fees payable to them and where necessary, the process and the criteria that govern the appointment of members to the nomination committee.

The focus of the nomination committee's work is to ensure that the Board consists of members who jointly possess the knowledge and experience that meet the standards shareholders demand of the company's highest governing body. Accordingly, the Chairman of the Board presents the nomination committee with his evaluation of the work of the Board and the individual members during the past year as part of the process of drafting proposals for Board members. Also, the CEO presents the company's operations and future focus, and an opportunity is given

for the nomination committee to meet the Board's members. Supported by the audit committee, the nomination committee also drafts proposals for the election of auditors. Shareholders may submit proposals to the nomination committee in accordance with the instructions available on Boliden's website. The AGM passes resolutions on the principles governing the appointment and duties of the nomination committee. According to the nomination committee instructions, the nomination committee must comprise a minimum of five and a maximum of seven members. The AGM elects five members, of whom three must represent the biggest shareholders and one the smaller shareholders, and one of whom must be the Chairman of the Board. The nomination committee may offer places on the committee to other, larger shareholders to better reflect the shareholder structure in the event of changes in ownership. The nomination committee appoints its own chairman and works in the best interests of all shareholders. Nomination committee members receive no remuneration.

The work of the nomination committee in 2019

Jan Andersson (Swedbank Robur fonder), Lars-Erik Forsgårdh, Ola Peter Gjessing (Norges Bank Investment Management), Tommi Saukkoriipi (SEB Investment Management) and Anders Ullberg (Chairman of the Board) were elected to the nomination committee by the 2019 AGM. In November, the Chairman of the Board convened the committee members in accordance with its mandate, and in order to better reflect the shareholder structure, resolved to appoint an additional member, Anders Oscarsson (AMF). Jan Andersson was appointed Chairman of the nomination committee. The current composition of the nomination committee is also shown on Boliden's website. The nomination committee met four times prior to the 2020 AGM, and at the same time also met with one of the Board members and the President. Committee members were also in telephone contact with each other. These contacts afford the nomination committee a good opportunity to form an opinion of the way in which the Chairman of the Board and the individual members of the Board view the work of the Board, of the executive management, and of the way in which they view Boliden's operations and the challenges faced by the company in the next few years.

In accordance with the provisions of the Code, the nomination committee endeavors to ensure diversity and an even gender distribution, and has chosen to apply section 4.1 of the Code as its diversity policy. This means the nomination committee must, with regard to the company's operations, developmental phase, future orientation and overall conditions, have a composition that is fit for purpose and whose members possess multifaceted, broad competencies, experiences and backgrounds. In 2019, 43% of the Board members proposed by the nomination committee and subsequently elected by the AGM were women, resulting in a relatively even gender distribution. Also, according to the nomination committee, the Board has a good composition and is fit for purpose.

The nomination committee's proposals for submission to the 2020 AGM will be published in the upcoming notice to attend and on the Boliden website.

The Board of Directors

The Board of Directors is appointed by the owners to bear ultimate responsibility for the company's organization and the management of the company's affairs in the best interests of both Boliden and the shareholders. This must be done in a sustainable way that entails carefully balanced risk-taking, in order to ensure that the company's long-term developmental trend is a positive one.

Under the provisions of the articles of association, the Board of directors must comprise a minimum of three and a maximum of ten members, without deputies, elected by the AGM. Employees have a statutory right to appoint three members and three deputies to the Board. Since the AGM of 2019, the Board, which is elected for one year at a time, has comprised seven members elected by the AGM and three members appointed by the trade union organizations. Board meetings are attended both by the ordinary members and by the unions' three deputies. General Counsel, Group Legal Affairs is Board Secretary. Boliden's President and CEO and the Chief Financial Officer (CFO) also usually attend the Meetings as members of Group management. Other members of Group management and other executives also attend and present reports on specialist issues as required.

The Board members elected by the AGM are all independent in relation to major shareholders, the company and Group management. Thus the Board complies with the requirements of the Code with regard to independent members. The members of the Board are presented on pages 67 and 68 and on the Boliden website.

The Board sets the company's financial goals and strategy, appoints and evaluates the CEO; it ensures that efficient systems are in place for monitoring and controlling operations, that statutory and regulatory requirements are complied with, and that information is published in a correct and transparent manner. At the statutory board meeting held every year immediately after the AGM, the Board adopts rules of procedure that govern its work and responsibilities in more detail, together with the special tasks assigned to the Chairman of the Board.

The Chairman supervises the Board's work and ensures an open, constructive dialogue. The Chairman's duties also include monitoring and evaluating the expertise and work of individual Board members and their contribution to the Board. An important part of the Chairman's work is monitoring operations through an ongoing dialogue with the CEO. The Chairman acts as an interlocutor in support of the CEO and makes sure that the Board's decisions, instructions and directives are obeyed and carried out. Prior to every Board meeting, the Chairman and the CEO review the issues for discussion at the meeting. Supporting documentation for Board discussions on such issues are sent to Board members one week before each Board meeting. The allocation of duties between the Board and the CEO is set out in the Instructions to the CEO adopted by the Board at the statutory board meeting.

The work of the Board in 2019

The Board held eight meetings in 2019, including the statutory board meeting. A number of the Board meetings are held at the company's operating units to provide members with a greater understanding of operations, and thus in 2019, the Board visited the Boliden Area and Tara.

The Board receives information at Board meetings and in monthly reports regarding commercial and financial performance, and the fulfilment of the company's sustainability goals. Every Board meeting begins with a review of the business, the current safety situation and sustainability issues. In addition to these issues and others related to the operation, the Board

adopts, at the beginning of each year, a number of themes for special attention with the aim of providing a better understanding of Boliden's capabilities and challenges in a broader perspective. As mentioned, during the year the Board continued to focus on its investment program and resolved to follow through with a number of major investments in Rönnskär, Aitik, Kevitsa and Harjavalta.

With regard to the nature of the operation, appropriate and efficient permit processes and reasonable operational conditions (licence to operate) are important issues for the company and its Board, and they are addressed on a recurring basis. In line with this, health and safety work and the follow-up of accidents and the sick leave rate are standing discussion items at every Board meeting.

The Board also resolved to propose that the AGM approve a redemption program designed to disburse funds to the company's shareholders, in addition to the ordinary dividend. In order to diversify Boliden's financing sources, the AGM also resolved to issue a five-year bond in the amount of SEK 750 m under the Boliden Medium Term Note program.

The Chairman ensures that the Board and its work are evaluated annually and that the results of the evaluation are conveyed to the nomination committee. The evaluation is carried out by the Board under the supervision of the Chairman or with the help of an independent consultant. The 2019 evaluation was a self-assessment in which the members answered a number of questions in writing on a range of different subjects.

Board committees

The overall responsibility of the Board cannot be delegated, but it may set up internal committees to address issues within their respective remits. Thus in 2019, as in previous years, the Board set up an audit committee and a remuneration committee. Committee members are appointed at the Board meeting held after the AGM. Their work is governed by the committees' rules of procedure and instructions.

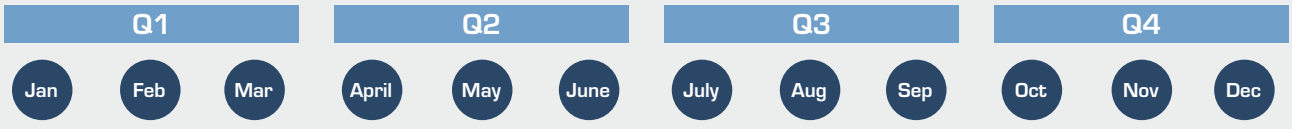
Audit Committee

The audit committee prepares a number of issues for consideration by the Board and thereby supports the Board in the fulfilment of its responsibilities within the areas of internal control, auditing and assuring the quality of financial reporting. Boliden has an internal controller department whose work includes identifying risk areas and following up work in identified areas. The committee also monitors the procurement of services from the company's auditors in addition to the audit; and where necessary it submits the nomination committee's proposals to the auditors. The audit committee meets prior to each reporting date and also as necessary.

As of the 2019 AGM, the audit committee comprises Pia Rudengren (Chairwoman), Tom Erixon and Anders Ullberg. The committee members have specialist competence, experience of and interest in financial and accounting issues; see Board assignments and previous positions, pages 67 and 68. The committee's meetings are also attended by Boliden's CFO and the Head of Internal Control. The Committee met five times in 2019 . During the year, special attention was paid to internal controls and IT security. The audit committee works according to

THE WORK OF THE BOARD IN 2019

Recurring business: Sustainability and safety issues; review of operations, investments, costing and theme items. Listed below are the principal agenda items for the year's Board meetings:



February:
Review of the year-end report, the annual report, the audit report, the dividend proposal and the share redemption proposal and agenda items for submission to the AGM. Mineral resources and mineral reserves, financing issues, merger & acquisition opportunities, investments, license to operate, public affairs, status of major disputes.

May:
(Ordinary and statutory Board meeting):

Q1 Interim Report, Strategy and alternatives for the Boliden Area, the competitive landscape, IT security, sustainability and licence to operate. Meeting between the Board and auditors without the presence of management. AGM and statutory Board meeting.

July:
Q2 Interim Report and review of the audit report.

August:
Per capsulam meeting concerning an offer for forest real estate.

September:
Strategic focus for business area Mines with a visit and special focus on Tara, dam safety issues, technological development, automation, exploration and junior mining company strategy.

October:
Q3 Interim Report, strategic orientation for business area Smelters, battery metals, long-term electricity supply, annual follow-up of New Boliden Way and corporate social responsibility.

December:
Review of strategy, budget and business plan, management and Board evaluation, acquisition opportunities, investments and refinancing issues.

8 meetings
total during 2019

the Instructions for the Audit Committee adopted annually by the Board, and it reports the results of its work to the Board.

Remuneration Committee

The remuneration committee submits proposals for resolution by the Board regarding salary and other terms of employment for the CEO, and follows up on and evaluates programs for variable remuneration for the management. The committee also approves proposals regarding salaries and other terms of employment for Group management, as proposed by the CEO. Also, the remuneration committee draws up proposals regarding remuneration principles for the CEO and Group management for subsequent submission by the Board to the AGM for resolution. The application of the guidelines and relevant remuneration structures and levels in the company is also followed up by the committee, and the results of this evaluation are published on the company website. See Note 5 for an account of the remuneration paid to Group management.

The remunerations committee works according to the Instructions for the Remunerations Committee adopted annually by the Board, and it reports the results of its work to the Board. The remunerations committee comprises Anders Ullberg (Chairman) and Michael G:son Löw. During the year, the committee held one meeting and was also in contact by telephone a number of times.

The CEO and Group management

The CEO has ultimate responsibility for Boliden's strategic orientation and for ensuring compliance with and implementation of the Board's decisions, and for ensuring that risk management, control, systems, organization and processes are all of a satisfactory standard. The CEO is supported in his work by the Group's management team which, in addition to the CEO, comprises the presidents of Boliden's two business areas Mines and Smelters, the CFO, and the Director, Corporate Responsibility (CR). Group management meets once a month to follow up operations and discuss group-wide issues, draw up proposals for strategic plans, business plans and budgets, which the CEO presents to the Board for consideration. The areas addressed by the Board have largely reflected the work of Group management during the year. Group management also holds two meetings every year on strategy planning. Group management, together with the management of the respective business areas, also meet six times a year to review business area-specific issues, including a review of budgets and operations. For large-scale projects, special steering groups are formed, which regularly meet with project managers and other stakeholders. Group management also meets with the company's employee representative Board members and deputies before every Board meeting, to discuss the agenda and other issues of current interest. See page 69 for a presentation of the Group management team.

Business management

Management by the Board takes place through the CEO and Group management to the operating units. Responsibilities and powers are delegated in the organization within clear frameworks. These frameworks are defined by Boliden's policy documents, budget and strategic plan. The policy documents are available on Boliden's internal website; the documents constitute the internal framework required for effective management. They include the Code of Conduct, the Financial Policy, Tax Policy, the Insider Trading Policy, the Whistleblower Policy, and documentation on sanctions control, delegation and decision-making, anti-corruption and conflicts of interest, competition law issues, supplier evaluation and code of conduct, communications, privacy and personnel information processing (GDPR), and a large number of policy documents relating to the environment and health and safety issues.

Sustainability governance

Sustainability governance is an important part of Boliden's operations and is conducted on the basis of the issues that are most essential for the business. These issues are handled in the same way as business management, from the Board through the CEO and Group management to the operational units. One member of Group management is dedicated to corporate responsibility (CR) issues. The day-to-day responsibility for sustainability issues is decentralized to the respective units. Group CR functions are responsible for creating structure and focus for the work, the exchange of experience, gathering business intelligence and following up the work of the units. Sustainability issues are followed up and discussed at all management group meetings and Board meetings, and in local management meetings.

The most important sustainability issues are integrated into the company's strategy, as described on page 32. Every sustainability issue has a long-term focus that must help to guide and structure sustainability efforts at every level in the company. Factors that form the basis for prioritization include the impact of operations on people and the environment, how work on these issues can support operations; expectations from internal and external stakeholders, risks and opportunities, external factors, and applicable regulations. Because priority challenges and opportunities change over time, regular reviews take place, usually once per year and in which representatives from the business units and functions are involved. Each business area must set local goals within the prioritized sustainability issues.

Sustainability work is valuation based, which means measures are not only determined on the basis of legislation and regulatory requirements, but also on needs and identified improvement measures that can improve the situation for people and the environment where our operations take place. This means that investments with e.g. major environmental and safety benefits in relation to the invested amount are carried out independently of any external requirements or charges.

Events during 2019

In addition to areas linked to the well-being of people and the environment, business ethics issues are of constant concern and something the company is actively engaged with. During the year, a new ethics and compliance function was set up with the overall responsibility of ensuring compliance with regulations concerning anti-corruption, competition, trade sanctions, information security, human rights, whistle-blowing, business partner due diligence and the company's Code of Conduct.

As of 2017, a Sustainability Report has been included in the Annual Report. Boliden also compiles a Sustainability Index that follows the GRI Global Compact and TCFD guidelines. This report is the subject of an external review by auditors. The review is also aimed at underlining the importance of sustainability work and further boosting the confidence of the market and other stakeholders regarding this work.

Auditors
The external auditor conducts independent audits of accounts to ensure that in all material respects they provide an accurate, fair and comprehensive picture of the company's position and economic performance. The auditor also reviews the Board's and the CEO's administration and reports his findings to the Board without the presence of management. The auditor is in contact with Group management in conjunction with audits or emerging issues. The auditor regularly attends Audit Committee meetings and has also met with the Board once without the management's presence in 2019. The auditor also reports to the shareholders at the AGM.

The auditing firm of Deloitte AB was elected at the 2019 AGM to serve as the company's auditors until the conclusion of the 2020 AGM. Authorized public accountant Jan Berntsson is auditor-in-charge. He is a partner and CEO of Deloitte Sweden and has auditing assignments for Electrolux and Kinnevik, among others. Remuneration to the auditors is payable against approved invoices. See Note 6 for information concerning remuneration in 2019.

Board of Directors' report on internal control
The purpose of internal control over financial reporting is to provide reasonable assurance with regard to the reliability of the external financial reporting and to ensure that the reports are produced in accordance with generally accepted accounting principles, applicable legislation and statutes, and with other requirements imposed on listed companies.

The Board has overall responsibility for ensuring that an effective internal control system exists within the Group. The CEO is responsible for ensuring that a process and organization are in place to safeguard internal control and the quality of the internal and external financial reporting.

Internal control function
Boliden has an internal control function responsible for implementing processes and frameworks that safeguard internal control and ensure the quality of the financial reporting. The internal control function reports to the CFO and presents reports on issues relating to internal control at the audit committee's meetings.

Control environment
The control environment at Boliden is characterized by relatively few but large operational units that have long operated according to well-established processes and control activities. To ensure a uniform approach and working methods within Boliden, there are binding policy documents and indicative guidelines for delegated responsibility within the organization.

The starting point is the New Boliden Way, which includes the code of conduct, decision-making and authorization instructions, and a financial manual covering financial policy, accounting and reporting instructions. In addition, there are local management systems with more detailed instructions and descriptions of important processes.

Boliden has a uniform, standardized internal control framework known as the Boliden Internal Control System (BICS).

Risk analysis
The operating units conduct ongoing risk analyses with regard to financial reporting. The risks inherent in the various accounting and reporting processes are identified, analysed and documented in BICS.

Control activities
Various types of control activities are carried out in the Group and within every different aspect of the accounting and reporting process on an ongoing basis. The control activities are carried out in order to manage known risks and to detect and rectify any errors and discrepancies in the financial reporting.

Documentation of significant control activities within the accounting and reporting process continued in BICS in 2019. For every risk identified, the controls used to manage the risk are documented.

Information and communication
Information on policies, guidelines and manuals is available on Boliden's intranet. Backup information on updates and changes to reporting and accounting principles is issued via email and at the regular finance and controller meetings. External communication is conducted in accordance with the Group communications policy. All information must be communicated openly, judiciously and clearly.

Follow-up
Work on follow-ups of, improvements to and development of systems, processes and controls within the Group is ongoing. Annual tests are conducted on documented controls within the framework of BICS, both by internal personnel and external auditors. Areas where room for improvement is identified in conjunction with audits are documented, analyzed and actioned.

Control activities	Responsible	Follow-up
Compliance with Boliden's accounting manual	Group accounting/Controller department	Group management
Control of consolidated earnings	Group accounting/Controller department	Group management
Analysis and follow-up	Business Areas/Controller department	Group management
Budget and forecasts	Business Areas/Controller department	Group management
Correct financial reporting controls	Operational units/Business areas	Consolidated accounts/Internal control/ Controller department
Tax control	Operational units	Head of Group tax

THE BOARD OF DIRECTORS

Name	Anders Ullberg Chairman	Marie Berglund Board member	Tom Erixon Board member
Education	M.Sc. Economics	M.Sc. Biology	LL.B, MBA.
Elected	2005	2003	2013
Born	1946	1958	1960
Other assignments	Chairman of the boards of Eneqvist Consulting and Studsvik. Member of the Boards of Atlas Copco, Beijer Alma, Epiroc and Valedo Partners. Chairman of the Swedish Financial Reporting Board, member of the Board of the European Financial Reporting Advisory Group	Director of Raw Materials Supply and the Environment, NCC Industry, member of the boards of Sveaskog, BalticSea 2020 and the oversight committee for the county administrative board in Västernorrland	CEO and President of Alfa Laval
Previous positions	CFO of Svenska Varv, CFO, Executive Vice President, and President and CEO of SSAB	Group Ecologist in the former MoDo Group, Environmental Manager of Botniabanan, President of BioEndev (consultant).	Managing partner in Boston Consulting Group, various executive positions in Sandvik and CEO and President of Ovako
Number of shares[1]	45,000	1,250	6,900
Meeting attendance	8 of 8	8 of 8	7 of 8
Committee work (attendance)	Audit committee 5 of 5 Rem. committee 1 of 1	–	Audit committee 5 of 5
Board fee, SEK	1,750,000	580,000	580,000
Committee fee, SEK	125,000 + 50,000	–	125,000
Total fees	1,925,000	580,000	705,000
Independent from company and its management	Yes	Yes	Yes
Independent of major owner	Yes	Yes	Yes

Name	Marie Holmberg employee representative	Kenneth Ståhl employee representative	Cathrin Öderyd employee representative
Assignment	Board member since 2008. Deputy member 2005–2008. Representative for the Swedish Association of Graduate Engineers and the Council for Negotiation and Cooperation	Board member since 2014. Representative for IF Metall. Chairman of the IF Metall Chapter, Bergsöe	Board member since 2018. Chairman of the Mine Chapter Aitik (IF Metall), member of the Boliden Workers' Council
Elected	2008	2014	2018
Born	1963	1973	1975
Number of shares[1]	50	0	5
Meeting attendance	8 of 8	7 of 8	8 of 8

[1] Own holdings and those of related legal or natural persons, on 31 December 2019.

THE BOARD OF DIRECTORS




Name	**Michael G:son Löw** Board member	**Elisabeth Nilsson** Board member	**Pia Rudengren** Board member	**Perttu Louhiluoto** Board member
Education	M.Sc. Economics	M.Sc. Engineering	M.Sc. Economics	M.Sc. Economics, LL. B.
Elected	2010	2015	2017	2019
Born	1951	1953	1965	1964
Other assignments	Member of the boards of Concordia Maritime, Preem, Stena Bulk, Naturstenskompaniet International, Deputy Chairman in the Swedish Russian Chamber of Commerce, Swedish Association for Energy Economics. Member of the Royal Swedish Academy of Engineering Sciences (IVA)	Dr.h.c. Luleå University of Technology, Chairman of the Board of the Göta Canal Company. Board member in EKN, Royal Swedish Academy of Engineering Sciences (IVA) and a member of Skandia's Delegate Commission and Hanaholmen's Corporate Management, Chairman of the KK Foundation and the Scandinavian Japan Sasakawa Foundation	Chairman of the Board of Social Initiative, member of the boards of Duni and Academedia	CEO Purmo Group
Previous positions	Various senior executive positions in Conoco Inc in Stockholm, Houston, Copenhagen, Bangkok, Prague and London. President and CEO Preem	CEO of Jernkontoret (the Swedish Steel Producers' Association) and a variety of senior executive positions in the SSAB Group. CEO of SSAB Merox, County Governor, special investigator	CFO of Investor and Vice President of W Capital Management	Various senior executive positions in Metso and McKinsey & Company
Number of shares[1]	100	1,000	1,000	0
Meeting attendance	8 of 8	8 of 8	8 of 8	7 of 7
Committee work (attendance)	Rem. committee 1 of 1	–	Audit committee 5 of 5	–
Board fee, SEK	580,000	580,000	580,000	580,000
Committee fee, SEK	50,000	–	225,000	–
Total fees	630,000	580,000	805,000	580,000
Independent from company and its management	Yes	Yes	Yes	Yes
Independent of major owner	Yes	Yes	Yes	Yes



Name	**Magnus Filipsson** employee representative	**Gard Folkvord** employee representative	**Ola Holmström** employee representative
Assignment	Deputy member since 2018. Representative for Unionen	Deputy member since 2018. Chairman of Odda Kjemiske Arbeiderforening. Member of the Industri Energi trade union Competency Committee. Member of the Odda Municipal Executive Committee (Norwegian Labour Party). Chairman of the Board of Oddaprodukt AS	Deputy member since 2017. Chairman of the Mine Chapter Kristineberg (IF Metall), FSG (trade union cooperation, mines) and Boliden Workers' Council
Elected	2018	2018	2017
Born	1974	1969	1965
Number of shares [1]	0	101	170
Meeting attendance	8 of 8	8 of 8	8 of 8

[1] Own holdings and those of related legal or natural persons, on 31 December 2019.

GROUP MANAGEMENT

Name	**Mikael Staffas** President and CEO	**Håkan Gabrielsson** CFO	**Åsa Jackson** Director – Corporate Responsibility
Education	M.Sc. Engineering, MBA	M.Sc. Economics	M.Sc. Economics
Employed	2011	2009-2011, 2016	2019
Born	1965	1967	1964
Other assignments	Chairman of the boards of Eurometaux, Employers' Association of the Swedish Mining Industry and Deputy Chairman of SveMin. Member of the boards of the International Zinc Association, International Copper Association and Industriarbetsgivarna	–	–
Previous positions	President Boliden Mines and CFO Boliden, CFO of Södra Skogsägarna, Partner at McKinsey & Company	CFO of Fagerhult, Director Group Controlling at Boliden, and a variety of positions within Sapa, Ericsson and Electrolux	President HR, Health & Safety, Ahlstrom-Munksjö, President HR and Sustainable Development and other senior positions within ABB Sweden
Number of shares [1]	18,000	2,255	0

Name	**Daniel Peltonen** President – Business Area Smelters	**Stefan Romedahl** President – Business Area Mines
Education	M.Sc. Engineering, Chemical Technology & Industrial Economics	M.Sc. Engineering
Employed	2019	1994-2003, 2013-2016, 2018
Born	1971	1967
Other assignments	–	Member of the boards of the Employers' Association of the Swedish Mining Industry, SveMin and Euromines
Previous positions	President and CEO for Iggesund Paperboard, Mill Manager and other executive positions within Holmen	Vice President of LKAB Northern Division, CEO of Zinkgruvan, Project Manager of Swedish Nuclear Fuel and Waste Management Company (SKB) and various senior positions within Boliden
Number of shares [1]	0	400

[1] Own holdings and those of related legal or natural persons, on 31 December 2019.

Financial statements

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Consolidated Income Statement

SEK m	Note	2019	2018
Revenues	3, 4	49,936	52,454
Cost of goods sold	6	–40,522	–41,761
Gross profit		**9,414**	**10,693**
Selling expenses	7	–486	–438
Administrative expenses	6, 7	–688	–648
Research and development costs	7	–740	–705
Other operating income	8	354	305
Other operating expenses		–252	–200
Results from participations in associated companies	17	–6	–4
Operating profit	3–8, 11, 13–15	**7,597**	**9,004**
Financial income	9	12	2
Financial expenses	10	–272	–242
Profit after financial items		**7,337**	**8,763**
Tax	18	–1,548	–1,562
Net profit for the year		**5,788**	**7,201**
Net profit for the year attributable to:			
Owners of the Parent Company		5,786	7,198
Non-controlling interests		2	3
Earnings per share, SEK	23	21.15	26.32
There are no potential shares, hence no dilution effect			
Average number of shares, before and after dilution		273,511,169	273,511,169

Consolidated Statement of Comprehensive Income

SEK m	Note	2019	2018
Net profit for the year		**5,788**	**7,201**
Other comprehensive income			
Items that will be reclassified to the profit/loss			
Cash flow hedging			
Change in market value of derivative instruments		47	9
Fiscal effect on derivative instruments		–10	–2
Transfers to the Income Statement		–2	4
Tax on transfers to the Income Statement		0	–1
		36	**10**
Year's translation difference on overseas operations		289	694
Result of hedging of net investments in overseas operations		–28	–121
Tax on the net profit for the year from hedging instruments		6	27
		267	**600**
Total items that will be reclassified to the profit/loss		**303**	**610**
Items that will not be reclassified to the profit/loss			
Revaluation of defined benefit pension plans	24	–130	–26
Tax attributable to items not reclassified to the profit/loss for the period		27	5
Total items that will not be reclassified to the profit/loss		**–103**	**–21**
Total other comprehensive income		**200**	**589**
Comprehensive income for the year		**5,988**	**7,790**
Comprehensive income for the year attributable to:			
Owners of the Parent Company		5,986	7,787
Non-controlling interests		2	3

Consolidated Balance Sheet

SEK m	Note	31.12.2019	31.12.2018
ASSETS			
Non-current assets			
Intangible assets	13	**3,621**	**3,566**
Property, plant and equipment	14, 15		
Buildings and land		6,230	5,468
Deferred mining costs		8,566	7,832
Machinery and other technical facilities		21,456	19,717
Equipment, tools, fixtures and fittings		552	327
Work in progress		7,186	5,533
		43,989	**38,877**
Other non-current assets			
Participations in associated companies	17	9	25
Other shares and participations	26, 29	6	18
Deferred tax assets	18	127	136
Derivative instruments	26, 27, 29	18	–
Long-term receivables		139	131
		299	**310**
Total non-current assets		**47,909**	**42,752**
Current assets			
Inventories	19	13,262	10,358
Trade and other receivables	20, 26, 29	2,119	1,864
Tax receivables		232	90
Derivative instruments	26, 27, 29	75	154
Other current receivables	21	1,453	1,235
Cash and cash equivalents	12, 26	1,373	2,272
Total current assets		**18,514**	**15,975**
TOTAL ASSETS		**66,424**	**58,727**
EQUITY AND LIABILITIES			
Equity	23		
Share capital		579	579
Other capital provided		5,940	5,940
Translation reserve		1,208	942
Hedging reserve		47	11
Defined benefit pension plans		–942	–838
Retained earnings		34,597	32,366
Equity attributable to the owners of the Parent Company		**41,429**	**39,000**
Non-controlling interests		**12**	**11**
Total equity		**41,440**	**39,011**
Long-term liabilities			
Provisions for pensions	24	1,113	967
Other provisions	25	4,930	3,898
Deferred tax liabilities	18	3,128	2,941
Liabilities to credit institutions	26, 29	3,261	3,145
Other interest-bearing liabilities	15, 26, 29	182	–
Total long-term liabilities		**12,615**	**10,950**
Current liabilities			
Liabilities to credit institutions	26, 29	2,242	216
Other interest-bearing liabilities	15, 26, 29	86	2
Trade and other payables	26, 29	6,391	5,106
Other provisions	25	170	134
Current tax liabilities		109	683
Derivative instruments	26, 27, 29	129	34
Other current liabilities	30	3,242	2,590
Total current liabilities		**12,369**	**8,767**
TOTAL EQUITY AND LIABILITIES		**66,424**	**58,727**

Consolidated Statement of Changes in Equity

SEK m	Note	Equity attributable to the owners of the Parent Company								
		Share capital	Other capital provided	Translation reserve	Hedging reserve	Defined benefit pension plans	Retained earnings	Total, Boliden's shareholders	Non-controlling interests	Total equity
Opening equity, 01.01.2018		**579**	**5,940**	**342**	**1**	**–817**	**28,999**	**35,044**	**9**	**35,053**
Net profit for the year							7,198	7,198	3	7,201
Other comprehensive income		–	–	600	10	–21	–	589	0	589
Comprehensive income for the year		**–**	**–**	**600**	**10**	**–21**	**7,198**	**7,787**	**3**	**7,790**
Dividend to Boliden AB's shareholders		–	–	–	–	–	–2,256	–2,256	–	–2,256
Dividend to non-controlling interests		–	–	–	–	–	–	–	0	0
Redemption		–289	–	–	–	–	–1,284	–1,573	–	–1,573
Bonus issue		289	–	–	–	–	–289	–	–	–
Closing equity, 31.12.2018		**579**	**5,940**	**942**	**11**	**–838**	**32,366**	**39,000**	**11**	**39,011**
Opening equity, 01.01.2019		**579**	**5,940**	**942**	**11**	**–838**	**32,366**	**39,000**	**11**	**39,011**
Net profit for the year							5,786	5,786	2	5,788
Other comprehensive income		–	–	267	36	–103	–	200	0	200
Comprehensive income for the year		**–**	**–**	**267**	**36**	**–103**	**5,786**	**5,985**	**2**	**5,987**
Dividend to Boliden AB's shareholders		–	–	–	–	–	–2,393	–2,393	–	–2,393
Dividend to non-controlling interests		–	–	–	–	–	–	–	–2	–2
Redemption		–289	–	–	–	–	–873	–1,162	–	–1,162
Bonus issue		289	–	–	–	–	–289	–	–	–
Closing equity, 31.12.2019	**23**	**579**	**5,940**	**1,208**	**47**	**–942**	**34,597**	**41,429**	**12**	**41,440**

Other capital provided
Refers to equity contributed by the owners. When shares are issued at a premium, an amount corresponding to the amount received in excess of the nominal value of the shares is reported as Other capital provided.

Translation reserve
The Balance Sheet for each overseas companies is converted at the exchange rates applicable at the end of the reporting period. The Income Statement is converted at the average rates for the reporting period. Any exchange rate differences arising are reported under Other comprehensive income. Boliden currency hedges net investments in overseas subsidiaries to some extent by adopting the opposite position in the form of loans in the relevant foreign currency. The exchange rate difference on loans raised is, after the fiscal effect, reported under Other comprehensive income.

Hedging reserve
Boliden applies hedge accounting for financial derivatives acquired with a view to hedging part of the forecast currency and interest flows. Changes in the market value of hedging instruments are reported under Other comprehensive income until such time as the underlying flows are reported in the Income Statement.

Defined benefit pension plans
Revaluations of pension undertakings have been reported under Other comprehensive income.

Retained earnings
Refers to profits earned.

Net debt, SEK m	31.12.2019	31.12.2018
Liabilities to credit institutions	5,503	3,361
Other interest-bearing liabilities	268	2
Pension liabilities	1,113	967
Interest-bearing assets	–19	–24
Cash and cash equivalents	–1,373	–2,272
	5,493	**2,034**

Capital employed, SEK m	31.12.2019	31.12.2018
Intangible assets	3,621	3,566
Property, plant and equipment	43,989	38,877
Participations in associated companies	9	25
Other shares and participations	6	18
Inventories	13,262	10,358
Trade and other receivables	2,119	1,864
Other receivables	1,666	1,495
Provisions, other than for pensions and tax	–5,100	–4,032
Trade and other payables	–6,391	–5,106
Other non-interest bearing liabilities	–3,372	–2,624
	49,809	**44,441**

Consolidated Statement of Cash Flow

SEK m	Note	2019	2018
Operating activities			
Profit after financial items		7,337	8,763
Adjustment for items not included in the cash flow:			
Depreciation, amortization and impairment of assets	13, 14	5,092	4,930
Provisions		15	–3
Revaluation of process inventory		–561	70
Translation differences and other		182	57
Tax paid		–2,060	–2,286
Cash flow from operating activities before changes in working capital	**12**	**10,005**	**11,531**
Cash flow from changes in working capital			
Increase (–)/Decrease (+) in inventories		–2,313	–865
Increase (–)/Decrease (+) in operating receivables		–373	544
Increase (+)/Decrease (–) in operating liabilities		2,097	562
Other		27	–3
Cash flow from changes in working capital		**–562**	**237**
Cash flow from operating activities		**9,442**	**11,768**
Investment activities			
Acquisition of intangible assets	13	–37	–33
Acquisition of property, plant and equipment	14	–8,790	–6,105
Sale of property, plant and equipment		0	55
Disposal/acquisition of financial assets		20	6
Cash flow from investment activities		**–8,807**	**–6,076**
Free cash flow		**635**	**5,692**
Financing activities			
Dividend		–3,556	–3,829
Loans raised		3,434	2,270
Amortization of loans		–1,417	–4,372
Cash flow from financing activities	**12**	**–1,538**	**–5,931**
Cash flow for the year		**–903**	**–239**
Opening cash and cash equivalents		**2,272**	**2,510**
Exchange rate difference on cash and cash equivalents		**3**	**1**
Closing cash and cash equivalents	**12**	**1,373**	**2,272**

Income Statement, the Parent Company

SEK m	Note	2019	2018
Dividends from subsidiaries	16	7,036	6,000
Results from participations in associated companies	17	–	–6
Profit after financial items		**7,036**	**5,994**
Tax		–	–
Net profit for the year		**7,036**	**5,994**

The operations of Boliden AB are limited in scale and are conducted, fiscally speaking, on commission with Boliden Mineral AB, which means that the profit is reported as part of Boliden Mineral AB.

Boliden AB has no amounts to report under Other comprehensive income.

Balance Sheet, the Parent Company

SEK m	Note	31.12.2019	31.12.2018
ASSETS			
Non-current assets			
Financial assets			
Participations in subsidiaries	16	3,911	3,911
Long-term receivables from subsidiaries		14,763	11,068
Total non-current assets		**18,674**	**14,980**
Current receivables			
Current receivables from subsidiaries		2,120	–
Total current assets		**2,120**	**–**
TOTAL ASSETS		**20,794**	**14,980**
EQUITY AND LIABILITIES			
Equity	23		
Restricted equity			
Share capital		579	579
Statutory reserve		5,252	5,252
		5,831	**5,831**
Non-restricted equity			
Retained earnings		5,094	2,655
Net profit for the year		7,036	5,994
		12,130	**8,649**
Total equity		**17,960**	**14,480**
Liabilities			
Long-term liabilities to credit institutions	26, 29	750	500
Current liabilities to credit institutions	26, 29	2,084	–
Total liabilities		**2,834**	**500**
TOTAL EQUITY AND LIABILITIES		**20,794**	**14,980**

Statement of changes in equity, the Parent Company

SEK m	Share capital	Statutory reserve	Non-restricted equity	Total equity
Opening equity, 01.01.2018	**579**	**5,252**	**6,484**	**12,314**
Dividend			–2,256	–2,256
Redemption	–289		–1,284	–1,573
Bonus issue	289		–289	–
Net profit for the year			5,994	5,994
Closing equity, 31.12.2018	**579**	**5,252**	**8,649**	**14,480**
Opening equity, 1.01.2019	**579**	**5,252**	**8,649**	**14,480**
Dividend			–2,393	–2,393
Redemption	–289		–873	–1,162
Bonus issue	289		–289	–
Net profit for the year			7,036	7,036
Closing equity, 31.12.2019	**579**	**5,252**	**12,130**	**17,960**

The statutory reserve includes amounts which, prior to 1 January 2006, were transferred to the share premium reserve. The retained earnings comprise, together with the net profit for the year, the total non-restricted equity. The non-restricted equity in the Parent Company is available for distribution to the shareholders.

Statement of Cash Flow, the Parent Company

SEK m	Note	2019	2018
Operating activities			
Profit after financial items		7,036	5,994
Adjustment for items not included in the cash flow:			
Capital profit/loss		–	6
Cash flow from operating activities		**7,036**	**6,000**
Financing activities			
Loans raised		2,334	595
Amortization of loans		–	–1,115
Dividend		–3,556	–3,829
Amortization, loans from subsidiaries		–5,814	–1,651
Cash flow from financing activities	**12**	**–7,036**	**–6,000**
Cash flow for the year		**–**	**–**
Opening cash and cash equivalents		**–**	**–**
Closing cash and cash equivalents		**–**	**–**

Notes

All amounts are in SEK million unless otherwise stated. All notes refer to the Group unless otherwise stated.

Note 01 Significant accounting and valuation principles

General accounting principles

Boliden AB (publ.), Swedish corporate ID no. 556051-4142, is a limited liability company registered in Sweden. The Company's registered office is in Stockholm at the address: Klarabergsviadukten 90, SE-101 20 Stockholm. The Boliden share is listed on NASDAQ Stockholm's Large Cap list.

The Company is the Parent Company of the Boliden Group, whose principal operations involve the mining and production of metals and operations compatible therewith.

The Consolidated Statements have been compiled in accordance with the EU-approved International Financial Reporting Standards (IFRS) and interpretations of the IFRS Interpretations Committee (IFRS IC). In addition, the Group applies the Swedish Financial Reporting Board's recommendation RFR 1 Supplementary accounting regulations for corporate conglomerates specifying the supplements to IFRS required pursuant to the stipulations of the Swedish Annual Accounts Act.

The Parent Company's functional currency is the Swedish krona (SEK) and this is also the reporting currency for both the Group and the Parent Company.

Items have been valued at their historical cost in the consolidated accounts, with the exception of certain financial assets and liabilities (derivative instruments), which have been valued at their fair value, and inventories in those cases where they are hedged at fair value.

The Parent Company's accounting principles follow those of the Group with the exception of the mandatory regulations stipulated in the Swedish Financial Reporting Board's recommendation, RFR 2 Accounting for legal entities. The Parent Company's accounting principles are presented under the heading "The Parent Company's accounting principles".

The most important accounting principles are presented in the note to which they are attributable. These principles have been applied consistently for all years presented, unless otherwise specified.

The Annual Report was approved for publication by the Board on 13 February 2020. The Balance Sheets and Income Statements are subject to approval by the Annual General Meeting on 28 April 2020.

New or amended standards and interpretations from IASB and statements from IFRS IC that came into force in the 2019 calendar year

A new IFRS standard, IFRS 16 Leases, has applied from 1 January 2019.

The standard provides a comprehensive model for the identification and reporting of lease agreements for both lessors and lessees.

Under IFRS 16, a lease is an agreement that transfers the right to control the use of an identified asset for a period of time in return for compensation. Control exists if the customer has the right to obtain substantially all of the economic benefits of the use from the identified asset and has the right to decide on the way in which the identifiable asset is used. The term control refers to both the physical asset and the rights of use generated by this asset.

Boliden has elected to apply the simplified transition method whereby the comparison year is not recalculated and the size of the right-of-use asset is valued such that it corresponds to the size of the lease liability on the transfer date. Calculations of the liability for a leased asset are based on the current value of the remaining lease charges, discounted by the marginal borrowing rate. The marginal borrowing rate has been determined centrally, based on the Group's financing requirements and terms and been set at 1.6%. The Boliden Group applied mitigation rules available in conjunction with the transition to IFRS 16. Under the mitigation rules, lease agreements with a remaining term of twelve months or less and lease agreements for which the underlying asset is of lesser value were not included when determining the liability or right-of-use asset in the Balance Sheet. There were a number of agreements that have previously been regarded as service contracts but which, under IFRS 16, have been reclassified as lease agreements. Certain transport agreements are classified as lease agreements, but since they have variable pricing, they are not included in the right-of-use asset or lease liability.

The impact on the Income Statement derives from the fact that costs previously reported in the operating profit will now be divided up into depreciation, which will continue to be reported in the operating profit, and interest, which will be reported under net financial items. The date when the cost is reported has also changed from that used in previous financial reports. The depreciation is effected linearly, while that part that relates to interest will initially be higher and will decrease over time.

The effect on the Balance Sheet, as of 1 January 2019, was SEK 226 m, which sum breaks down into SEK 66 m for buildings and land and SEK 160 m for machinery and other technical installations, and with a corresponding lease liability. The effect on Boliden's operating profit and key ratios is marginal.

A comparison between information on future lease charges for operational leases under IAS 17 (as per 31 December 2018) and the calculated lease liability under IFRS 16 (as of 1 January 2019) is provided below.

SEK m	
Commitments for operational leases as of 31 December 2018	59
Financial lease liabilities as of 31 December 2018	1
Lease agreements with a short term/lesser value	–40
Effect of reclassification of lease agreements	207
Discount effect	–1
Reported lease liability, 1 January 2019	**226**

New standards and interpretations that come into force in the 2020 calendar year or thereafter

New and amended standards and interpretations that come into force for the financial year beginning on 1 January 2020 are not expected to have any significant impact on the Group's financial statements.

Consolidated statements

The Consolidated Statements cover the Parent Company and all companies over which the Parent Company through ownership, directly or indirectly, exercises a controlling influence. The term "controlling influence" refers to companies in which Boliden exerts influence, is exposed to, or is entitled to a variable return from its involvement and in which it can use its influence over the company to influence its return. This is generally achieved by ensuring that its ownership share, and the share of votes, exceeds 50 per cent. The existence and effect of potential voting rights that can currently be utilized or converted are taken into account when assessing whether the Group is capable of exercising a controlling influence over another company. Subsidiaries are included in the Consolidated Statements as of the point in time at which a controlling influence has been attained, while companies that have been sold are included in the Consolidated Statements up to the time when the sale occurred, i.e. up to the point in time when controlling influence cease to apply.

The Consolidated Statements have been compiled in accordance with the acquisition accounting method, which means that the historical cost of a company comprises the fair value of the payment made (including the fair value of any assets, liabilities and equity instruments issued). The identifiable assets, liabilities and contingent liabilities acquired are reported at their fair value at the time of acquisition. A determination of whether a holding without a controlling influence shall be reported at fair value or at the holding's proportional share of the acquired company's net assets is conducted in conjunction with every acquisition. When required, the subsidiaries' accounts are adjusted to ensure that they follow the same principles applied by other Group companies. All internal transactions between Group companies and intra-Group balances are eliminated when the Consolidated Statements are compiled.

Conversion of foreign subsidiaries and other overseas operations

The currency in the primary economic environments in which the subsidiary companies operate is the functional currency. When consolidating to the reporting currency, the Balance Sheets for over-

seas subsidiary companies are converted at the exchange rates applicable at the reporting period end, while the Income Statements are converted at the average exchange rates for the reporting period. Any exchange rate differences arising and accumulated translation differences in respect of the conversion of subsidiaries are reported as Other comprehensive income.

Boliden hedges its net investments in foreign subsidiaries to some extent by taking an opposite position (in the form of loans) in the relevant foreign currency. Exchange rate differences on hedging measures are reported as Other comprehensive income.

In conjunction with the sale of overseas operations whose functional currency is different from the Group's reporting currency, the accumulated translation differences attributable to the operations are realized in the Consolidated Income Statement, after deductions for any currency hedging activities.

Assets and liabilities in foreign currencies
Receivables, liabilities and derivatives in foreign currencies are converted to Swedish kronor at the exchange rate by applying the closing day rate. Exchange rate differences on operating receivables and operating liabilities are included in the operating profit, while exchange rate differences on financial assets and liabilities are reported under financial items. Exchange rate effects on financial instruments used in cash flow hedging and the hedging of net investments in overseas operations, are reported under Other comprehensive income with the exception of any exchange rate differences on currency swaps in foreign currencies reported under net financial items.

The Parent Company's accounting principles
The Parent Company's annual accounts are compiled in accordance with the Swedish Annual Accounts Act, the Swedish Financial Reporting Board's recommendation, RFR 2 Accounting for legal entities, and the statements issued by the Swedish Financial Reporting Board. Under RFR 2, the Parent Company shall, in the accounts for the legal entity, apply all EU-approved International Financial Reporting Standards (IFRS) and statements to the extent that this is possible within the framework of the Swedish Annual Accounts Act and while taking into account the connection between accounting and taxation. The recommendation specifies the exceptions and additions to be made in relation to IFRS. The differences between the Group's and the Parent Company's accounting principles are described below.

Reporting of Group contributions and shareholders' contributions
Group contributions received or made are reported as appropriations. Shareholders' contributions are booked directly against non-restricted equity by the recipient and as an increase in the Participations in Group companies item by the contributor.

Anticipated dividends
Anticipated dividends can be reported in those cases where the Parent Company has the sole right to determine the size of the dividend and has ensured that the dividend does not exceed the subsidiary company's dividend payment capacity.

Financial instruments
Financial instruments are not valued in the Parent Company in accordance with IFRS 9 Financial instruments. The valuation is conducted on the basis of the historical cost.

Subsidiaries
Participations in subsidiaries are reported in the Parent Company in accordance with the historical cost method. Transaction expenses in conjunction with the acquisition of subsidiaries are reported as costs in the consolidated accounts, while in the Parent Company, they are reported as part of the historical cost.

Determination of the value of subsidiaries is effected when there are indications of a decline in value.

Note 02 Estimates and assessments

In order to compile the financial statements in accordance with IFRS accounting principles, assessments and assumptions must be made that impact the reported asset and liability amounts and the income and expense amounts, as well as other information provided in the financial statements. The estimates and assessments of the Board of Directors and the Company's management are based on historical experience and future trend forecasts. The actual outcome may differ from these assessments.

Valuation of inventories
It is not easy, in the smelters' process inventories and stocks of finished metals, to differentiate between externally purchased material and mined concentrate from the Group's own operations. Calculating the internal profit of inventories and the reported value of process inventory consequently entails estimations of the share of the process inventory and finished metal stocks that comes from the in-house mining operations, based on the quantities of mined concentrate bought in and produced in-house.

Pension undertakings
Pension provisions are dependent on the assumptions made in conjunction with the calculations of the amounts. The assumptions refer to discount interest rates, rate of salary increases, future increases in pensions, the number of remaining working years for employees, life expectancy, inflation and other factors, and are reviewed annually. The assumptions are made for every country in which Boliden has defined benefit pension plans. The most significant assumptions, in Boliden's opinion, are with regard to the discount rate, the rate of salary increases, and life expectancy, and Boliden has elected to present sensitivity analyses for these factors. Boliden's assumptions and sensitivity analyses are presented in Note 24, Provisions for pensions and other undertakings.

Legal disputes
Boliden regularly analyses and evaluates outstanding legal disputes using internal company legal counsels and, when necessary, with the help of external advisors, in order to assess the need for provisions to be made. See Note 31, Pledged assets and contingent liabilities.

Reclamation costs
Provisions for reclamations are made on the basis of an assessment of future costs based on current conditions. Provisions are reviewed regularly by internal and external specialists and updates made when necessary when the estimated useful lives, costs, technical preconditions, regulations or other conditions of mine and smelter assets change. See Note 14, Property, plant and equipment and Note 25, Other provisions.

Boliden also has a responsibility for the reclamation of a number of decommissioned mines and continually reviews the requirement to make provisions in respect of these objects. Inspection of and risk assessments in relation to reclamation measures are conducted on a systematic basis.

In the event of supplementary reclamation work on a decommissioned mine being deemed necessary in order to comply with the requirements of external regulations, a provision is reported for the anticipated future costs. The provision is reviewed as investigations and action plans provide underlying data for revised costings.

To determine the size of the reclamation liability, a real discount rate of 2% (2) has been used. A reduction in the discount rate of 0.5 percentage points would result in an increase in the reclamation liability of approximately SEK 400 million and a corresponding increase in capitalized reclamation costs. Earnings in the coming year and thereafter would be burdened by approximately SEK 20 million in higher depreciation, while net financial items would be positively affected by approximately SEK 18 million.

Valuation of non-current assets
Impairment tests for property, plant and equipment and intangible assets are based on the Company's internal business plan and on assumptions with regard to future trends in e.g. metal prices, treatment and refining charges, and exchange rates. Changes in market prices of metals, treatment and refining charges and currencies have a substantial effect on the Group's future cash flows and hence on the estimated impairment. Assumptions with regard to price trends for metals, treatment and refining charges and currencies are made by the Company management with the help of external experts. The assumptions are reviewed on an annual basis and adjusted when necessary. For further information, see Note 14, Property, plant and equipment.

The depreciation periods for deferred mining costs, installations and equipment in mines depend on future ore extraction and the lifespan of the mine. The assessment of these aspects is, in turn, heavily dependent on mineral reserves and, consequently, on factors such as anticipated future metal prices. The valuation is based on assumptions that the necessary environmental permits will be obtained. Changes to conditions may entail changes to the rate of depreciation applied in future. Business Area Mines draws up annual production plans for the mines' lifespans.

Mineral Reserves
Boliden's Mineral Reserves are divided into two categories: probable and proven. The assessment is based on geological measurements and assumptions that are explained in greater detail on pages 106–108. Boliden's assessment of the size of the Mineral Reserves affects annual depreciation costs and impairment tests.

Note 03 Information per segment and geographical market

ACCOUNTING PRINCIPLES
Boliden is organized into two segments: Business Area Mines and Business Area Smelters. The Business Areas correspond to Boliden's operating segments in that 1) the Business Area Managers are directly responsible to the CEO, 2) the CEO controls the Group's component parts via two "Business Area Boards", one for each Business Area, through which the financial results are evaluated in relation to financial goals, 3) financial goals as well as investment plans and overhead budgets for the respective Business Areas are set in the business plan and budget process, 4) decisions on goals and resource allocation for units within the respective Business Areas are made within the respective Business Areas' management groups, and 5) heads of operating units report not to the CEO but to the Business Area Manager.

Business Area Mines comprises the operations of the Swedish mines Aitik, the Boliden Area and Garpenberg, the Tara mine in Ireland, and the Kylylahti and Kevitsa mines in Finland. Business Area Mines is also responsible for sales of mined concentrates.

Business Area Smelters includes the Kokkola and Odda zinc smelters in Finland and Norway respectively, the Rönnskär and Harjavalta copper smelters in Sweden and Finland respectively, and the Bergsöe lead smelter in Sweden. The Business Area is responsible for all sales of the smelters' products and handles all raw material flows between the Group's mines, smelters and customers. This includes responsibility for purchases of metal concentrates and recycling materials from external suppliers. The copper smelters also recycle metal and electronic scrap and smelt nickel. The Bergsöe lead smelter recycles lead metal, mainly from scrap car batteries.

Transactions between the Business Areas, primarily involving metal concentrates, are settled on an arms' length basis.

Set out below are details of revenues per segment and geographical market, showing the location of external customers, and providing information on major customers. Assets and investments per geographical market are also reported there.

Segment – Business Areas

31.12.2019	Mines	Smelters	Other[2]	Accounting principles[3]	Eliminations	The Group
External revenues	1,318	48,617	1	–	–	49,936
Internal revenues	15,743	–61	147	–	–15,828	–
Revenues	**17,060**	**48,556**	**148**	**–**	**–15,828**	**49,936**
Results from participations in associated companies	–6	0	–	–	–	–6
Operating profit	**4,484**	**3,277**	**–164**	**–**	**–**	**7,597**
Net financial items						–260
Profit after financial items						**7,337**
Tax						–1,548
Net profit for the year						**5,788**
Intangible assets	370	3,243	8			3,621
Property, plant and equipment	32,348	11,544	96			43,989
Equity shares and other financial assets	–20	11	23			15
Inventories	1,357	12,365	–459			13,262
Other receivables	2,726	2,590	247		–1,778	3,785
Assets in capital employed	**36,781**	**29,753**	**–84**		**–1,778**	**64,672**
Provisions, other than for pensions and tax	4,372	728	0			5,100
Other liabilities	3,690	7,850	1		–1,778	9,763
Liabilities in capital employed	**8,062**	**8,578**	**1**		**–1,778**	**14,863**
Total capital employed	**28,719**	**21,175**	**–85**			**49,809**
Depreciation	3,819	1,258	15			5,092
Investments[1]	6,535	2,410	19			8,964

31.12.2018	Mines	Smelters	Other[2]	Accounting principles[3]	Eliminations	The Group
External revenues	1,788	50,666	0	–	–	52,454
Internal revenues	16,615	–32	117	–	–16,701	–
Revenues	**18,404**	**50,634**	**117**	–	**–16,701**	**52,454**
Results from participations in associated companies	0	1	–6	–	–	–4
Operating profit	**6,451**	**2,364**	**189**	–	–	**9,004**
Net financial items						–240
Profit after financial items						**8,763**
Tax						–1,562
Net profit for the year						**7,201**
Intangible assets	363	3,195	8			3,566
Property, plant and equipment	28,555	10,246	76			38,877
Equity shares and other financial assets	9	11	23			43
Inventories	1,327	9,474	–442			10,358
Other receivables	2,344	2,276	239		–1,499	3,359
Assets in capital employed	**32,598**	**25,202**	**–96**		**–1,499**	**56,204**
Provisions, other than for pensions and tax	3,491	541	0			4,032
Other liabilities	2,778	6,424	29		–1,499	7,731
Liabilities in capital employed	**6,269**	**6,965**	**29**		**–1,499**	**11,763**
Total capital employed	**26,328**	**18,237**	**–125**			**44,441**
Depreciation	3,717	1,212	1			4,930
Investments[1]	4,482	1,656	2			6,140

[1] Excluding capitalized reclamation costs but including right-of-use assets 2019.

[2] "Other" includes Group staff functions and Group-wide functions not allocated to Mines or Smelters. This item also includes elimination of internal profit.

[3] Comprises unrealized market values attributable to cash flow hedging, as well as minor adjustments for other accounting principles only followed up at Group level. The market values of the cash flow hedges are, when realized, reported in the profit for the respective segment.

Boliden has three customers within Segment Smelters who account for 15% (14), 13% (13) and 8% (8), respectively, of Boliden's external revenue. Other customers each represent less than 4% (5) of Boliden's total external revenue. Boliden's metals are sold primarily to industrial customers, but are also sold to base metal dealers and international metal stocks, such as the LME.

Geographical areas
Sales figures are based on the country in which the customer is located. Assets and investments are reported in the location of the asset.

Revenues	2019	2018
Sweden	7,287	8,146
Nordic region, other	5,139	5,454
Germany	12,006	15,592
UK	11,304	10,261
Europe, other	12,658	12,066
North America	78	51
Other markets	1,464	885
	49,936	**52,454**

Assets in capital employed	31.12.2019	31.12.2018
Sweden	43,537	38,365
Finland	16,323	13,579
Norway	1,764	1,642
Ireland	3,028	2,595
Other	20	22
	64,672	**56,204**

Investments non-current assets [1]	31.12.2019	31.12.2018
Sweden	4,394	3,140
Finland	3,829	2,255
Norway	232	152
Ireland	508	592
Other	0	0
	8,964	**6,140**

[1] Excluding capitalized reclamation costs but including right-of-use assets 2019.

Note 04 Revenues

ACCOUNTING PRINCIPLES
Sales of metal concentrates, metals and by-products are reported upon delivery to the customer in accordance with the terms and conditions of sale, i.e the revenue is recognized in conjunction with control passing to the purchaser.

Provisional invoices are raised for the Group's metal concentrates at the time of delivery. Final invoices are raised when all component parameters (concentrate quantity, metal content, impurity content and the metal price for the agreed pricing period – normally the average price on the LME in the month after delivery) have been established. Revenues from the provisional invoicing are reported at the metal prices and exchange rates applicable on the closing day and adjusted continuously until final invoicing occurs.

The Group's metals are invoiced to the customers at the time of delivery. The Group eliminates the price risk in conjunction with the sale and purchase of metals by hedging the imbalance between quantities purchased and sold on a daily basis. The smelters' income comprises treatment and refining charges, free metals, compensation for impurities in the raw materials and the value of by-products.

Income from activities outside the sphere of the regular operations is reported as Other operating income.

Boliden's revenues derive primarily from the sale of metals. The following table shows external revenues broken down by product category. Information on internal sales revenues between the segments and sales revenues between the geographical areas is shown in Note 3, Information per segment and geographical market.

2019	Mines	Smelters	Other	The Group
Finished metals	–	41,712	–	41,712
Metal concentrates	1,315	0	–	1,315
Intermediate products	–	5,708	–	5,708
By-products	–	1,101	–	1,101
Other sales	3	96	1	99
Total external sales revenues	**1,318**	**48,617**	**1**	**49,936**

2018	Mines	Smelters	Other	The Group
Finished metals	–	44,301	–	44,301
Metal concentrates	1,788	0	–	1,788
Intermediate products	–	5,053	–	5,053
By-products	0	1,167	0	1,167
Other sales	0	145	0	145
Total external sales revenues	**1,788**	**50,666**	**0**	**52,454**

Note 05 Employees and personnel costs

The Parent Company, Boliden AB, is in a tax agreement with Boliden Mineral AB. Boliden AB has one employee who is remunerated by Boliden Mineral AB.

Average number of employees[1]	2019	of whom women	of whom men	2018	of whom women	of whom men
Subsidiaries						
Sweden	3,368	775	2,593	3,250	708	2,542
Finland	1,683	275	1,408	1,642	259	1,383
Norway	319	61	258	299	49	250
Ireland	609	36	573	610	37	573
Other	18	7	11	18	7	11
Total in subsidiaries/The Group	**5,997**	**1,154**	**4,843**	**5,819**	**1,060**	**4,759**

[1] Refers to full-time employees.

Percentage of women at Board and Group management level	2019	2018
Board of Directors	50%	50%
Group management	20%	20%

	2019		2018	
Salaries, other remuneration and social security expenses	**Salaries and remuneration**	**Social security expenses**	**Salaries and remuneration**	**Social security expenses**
Subsidiaries	3,829	1,277	3,579	1,240
of which pension expenses		*(376)*		*(353)*
The Group, total	**3,829**	**1,277**	**3,579**	**1,240**

	2019		2018	
Salaries and other remuneration broken down by country and between Board Members etc. and other employees	**Board of Directors, President & other senior executives**	**Other employees**	**Board of Directors, President & other senior executives**	**Other employees**
Subsidiaries in Sweden	**31**	**1,923**	**27**	**1,832**
Subsidiaries abroad				
Finland	10	1,005	10	909
Norway	2	212	2	201
Ireland	5	626	6	575
Other	2	14	1	15
The Group, total	**49**	**3,780**	**47**	**3,532**

Profit-sharing system
A profit-sharing system was introduced for all employees of the Boliden Group in 2007. A profit share is payable when the return on capital employed exceeds 8%, and the maximum profit share (SEK 30,000/full-time employee) is payable when the return on capital employed reaches 18%. However, the annual maximum allocation may never exceed one-third of the dividend paid to shareholders. The funds cannot be disbursed to employees until after three years. An allocation of SEK 23,400 (30,000) per full-time employee is proposed for 2019 as the return on capital employed was 15.8% (20.3). This is, however, conditional upon the dividend resolution by the Annual General Meeting. The allocation for each year is invested in liquid interest-bearing assets and shares in Boliden.

Remuneration paid to the Board Members and senior executives
Principles
Fees as approved by the Annual General Meeting are payable to the Chairman of the Board and to Members of the Board. The President and Employee representatives receive no Directors' fees.

Remuneration paid to the President and other senior executives comprises the basic salary, variable remuneration, other benefits and pensions. The term senior executives refers to those persons who have made up the Group management during the year. The Group management comprised five persons, including the President, at the end of the year. All members of the Group management are employed in Sweden.

The breakdown between basic salary and variable remuneration shall be in proportion to the executive's responsibilities and authority. The variable remuneration is maximized to 60% of the basic salary for the President, while for other senior executives, it is maximized to 40–50% of the basic salary. Of this, ten percentage points is conditional on the purchase of Boliden shares for the gross sum before tax.

Pension benefits and other benefits payable to the President and other senior executives are taken into account when determining fixed and variable remuneration.

Remuneration and other benefits paid during the year
Specification of remuneration paid to the Board Members and senior executives.

	Directors' fees/ Basic salary		Variable remuneration		Other benefits		Pension cost	
SEK k	2019	2018	2019	2018	2019	2018	2019	2018
Board of Directors								
Anders Ullberg, Chairman	1,925	1,790						
Marie Berglund	580	550						
Tom Erixon	705	640						
Michael G:son Löw	630	600						
Perttu Louhiluoto	580	–						
Elisabeth Nilsson	580	550						
Pia Rudengren	805	740						
Pekka Vauramo	–	550						
Group management								
Lennart Evrell, President [1]	–	4,050	–	2,353[4]	–	113	–	998
Mikael Staffas, President [2]	7,844	4,375	2,941[5]	2,551[4]	69	27	2,793	1,491
Other members of the Group management [3]	14,132[6]	9,887	3,490[5]	3,715[4]	267	283	3,064	3,365

[1] President until 31 May 2018 (incl.). Employed until 30 June 2018 (incl.).

[2] President from 1 June 2018 (incl.). Salaries and remuneration prior to this date are included under "Other members of the Group management".

[3] A total of 4 people in 2019 and 2018.

[4] The amounts are attributable to 2018 but were disbursed in 2019.

[5] The amounts are attributable to 2019 but will be disbursed in 2020.

[6] Includes a one-off cost due to changes in the Group management.

The Directors' fees shown above also include remuneration for work on the Remuneration and Audit Committees.

Variable remuneration
The variable remuneration paid to the President in 2019 was based on the Group's return on equity and the accident trend within the Group.

For other members of the Group management the variable remuneration for 2019 was based on the Group's financial goals and on their personal spheres of responsibility, including financial and individual targets, and the accident trend. Other benefits refer primarily to company cars.

Pensions
The President has a defined contribution pension plan to which the company allocates 35% of the fixed monthly salary on a rolling basis. The President decides for himself the level of survivor annuity, indemnity for medical treatment or disability, etc., in his insurance solution. The President's retirement age is 65.

All other members of the Group management have defined contribution pension plans to which the company allocates 30% of the fixed monthly salary. The retirement age is 65.

Severance pay
The President and the company shall give six and twelve months' notice respectively of the termination of the President's position. If notice is given by the company, severance pay corresponding to twelve months' salary is payable, over and above the notice period pay. Other income shall be offset against the severance pay. No severance pay is payable in the event of notice being given by the President.

Other members of the Group management have a notice period of six months if they give notice themselves. If notice of termination is given by the company, the period of notice is six to twelve months. In addition, severance pay corresponding to six to twelve months' salary shall be payable. A summation of notice period pay and severance pay shall not exceed eighteen months. Other income shall be offset against the severance pay. No severance pay is payable in the event of notice being given by the member of the Group management.

Preparation and decision-making process
See the 2019 Corporate Governance Statement for information.

Note 06 Auditors' fees and reimbursement of expenses

	2019	2018
Deloitte AB		
Audit engagements	7	6
Auditing assignments over and above audit engagements	0	0
Tax consultancy	0	0
Other services	0	0
	7	**6**

Note 07 Key expense items

	2019	2018
Raw material costs, incl. inventory changes	21,291	23,497
Personnel costs	5,312	5,004
Energy costs	2,982	2,850
Other external costs	7,760	7,271
Depreciation	5,092	4,930
	42,436	**43,552**

The specification of key expense items relates to the following Income Statement items: "Cost of goods sold", "Selling expenses", "Administrative expenses" and "Research and development costs".

Depreciation and amortization are reported under the following Income Statement items:	**2019**	**2018**
Cost of goods sold	5,048	4,904
Selling expenses	8	0
Administrative expenses	26	19
Research and development costs	10	7
	5,092	**4,930**

Note 08 Other operating income

	2019	2018
Payment for sludge deliveries	20	22
Rental income, industrial properties	21	19
Insurance payments	6	0
Profit, sale of non-current assets	2	26
Realized exchange rate gains	207	160
Scrap sales	31	39
Profit on the sale of emissions rights	27	–
Other	39	39
	354	**305**

Note 09 Financial income

	2019	2018
Interest income on cash and cash equivalents [1]	11	0
Other	1	2
	12	**2**

[1] Included in the category "Financial assets at amortized cost".

Note 10 Financial expenses

	2019	2018
Interest on loans at amortized cost	54	66
Interest on currency futures [1]	73	57
Interest on pension provisions	20	19
Interest on reclamation reserve	91	70
Interest on leases	4	–
Other financial items	30	30
	272	**242**

[1] Included in the category "Financial assets at fair value through profit or loss".

Boliden's average interest rate totalled 1.1 per cent (1.2), weighted against rolling debt.

Note 11 Government subsidies

ACCOUNTING PRINCIPLES

Government support refers to subsidies, grants or premiums designed to provide an economic benefit, or Government support in the form of transfers of resources to the company that may be applied to an undertaking. Government support attributable to assets is reported either by recognizing the support as a prepaid income or by reducing the reported value of the asset.

Government subsidies totalling SEK 50 m (52) were received in 2019 and SEK 79 m (38) was reported in the Income Statement. The majority of the subsidies were received in Norway under a carbon dioxide compensation scheme and for energy efficiency improvement measures and are reported under Cost of goods sold in the Income Statement.

Note 12 Supplementary information to the Statement of Cash Flow

The Statement of Cash Flow is drawn up in accordance with the indirect method.

	2019	2018
Interest received		
Bank interest	10	0
	10	**0**
Interest paid		
Interest on currency futures	–75	–55
Interest on external loans	–53	–66
Interest on leases	–4	–
	–132	**–121**
Cash and cash equivalents, 31 December		
The following items are included in cash and cash equivalents:		
Cash and bank balances	1,373	2,272
Short-term investments	0	0
	1,373	**2,272**

The interest paid in the Statement of Cash Flow does not include accrued interest expenses, unlike in the Income Statement. Interest paid for interest capitalization is reported as part of the investment operations.

The short-term investments included in cash and cash equivalents comprise investments with a term of three months or less at the point of acquisition and which can be easily converted into cash and cash equivalents. Cash and cash equivalents are exposed to only an insignificant risk of value fluctuation.

The following table shows changes in liabilities attributable to financing activities.

The Group, 2019	Amount at the beginning of the year	Cash flow	Items not affecting cash flow		Amount at year-end
			Currency	Other[1)]	
Long-term liabilities to credit institutions	3,145	87	29		3,261
Current liabilities to credit institutions	216	2,026			2,242
Other interest-bearing liabilities, long-term	0	–		182	182
Other interest-bearing liabilities, current	2	–96		180	86
Total liabilities from financing activities	**3,363**	**2,017**	**29**	**362**	**5,771**

[1)] Transitional effect in respect of leases and new lease contracts during the year.

The Group, 2018	Amount at the beginning of the year	Cash flow	Items not affecting cash flow		Amount at year-end
			Currency	Other	
Long-term liabilities to credit institutions	4,004	–982	123		3,145
Current liabilities to credit institutions	1,331	–1,115			216
Other interest-bearing liabilities, long-term	2			–2	–
Other interest-bearing liabilities, current	5	–5		2	2
Total liabilities from financing activities	**5,342**	**–2,102**	**123**	**0**	**3,363**

The Parent Company's changes in liabilities attributable to financing activities constitute, in their entirety, items affecting cash flow.

Note 13 Intangible assets

ACCOUNTING PRINCIPLES

Exploration, research and development

Boliden's R&D primarily comprises exploration. Boliden is also involved, to a limited extent, in developing mining and smelting processes. Expenses associated with research and development are primarily booked as costs when they arise, and are reported under the item "Research and development costs" in the Income Statement. When the financial potential for the exploitation of a mine deposit has been confirmed, the expenses are booked as costs up to that date. After that date, the expenses are capitalized as deferred mining costs, the governing principles of which are described in Note 14, Property, plant and equipment. Exploration rights acquired in conjunction with operational acquisitions have been capitalized as intangible assets.

Acquired exploration rights are assessed to have an indefinite useful life as there is no predictable limit on the time period during which the asset is expected to generate net payments to Boliden. Impairment testing in respect of exploration rights is carried out in accordance with IFRS 6 Exploration for and Evaluation of Mineral Resources, and impairment testing is, therefore, only carried out in the presence of an indication that the need to write down an asset exists.

Patents, licences and similar rights

Intangible assets also include patents, licenses and similar rights. These are amortized over their anticipated useful lives.

Goodwill

Goodwill arises at the time of acquisition when the historical cost exceeds the fair value of the Group's share of the identifiable net assets of the subsidiary company. Goodwill is reported in the Balance Sheet at the value given in conjunction with the acquisition, converted, where relevant, at the closing day rate, after deduction for accumulated impairments. Calculations of the profit or loss on the sale of a unit include any remaining reported goodwill value ascribed to the operations sold.

Goodwill has been assessed as having an indefinite useful life. Goodwill is allocated to the smallest possible unit or group of units that generate cash where separate cash flows can be identified, and an impairment test is performed on the reported value at least once a year to determine whether there is any need for an impairment. Such impairment tests are, however, performed more frequently if there are indications that the value may have fallen during the year.

Emission rights

The Boliden Group participates in the European system for emission rights. Rights are allocated across the European market. One emission right grants entitlement to emit the equivalent of one tonne of carbon dioxide or similar gas and is classified as an intangible asset. Allocated emission rights are valued at the historical cost of zero, while rights acquired are valued at the purchase price. An intangible asset and a provision in the corresponding amount are reported during the current year in the event of any need arising to purchase additional emission rights. The asset is amortized over the remaining months of the year, thereby distributing the cost in line with production. The intangible asset is thereby exhausted and the provision for emissions made is settled. If the liability to deliver emission rights exceeds the remaining emission rights allocation, the liability is revalued at the market value of the number of emission rights required to clear the undertaking on the closing day.

Impairments

On each reporting occasion, an assessment is performed to determine whether there is any indication of impairment in respect of the Group's assets. Should this be the case, a calculation is performed to determine the recoverable amount of the asset in question. Goodwill, together with any intangible assets with an indefinable useful life, is subject to annual impairment tests even if there are no indications of a reduction in its value. The recoverable amount comprises whichever is the higher of the value in use of the asset in the operations and the value that would result if the asset were sold to an independent party, fair value minus selling expenses. The value in use comprises the present value of all incoming and outgoing payments attributable to the asset for the duration of its expected use in the operations, plus the present value of the net sales value at the end of the asset's useful life. The period during which use of the asset is expected to be possible is based on the assumption that the necessary environmental permits can be obtained. If the estimated recoverable amount is lower than the book value, the latter is written down to the former.

Impairments are reported in the Income Statement. Any impairment is reversed if changes in the assumptions leading to the original impairment mean that the impairment is no longer warranted. Impairments that have been performed are not reversed in such a way that the reported value exceeds the amount that would, following deductions for depreciation according to plan, have been reported if no impairment had been performed. Reversals of impairments performed are reported in the Income Statement. Goodwill impairments are not reversed. See also the section in Note 2 on Valuation of non-current assets.

	Capitalized development expenses	Patents, licences and similar rights	Exploration rights	Goodwill	Total intangible assets
Historical costs					
Opening balance, 01.01.2018	197	229	240	3,086	3,752
Investments	30	3	–	–	33
Sales and retirements	–	–2	–	–	–2
Reclassifications	–	17	–	–	17
Translation differences for the year	4	10	10	73	97
Closing balance, 31.12.2018	**231**	**257**	**250**	**3,159**	**3,897**
Opening balance, 01.01.2019	231	257	250	3,159	3,897
Investments	35	2	–	–	37
Sales and retirements	–	–2	–	–	–2
Reclassifications	–	1	–	–	1
Translation differences for the year	2	4	4	45	55
Closing balance, 31.12.2019	**268**	**262**	**254**	**3,204**	**3,988**
Amortization					
Opening balance, 01.01.2018	–118	–152			–270
Amortization for the year	–33	–20			–53
Sales and retirements	–	2			2
Translation differences for the year	–3	–7			–10
Closing balance, 31.12.2018	**–154**	**–177**			**–331**
Opening balance, 01.01.2019	–154	–177			–331
Amortization for the year	–15	–19			–34
Sales and retirements		2			2
Translation differences for the year	–1	–3			–4
Closing balance, 31.12.2019	**–170**	**–197**			**–367**
Reported value as per Balance Sheet, 31.12.2018	**77**	**80**	**250**	**3,159**	**3,566**
Reported value as per Balance Sheet, 31.12.2019	**98**	**65**	**254**	**3,204**	**3,621**
Amortization according to plan, included in the operating profit					
2018	–33	–20			–53
2019	–15	–19			–34

Goodwill
The Group's goodwill item arose primarily in conjunction with the acquisition of the operations from Outokumpu at the end of December 2003. Goodwill from the 2003 acquisition has principally been allocated to the Group's Smelters segment. Impairment tests have been carried out on the goodwill value in the manner described in Note 14 under Annual impairment test – Intangible assets and Property, plant and equipment.

Emission rights
In 2019, the Boliden Group has sold unused emission rights to a value of SEK 27 m.

Exploration rights
In 2014, Boliden acquired the exploration rights and mining operations of the Kylylahti copper mine in Finland. No depreciation of these assets has been effected.

Note 14 Property, plant and equipment

ACCOUNTING PRINCIPLES

Land, plants and equipment, and capitalized costs associated therewith for development, pre-production measures and future reclamation costs, are booked at the historical cost less depreciation and any impairment. Interest expenses attributable to financing development and completion of significant property, plant and equipment are included in the acquisition value. Repair and maintenance expenses are booked as costs, while substantial improvements and replacements are capitalized.

Estimated future expenses for the dismantling and removal of a tangible asset and the restoration of a site or area where the tangible asset is located (reclamation costs) are capitalized. Capitalized amounts comprise estimated expenses, calculated at current value, which are simultaneously reported as provisions. Effects of subsequent events that result in costs that exceed the provision are discounted, capitalized as a tangible asset and increase the provisions, and are depreciated over the remaining life of the asset.

Deferred mining costs at mines comprise the waste rock excavation required to access the ore body, work relating to infrastructural facilities, roads, tunnels, shafts and inclined drifts, as well as service, electricity and air distribution facilities. Deferred mining costs arising from expanding the capacity of the mining operation, the development of new ore bodies, and the preparation of mining areas for future ore production are capitalized. Mining costs arising from waste rock removal from open pit mines are capitalized as part of an asset when it becomes possible to identify the part of an ore body to which access has been improved.

Depreciation principles for Property, plant and equipment
Depreciation according to plan is based on the original capitalized values and the estimated useful life, and begins when an asset becomes operational.

Plant and capitalized values attributable to waste rock are depreciated per pushback and in conjunction with metal extraction in relation to the anticipated metal extraction for the entire pushback. Plant and capitalized values included in deferred mining costs are depreciated in accordance with a production-based depreciation method that is based on the Proven and Probable Mineral Reserves in the respective ore bodies. Depreciation is effected to the estimated residual value. Estimated residual values and production capacity are subject to ongoing review. Plants not directly linked to production capacity are depreciated on the basis of their anticipated useful lives. The estimated useful life is based on the assumption that the necessary environmental permits can be obtained.

Smelters and production plants are depreciated linearly over their anticipated useful lives.

The following depreciation periods are applied to Property, plant and equipment, including future reclamation costs:

Buildings	20–50 years
Land improvements	20 years
Deferred mining costs and waste rock capitalization	Concurrently with metal extraction
Capitalized reclamation costs	Linearly over the anticipated lifespan
Processing facilities	10–25 years
Machinery	3–10 years
Equipment, tools, fixtures and fittings	3–10 years

Boliden applies component depreciation, which means that larger processing facilities are broken down into component parts with different useful lives and thus different depreciation periods.

	Buildings and land	Deferred mining costs	Machinery and other technical facilities	Equipment, tools, fixtures and fittings	Work in progress	Total Property, plant and equipment
Historical costs						
Opening balance, 01.01.2018	10,608	16,565	42,703	1,580	3,970	75,426
Investments	251	1,543	1,717	83	2,513	6,107
Capitalized reclamation costs	20	–	892	–	–	912
Sales and retirements	–33	–	–505	–8	–35	–581
Reclassifications	222	–	601	3	–970	–144
Translation differences for the year	187	246	610	34	55	1,132
Closing balance, 31.12.2018	**11,255**	**18,354**	**46,019**	**1,692**	**5,533**	**82,852**
Opening balance, 01.01.2019	11,255	18,354	46,019	1,692	5,533	82,852
Investments	494	2,393	2,238	129	3,535	8,789
Capitalized reclamation costs	23		792			815
Sales and retirements	–78	–11	–769	–7	0	–865
Reclassifications	625	146	948	170	–1,897	–8
Translation differences for the year	91	82	269	45	15	502
Closing balance, 31.12.2019	**12,410**	**20,964**	**49,498**	**2,029**	**7,186**	**92,085**
Depreciation						
Opening balance, 01.01.2018	–5,198	–8,659	–23,978	–1,279		–39,113
Depreciation for the year	–510	–1,758	–2,546	–63		–4,877
Sales and retirements	18	–	535	4		557
Reclassifications	0	–	0	–		–
Translation differences for the year	–97	–105	–314	–27		–543
Closing balance, 31.12.2018	**–5,787**	**–10,522**	**–26,303**	**–1,365**		**–43,976**
Opening balance, 01.01.2019	–5,787	–10,522	–26,303	–1,365		–43,976
Depreciation for the year	–482	–1,849	–2,561	–79		–4,971
Sales and retirements	74	10	767	7		858
Reclassifications	3	–	–	–		3
Translation differences for the year	–54	–37	–156	–40		–287
Closing balance, 31.12.2019	**–6,246**	**–12,398**	**–28,252**	**–1,477**		**–48,373**
Reported value as per Balance Sheet, 31.12.2018	**5,468**	**7,832**	**19,717**	**327**	**5,533**	**38,877**
Closing balance as above, 31.12.2019	6,164	8,566	21,247	552	7,186	**43,715**
Reported right-of-use assets	66	–	209	–	–	**275**
Reported value as per Balance Sheet, 31.12.2019	**6,230**	**8,566**	**21,456**	**552**	**7,186**	**43,989**
Depreciation according to plan, included in the operating profit						
2018	–510	–1,758	–2,546	–63		–4,877
2019	–482	–1,849	–2,561	–79		–4,971

Capitalized reclamation costs include expenses in relation to the dismantling and removal of assets and the restoration of the sites where the assets are located. Accumulated capitalized reclamation costs total SEK 3,556 m (2,741). Accumulated depreciation totals SEK –604 m (–482). The year's capitalized reclamation costs total SEK 815 m (912) and are mainly attributable to the investigation results in connection with the ongoing environmental permit process regarding the future reclamation of the Kevitsa mine, amounting to SEK 597 m. SEK 218 m is attributable to the customary review of reclamation requirements. The change is reported in accordance

with IFRIC 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities. The year's reclamation costs are not included in the consolidated key ratios for the year's investments, and have no effect on the Group's cash flow.

Investments in property, plant and equipment include leases according to IFRS 16 Leases in the sum of SEK 137 m, see also Note 15, Leases. The same principle applies to right-of-use assets according to IFRS 16 as to the year's reclamation costs with regard to key ratios and cash flow.

	31.12.2019		31.12.2018	
Capitalized interest expenses included in planned residual value	**Reported value, SEK m**	**Interest rate, %**	**Reported value, SEK m**	**Interest rate, %**
Rönnskär's expansion, completed in 2000	21	6.8	25	6.8
Odda's expansion, completed in 2004	3	4.0	4	4.0
Aitik's expansion, completed in 2011	128	2.5	142	2.5
Rönnskär, electronic scrap recycling, completed in 2012	8	3.2	9	3.2
Garpenberg's expansion, completed in 2014	74	1.7	80	1.7

Annual impairment test – Intangible assets and Property, plant and equipment

Impairment tests are carried out yearly, or throughout the year if an event occurs that may result in an impairment requirement, and are based on the Group's annual budget and strategic planning work. The planning horizon is the estimated lifespan of each mine – typically between 5 and 30 years – and 10 years for smelters. Boliden's operations are characterized by long-term production plans in which every mine has set production plans for the entire estimated lifespan of the mine in question, while a substantial part of the smelters' concentrate supply is regulated by means of long-term delivery agreements. The plans are based on the assumption that the permits needed to conduct the operations can be obtained and, where necessary, renewed. This long-term production planning also enables the use of long-term cash flow forecasts. Additional growth assumptions are not included in extrapolated cash flow forecasts beyond the planning horizon, which means that smelters' cash flows from year eleven onwards are extrapolated using year ten as a base, after which no growth is taken into account.

The value of discounted cash flows is highly sensitive to metal prices, treatment and refining charges (TC/RC), and exchange rates (see sensitivity table on page 58 in the Risk management section of the Directors' Report). The present value of estimated future cash flows is based on the budget and planning prices adopted by the Board of Directors. Planning prices for the first year comprise futures prices on metals and currency markets. The long-term planning prices used in year two and thereafter consist of an anticipated average price over a single business cycle, generally 10 years. The long-term planning prices are based on internal and external analyses, primarily with regard to anticipated demand for metals and margin costs for metal producers. The long-term planning prices are compared with average long-term prices from different market players, such as industry analysts and other mining and smelting companies. The Group does not believe that futures prices from base metals markets are good indicators of long-term price trends, in that they are heavily influenced by spot prices.

The long-term real planning prices are currently as listed in the table below.

	2019			2018		
	Metal prices	**Treatment/ refining charges**	**Exchange rates**	**Metal prices**	**Treatment/ refining charges**	**Exchange rates**
Copper	USD 6,600/tonne	USD 80/tonne USc 8.0/ib	USD/SEK 8.00	USD 6,600/tonne	USD 80/tonne USc 8.0/ib	USD/SEK 7.50
Zinc	USD 2,400/tonne	USD 210	USD/NOK 7.50	USD 2,400/tonne	USD 190	USD/NOK 7.35
Lead	USD 2,100/tonne	USD 190	EUR/USD 1.17	USD 2,100/tonne	USD 215	EUR/USD 1.18
Nickel	USD 16,000/tonne			USD 16,000/tonne		
Gold	USD 1,200/tr. oz.			USD 1,200/tr. oz.		
Silver	USD 17.0/tr. oz.			USD 17.0/tr. oz.		

Individual mines or mining areas with centralized concentrating facilities, copper smelters, zinc smelters, Boliden Bergsöe AB and Boliden Commercial AB are classified as cash-generating units. The discounted real cash flows before tax for the respective cash-generating units are compared with the book value of capital employed. The cash flows are discounted with a real discount rate before tax of 9% (9), which corresponds to the weighted capital cost. The Group's goodwill is allocated to Segment Smelters, rather than to cash-generating units, in accordance with monitoring of goodwill. The value in use of the Group's assets is deemed to exceed the reported values, and no impairment requirement is consequently deemed to exist.

An increase in the discount rate of one percentage point would not have given rise to an impairment. A lowering of all long-term planning prices for metals by 10% would not result in any impairment requirements either. If the long-term planning prices for metals were to remain unchanged, a 10% weakening of the US dollar against all other currencies would not occasion an impairment requirement for Segment Mines or Smelters. The calculation does not include any compensatory movements in metal prices, TC/RC, or the prices of by-products or input goods, which has historically often been the case. A 10% fall in TC/RC for all metals would not result in any impairment requirement in Segment Smelters. For Segment Mines, the same fall would have a positive effect.

Note 15 Leases

ACCOUNTING PRINCIPLES

As mentioned in Note 1, Boliden is applying IFRS 16 Leases, as of 1 January 2019. For applied principles during the transition, see Note 1. The lease agreements are recognized as right-of-use assets and lease liabilities, and are reported on the day the leased asset is available for use by the Group. The calculation of the liability for a leased asset is based on the current value of the remaining lease charges, discounted by the implicit borrowing rate. If this cannot be determined, the discounting takes place instead using the marginal borrowing rate. The liability is recognized under Other interest-bearing liabilities, divided between a short-term and a long-term part. Each lease payment is distributed between amortization of the debt and financial expense. The financial cost is distributed over the lease period so that each accounting period is burdened with an amount corresponding to a fixed interest rate for the liability reported during the relevant period. The right-of-use asset is initially valued at historical cost, which is made up of the sum of the lease liability, any direct expenses and reclamation costs. The right-of-use asset is recognized as Property, plant and equipment in the Balance Sheet, broken down between the items Buildings and land as well as Machinery and other technical facilities. Depreciation takes place linearly over time. The Boliden Group's lease agreements comprise various properties, mining and service machinery, concentrate stores and excavators. Lease agreements vary in length, although the majority are between 3–6 years. The terms are negotiated separately for each agreement and vary. The leased assets may not be used as collateral for loans. Some agreements contain variable lease payments that are based on an index or interest rate. Changes to the index first affect the lease liability in the period when cash flow from the change occurs. At this time, the lease liability is recalculated and adjusted against the right-of-use asset. The option of extending an agreement is included in a few of the Group's leases for vehicles and equipment, and has not been included in the lease liability because the Group does not consider it reasonably certain that these options will be exercised. Revaluation of lease liability is carried out e.g. in the event of amended assessments of the utilization of options as well as amended assessments of the outcome of residual value guarantees.

An agreement running for less than 12 months, known as a short-term lease, or an agreement that relates to the lease of a low-value asset, is exempt and is not included when determining liability and right-of-use asset, rather these are booked linearly in the item "Cost of goods sold" in the Income Statement. This also applies to agreements with variable pricing, such as certain transport agreements. Agreements of a smaller value include IT equipment, office equipment and the hire of building modules.

Up until 2018, the standard IAS 17 Leases was applied in respect of leases. According to IAS 17, a financial lease was an agreement according to which the financial risks and benefits associated with the ownership of an item were essentially transferred from the lessor to the lessee. The non-financial leases are classified as operational.

Assets held under financial leases were initially recognized as non-current assets in the Consolidated Balance Sheet at the present value of future lease payments. The Group's liability in relation to the lessor was reported under the heading "Other interest-bearing liabilities" in the Balance Sheet, and was distributed between a short-term and a long-term element.

The lease payments were distributed between interest and amortization of the liability. The interest was distributed over the lease period so that each accounting period was burdened with an amount corresponding to a fixed interest rate on the liability reported during each period. The leased asset was written off according to the same principles that applied to other assets of the same type.

The lease charge for operational leases was booked linearly over the lease period.

The Group

Amounts reported in the Balance Sheet

The Balance Sheet presents the following amounts related to leases:

	2019	2018
Right-of-use assets		
Buildings and land	66	–
Machinery and other technical facilities	209	–
	275	–
Lease liabilities		
Short-term	85	–
Long-term	182	–
	267	–

Additions to the right-of-use assets during 2019 amounted to SEK 137 m.

Amounts reported in the Income Statement

The Income Statement presents the following amounts related to leases:

	2019	2018
Depreciation of right-of-use assets		
Buildings and land	–18	–
Machinery and other technical facilities	–69	–
	–87	–
Interest expenses	–4	–
Expense relating to short-term leases	–60	–
Expense relating to leases for which the underlying asset is of low value, which are not short-term leases	–29	–
Expense relating to variable lease payments that are not included in the lease liability	–4	–

The total cash flow relating to leases in 2019 amounted to SEK 189 m.

Assets held via operational lease agreements	**2019**	**2018**
Lease charges paid during the financial year	–	88
Contracted future lease charges		
Maturity within one year	–	41
Maturity later than one year but within five years	–	17
Maturity later than five years	–	0

Assets held via financial lease agreements	**2019**	**2018**
Machinery and other equipment		
Historical cost	–	32
Accumulated depreciation	–	–31
Closing value as of 31 December	–	**1**

The company with financial leases was Boliden Kylylahti OY, and the leases related to mining machinery. For information on future lease charges, see Note 29, Financial liabilities and maturity structure.

Note 16 Participations in subsidiaries

Specification of the Parent Company's and the Group's holdings of participations in subsidiaries

	31.12.2019			
Subsidiary/Co. reg. no./Registered office	Shares/ participations	Percentage share	Book value	Book value 2018
Boliden Limited, 3977366, Toronto, Canada	85,811,638	100	–	–
Ontario Inc, 1393512, Toronto, Canada				
Boliden BV, 18048775, Drunen, Netherlands				
Boliden Apirsa S.L in liquidation, ESB-41518028, Aznalcóllar (Seville), Spain				
Boliden Mineral AB, 556231-6850, Skellefteå	1,650,000	100	3,911	3,911
Boliden Harjavalta Oy, 1591739-9, Harjavalta, Finland				
Boliden Kokkola Oy, 0772004-3, Kokkola, Finland				
Kokkolan Teollisuusvesi OY, 2558533-2, Kokkola, Finland				
Boliden Commercial AB, 556158-2205, Stockholm				
Boliden Commercial UK Ltd, 5723781, Warwickshire, United Kingdom				
Boliden Commercial Deutschland GmbH, 165903, Neuss, Germany				
Tara Mines Holding DAC, 60135, Navan, Ireland				
Boliden Tara Mines DAC, 33148, Navan, Ireland				
Irish Mine Development Ltd, 174811, Navan, Ireland				
Rennicks and Bennett Ltd, 34596, Navan, Ireland				
Boliden Odda AS, 911177870, Odda, Norway				
Boliden Bergsöe AB, 556041-8823, Landskrona				
Boliden Bergsoe AS, 20862149, Glostrup, Denmark				
Boliden Kylylahti Oy, 1925412-3, Polvijärvi, Finland				
Boliden Kuhmo Oy, 1925450-2, Polvijärvi, Finland				
Boliden Kevitsa Mining Oy, 2345699-1, Sodankylä, Finland				
Boliden FinnEx Oy, 2345662-5, Sodankylä, Finland				
Other subsidiaries, dormant or of minor importance				
			3,911	**3,911**

During the year, the Parent Company, Boliden AB, has received a dividend totalling SEK 7,000 m (6,000) from Boliden Mineral AB and a dividend totalling SEK 36 m (–) from Boliden Limited.

Note 17 Participations in associated companies

	31.12.2019	31.12.2018
Book value at beginning of year	25	29
Dividends received	–10	–
Liquidation results	–6	–6
Exchange rate differences	0	0
Share in associated companies' profits for the year	0	2
Book value at year-end	**9**	**25**

	Co. reg. no.	Registered office	Number of participations	Percentage share	Value of equity share in the Group
Indirectly owned					
KIP Service OY	2240650-3	Kokkola	3,280	46	9
					9

Note 18 Tax

ACCOUNTING PRINCIPLES

The tax expense (income) for the period comprises current tax and deferred tax. Tax is reported in the Income Statement, Other comprehensive income or Equity, depending on where the underlying transaction has been reported.

Current tax is the tax calculated on the taxable profit/loss for each period. The year's taxable profit/loss differs from the year's reported profit/loss before tax in that it has been adjusted for non-taxable and non-deductible items and temporary differences. The Group's current tax liability is calculated in accordance with the taxation rates stipulated or announced on the closing day.

Deferred tax is reported using the Balance Sheet method, under which deferred tax liabilities are reported in the Balance Sheet for all taxable temporary differences between reported and fiscal values of assets and liabilities. Deferred tax assets are reported in the Balance Sheet in respect of loss carry-forwards and all deductible temporary differences to the extent that it is likely that these amounts can be used to offset future taxable surpluses. The reported value of deferred tax assets is reviewed at the end of each accounting period and reduced to the extent that it is no longer likely that sufficient taxable surpluses will be available for its use. Deferred tax is calculated in accordance with the taxation rates that are expected to apply to the period in which the asset is recovered or the liability settled.

Both deferred and current tax receivables and tax liabilities are offset when they relate to income tax levied by the same tax authority.

Current tax expenses	2019	2018
Tax expenses for the period	–1,334	–1,719
Adjustment of tax attributable to previous years	9	–61
	–1,325	**–1,780**
Deferred tax expense (–) / tax income (+)		
Deferred tax income/tax expenses in respect of temporary differences	–223	91
Revaluation of deferred tax due to a change in the taxation rate	–1	127
	–224	**218**
Total reported tax expense (–) / tax income (+)	**–1,548**	**–1,562**
Reconciliation of effective tax		
Reported profit before tax	7,337	8,763
Tax according to current taxation rate	–1,559	–1,902
Fiscal effect of non-deductible expenses	–7	–7
Fiscal effect of non-taxable income	2	1
Deductible costs not reported in the Income Statement	6	215
Market valuation of deferred tax assets	3	–2
Utilized non-capitalized loss carry-forward deductions	–	67
Revaluation effect due to a change in the taxation rate	–1	127
Adjustment of tax attributable to previous years	9	–61
Total reported tax expenses	**–1,548**	**–1,562**

Tax expenses comprise 21.1% (17.8) of the Group's pre-tax profit. The anticipated tax expense for 2019 of 21.2% (21.7) has been calculated given the current Group structure and applicable taxation rates in the respective countries.

Deferred tax assets/tax liability

The tax assets reported in the Balance Sheet and the provision for deferred tax relates to the following assets and liabilities.

	31.12.2019			31.12.2018		
The Group	Deferred tax assets	Deferred tax liability	Net	Deferred tax assets	Deferred tax liability	Net
Intangible assets	3	–7	–3	20	–6	14
Buildings and land	143	–105	37	195	–114	81
Machinery and fixtures and fittings	8	–2,736	–2,728	6	–2,779	–2,773
Deferred mining costs	–	–153	–153	54	–97	–43
Other property, plant and equipment	1	–5	–4	1	–5	–4
Inventories	120	–560	–440	22	–348	–327
Long-term liabilities	300	–9	291	245	2	247
Total	**575**	**–3,576**	**–3,001**	**544**	**–3,348**	**–2,804**
Offset within companies	–448	448	–	–408	408	–
Total deferred tax assets/tax liability	**127**	**–3,128**	**–3,001**	**136**	**–2,941**	**–2,804**

Change in deferred tax in respect of temporary differences and tax losses carried forward

The Group, 2019	Amount at the beginning of the year	Reported in the Income Statement	Reported in Other comprehensive income	Translation difference	Amount at year-end
Intangible assets	14	–18	–	0	–3
Buildings and land	80	–48	–	6	37
Machinery and fixtures and fittings	–2,773	58	–	–13	–2,728
Deferred mining costs	–43	–111	–	1	–153
Other property, plant and equipment	–4	–	–	–	–4
Inventories	–327	–114	–	0	–440
Long-term liabilities	247	9	33	2	291
Total	**–2,804**	**–224**	**33**	**–4**	**–3,001**

Change in deferred tax in respect of temporary differences and tax losses carried forward

The Group, 2018	Amount at the beginning of the year	Reported in the Income Statement	Reported in Other comprehensive income	Translation difference	Amount at year-end
Intangible assets	4	10	–	–	14
Buildings and land	28	51	–	2	81
Machinery and fixtures and fittings	–2,891	126	–2	–7	–2,774
Deferred mining costs	–103	66	–	–6	–43
Other property, plant and equipment	19	–24	–	1	–4
Inventories	–277	–49	–	–	–326
Long-term liabilities	188	40	31	–12	247
Current liabilities	1	–1	–	–	–
Total	**–3,031**	**218**	**29**	**–21**	**–2,804**

Tax losses carried forward

Unutilized tax losses carried forward for which deferred tax assets have not been reported totalled SEK 73 m (75) in Canada on 31 December 2019, which will mature between 2030 and 2037. It is considered unlikely that the loss can be offset against future surpluses as no operations are conducted in Canada.

Tax paid by country

	2019	2018
Sweden	1,558	1,770
Finland	396	299
Ireland	62	159
Norway	41	56
Other	3	1
	2,060	**2,286**

Note 19 Inventories

ACCOUNTING PRINCIPLES

The Group's inventories primarily comprise mined concentrates, materials tied up in the smelters' production processes and finished metals. Inventories are valued at whichever is the lower of the historical cost in accordance with the first-in-first-out principle and the net realizable value, taking into account the risk of obsolescence. The historical cost of inventories of metals from the company's mines and semi-finished and finished products manufactured in house comprises the direct manufacturing costs plus a surcharge for indirect manufacturing costs. Supplies inventories are valued at whichever is the lower of the average historical cost and the replacement value. When mined concentrates are bought in from external sources and final pricing has not yet occurred, the acquisition value is estimated at the closing day price. Fair value hedging is effected in conjunction with the final pricing of mined concentrates. The change in the value of hedged items in the inventory value is also reported in conjunction with fair value hedging of mined concentrates and finished metals.

	31.12.2019	31.12.2018
Raw materials and consumables	6,882	5,666
Goods under manufacture	4,650	2,908
Finished goods and tradable goods	1,731	1,784
	13,262	**10,358**

Note 20 Trade and other receivables

ACCOUNTING PRINCIPLES

Receivables are classified as trade and other receivables as well as interest-bearing short-term holdings of securities or other investments, which are not classified as non-current assets and which are not attributable to cash and cash equivalents. Receivables are reported at the anticipated recoverable amount, i.e. after deductions for expected bad debts. The anticipated term of trade receivables and other current receivables is short, and the value is, therefore, reported at the nominal amount without any discounting in accordance with the amortized cost method.

Boliden applies the simplified method for reporting anticipated credit losses on trade and other receivables, which occurs on an individual basis. The impairment requirement is evaluated on every closing day on the basis of anticipated credit losses, which constitutes an assessment that reflects an objective and probability-weighted result, based on reasonable and verifiable data. For information on the management of credit risks, see the section entitled Credit risks in trade and other receivables on page 59 in the Risk management section of the Directors' Report.

On 31 December 2019, trade and other receivables falling due for payment in more than 30 days totalled SEK 10 m (10), corresponding to 0.5% (0.5) of total trade and other receivables. The maturity structure is shown in the following table:

	31.12.2019	31.12.2018
Trade and other receivables, not due	1,764	1,755
Overdue: 0–30 days	345	99
Overdue: 31–60 days	5	2
Overdue: 61–90 days	4	7
Overdue: > 90 days	1	1
	2,119	**1,864**

The overwhelming majority of the Group's trade and other receivables relate to European customers. Trade and other receivables in foreign currencies have been valued at the closing day rate. Note 3, Information per business segment and geographical market, shows the breakdown of revenues by geographical area.

Note 21 Other current receivables

	31.12.2019	31.12.2018
Energy tax	81	79
Royalties	295	237
Other prepaid expenses and accrued income	222	156
VAT recoverable	496	413
Other current receivables	359	350
	1,453	**1,235**

Note 22 Related party disclosures

Relationships
The Parent Company's directly owned subsidiaries are reported in Note 16, Participations in subsidiaries, while its participations in associated companies are reported in Note 17, Participations in associated companies. Information regarding the Members of the Board and Group management, and the remuneration paid to these, is presented in Note 5, Employees and personnel costs and in the Corporate Governance report on pages 67–69.

Transactions
No Member of the Board or senior executive in the Group participates or has participated, directly or indirectly, in any business transactions during the current or previous financial year between themselves and the Group which are or were unusual in nature with regard to their terms. Nor has the Group granted loans, issued guarantees or provided sureties to any of the Members of the Board or senior executives of the Company. During the year, the Parent Company, Boliden AB, has received a dividend totalling SEK 7,000 m (6,000) from Boliden Mineral AB and a dividend totalling SEK 36 m (0) from Boliden Limited.

Note 23 Equity

ACCOUNTING PRINCIPLES

Share capital
Ordinary shares are classified as share capital. Transaction costs in conjunction with a new share issue are reported as a net amount after tax for deduction from the issue proceeds received.

Buy-back of own shares
Boliden's holdings of its own shares are reported as a reduction in equity. Transaction costs are reported directly against equity.

Dividend
A dividend payment proposed by the Board of Directors does not reduce the equity until it has been approved by the Annual General Meeting.

Share capital	31.12.2019	31.12.2018
Opening number of shares	273,511,169	273,511,169
Stock split 2:1	273,511,169	273,511,169
Redemption	–273,511,169	–273,511,169
Closing number of shares	**273,511,169**	**273,511,169**
Nominal value, SEK	578,914,338	578,914,338
Nominal value per share	2.12	2.12

Equity, SEK m	31.12.2019	31.12.2018
Share capital	579	579
Total equity	41,440	39,011
Equity attributable to the owners of the Parent Company	41,429	39,000
Equity per share, SEK	151.47	142.59

Earnings per share	31.12.2019	31.12.2018
Net profit for the year attributable to the owners of the Parent Company, SEK m	5,786	7,198
Average number of shares, before and after dilution	273,511,169	273,511,169
Number of own shares held	–	–
Earnings per share, SEK	**21.15**	**26.32**

Equity
The Articles of Association for Boliden AB state that the share capital shall comprise a minimum of SEK 200 m and a maximum of SEK 800 m. The share capital comprises a single class of share.

There are no potential shares and hence no dilution effect.

The Annual General Meeting of the Company's shareholders held on 3 May 2019 resolved to pay a dividend of SEK 8.75 per share, equivalent to a total payment of SEK 2,393 m. At the same time, an automatic share redemption procedure was approved whereby each share would be divided into one ordinary share and one redemption share. The redemption share was then automatically redeemed for SEK 4.25 per share, equivalent to a total payment of SEK 1,162 m.

Boliden's Board of Directors will propose to the Annual General Meeting that a dividend of SEK 7.00 (8.75) per share be paid, equivalent to a total of SEK 1,915 m. Boliden's dividend policy stipulates that approximately one-third of the net profit after tax shall be disbursed in the form of dividends.

Earnings per share
Earnings per share are calculated by dividing the profit for the period attributable to the owners of the Parent Company by the average number of shares.

Asset management
Boliden's managed assets comprise equity. Consolidated equity is presented on page 73, along with a description of the content of the various capital categories. There are no external capital requirements other than those mandated in the Swedish Companies Act.

Boliden monitors its capital structure e.g. with the aid of the net debt/equity ratio. The net debt/equity ratio is calculated as the net of interest-bearing provisions and liabilities less financial assets including cash and cash equivalents, divided by equity.

See page 6 for details of Boliden's dividend policy and net debt target.

Note 24 Provisions for pensions and similar undertakings

ACCOUNTING PRINCIPLES

Employee benefits

Pension undertakings

The Group's companies have a variety of pension systems in accordance with local conditions and practices in the countries in which they operate. These are generally financed through payments made to insurance companies or through the company's own provisions, which are determined through periodic actuarial calculations. The Group's provisions for pension undertakings are calculated in accordance with IAS 19 Employee benefits.

For pension systems where the employer is committed to defined contribution systems, the undertaking in relation to the employee ceases when the agreed premiums have been paid. Premiums paid are booked as costs on an ongoing basis.

The undertaking does not cease for pension systems where a defined benefit pension has been contractually agreed, until the agreed pensions have been paid out. Boliden commissions independent actuaries to calculate pension undertakings relating to the defined benefit pension plan arrangements in each country. For information on calculation parameters, see Note 2, Estimates and assessments: Pension undertakings.

Revaluations of the defined benefit net pension liability, such as actuarial profits and/or losses and the difference between the return on plan assets and the discount rate, are reported under Other comprehensive income including attributable special payroll tax. The financing cost of the net pension liability is calculated using the discount rate for the pension liability. The financing cost, the cost of service during the current period and any previous periods, losses from settlements and costs in connection with special payroll tax are all reported in the Income Statement. Special payroll tax is regarded as part of the total net pension liability.

Boliden has established pension plans in the countries in which the company operates. The pension plans include both defined benefit and defined contribution plans. The defined benefit plans provide the employee with a fixed amount of their final salary in conjunction with retirement. Boliden's defined benefit pension plans are mainly operated in Sweden and Ireland, and to a small extent in Norway and Finland. The defined contribution plans comply with local regulations in the respective countries. Boliden has defined contribution plans in Sweden, Ireland, Finland and Norway.

Sweden

Boliden's pension undertakings in Sweden are not invested in funds. The pension undertakings are secured through the Swedish PRI/FPG system and through insurance companies. The majority of the pension undertakings for salaried employees are secured through insurance with Alecta and are lifelong retirement pensions. The benefits offered by the lifelong pensions are determined using different percentages for different salary intervals. Alecta has not provided sufficient information for the 2019 financial year for the ITP plan to be reported as a defined benefit plan, and it is consequently reported in accordance with UFR 10 Accounting of the ITP2 pension plan which is financed through insurance in Alecta, as a defined contribution plan. A surplus in Alecta can be allocated to the policyholders and/or those insured. At the end of the year, Alecta's collective consolidation level was 148% (142). The collective consolidation level comprises the market value of Alecta's assets as a percentage of the insurance undertakings calculated in accordance with Alecta's actuarial calculation assumptions, which do not correspond with those of IAS 19 Employee benefits. Boliden's pension undertakings account for only a very small percentage of Alecta's insurance undertakings. There are, in addition to the ITP plans, a few previously earned temporary retirement pensions within Boliden.

"Gruvplanen" (GP) is a pension agreement for underground workers. The plan grants underground workers entitlement to receive a pension between the ages of 60 and 65 and between 65 and 70 under certain preconditions based on an average income. The "Gruvplanen" plan was closed to new earners in 2011 and replaced by a defined contribution pension plan (GLP). The commitments change from vesting to non-vesting in conjunction with retirement.

Ireland

The pension undertaking is secured by the transfer of funds to four defined benefit plans and one defined contribution plan. The defined benefit plans are closed to new employees. The pension plans are controlled by the Irish Pensions Board and Irish Pensions Legislation. All defined benefit plans are invested in funds. The largest defined benefit plan and the defined contribution pension plan have Board Members from both the company and the members. Boliden has appointed the Irish Pension Trust to manage the other defined benefit plans.

The financial position of the pension plans is reviewed every three years by an actuary in order to determine the requisite financing level. The actuary ensures that Boliden receives annual reports on the financial position in accordance with accounting requirements. Payments are made to all five plans through a combination of contributions from both Boliden and employees in accordance with employment contracts. No other deposits are made.

The Board of the pension plans is responsible for investments in plan assets. The majority of the shares are invested in companies operating in the health care, financial services and raw materials sectors that are based in North America (58%) and Europe (35%), and which are measured against sector indices and other benchmarks. A significant proportion of the plan assets, 72%, are invested in European government bonds in order to reduce the risk. Cash and cash equivalents are held in order to facilitate pension disbursements.

Events during the year

The current value of Boliden's pension undertaking is slightly higher than last year's level (recalculated), largely due to the effect of amended assumptions.

The Group's reported pension liability totals SEK 1,113 m (967), which includes endowment insurance and similar undertakings totalling SEK 115 m (102) in respect of defined contribution pension plans in Sweden.

Actuarial assumptions during the year

Costs, undertakings and other factors in pension plans are calculated by means of the Projected Unit Credit Method, using the assumptions shown in the table on next page.

The discount rate is established for every geographical market with reference to the market return on company bonds on the closing day. In Sweden, where there is no functioning market for such bonds, the market return on housing bonds has been used and a premium for a longer term added, based on the duration of the pension undertakings.

The financing cost of the net pension liability is calculated using the discount rate and is reported under Boliden's net financial items.

	Sweden		Ireland		Other	
Actuarial assumptions (weighted average)	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Discount rate, %	1.80	2.50	1.20	1.85	1.5–1.8	1.5–2.6
Future pay increases, %	2.30	2.50	1.20	1.75	1.8–2.25	1.8–2.75
Future pension increases, %	1.80	2.0	1.20	1.75	1.8	1.8
Life expectancy						
Women	89	89	89	89	90	90
Men	87	87	87	87	86	86

	Sweden		Ireland		Other		Total	
Specification of provisions for pensions	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Pension undertaking at the beginning of the year	**840**	**797**	**12**	**30**	**13**	**13**	**865**	**840**
Defined benefit plan costs	57	56	6	13	12	9	75	79
Revaluations recognized in Other comprehensive income	130	31	–3	–13	3	8	130	26
Payments and disbursements	–42	–42	–21	–19	–7	–8	–70	–70
Translation differences	–	–	0	1	–2	–9	–2	–8
Pension undertaking at the end of the year[1)]	**985**	**840**	**–6**	**12**	**19**	**13**	**998**	**865**
Endowment insurance and similar undertakings	115	102	–	–	–	–	115	102
Net debt, as per Balance Sheet [2)]	**1,100**	**941**	**–6**	**12**	**19**	**13**	**1,113**	**967**
Specification of provisions for pensions, as per 31 December								
Pension undertakings, funded	–	–	264	289	24	23	289	312
Pension undertakings, unfunded	985	840	–	–	11	6	997	846
Fair value of plan assets	–	–	–271	–277	–17	–16	–287	–293
Pension undertakings	**985**	**840**	**–6**	**12**	**19**	**13**	**998**	**865**
Endowment insurance and similar undertakings	115	102	–	–	–	–	115	102
Net debt, as per Balance Sheet	**1,100**	**941**	**–6**	**12**	**19**	**13**	**1,113**	**967**
Specification of costs								
Cost of defined benefit plans								
Current service cost	37	36	4	11	12	8	53	55
Interest expense on undertaking	20	19	5	5	0	1	25	24
Interest income from plan assets	–	–	–5	–4	–	–	–5	–4
Special payroll tax and other tax	0	1	–	–	–	–	0	1
Administrative costs and premiums paid	–	–	3	2	0	1	3	3
Total cost of defined benefit plans	**57**	**56**	**6**	**13**	**12**	**9**	**75**	**79**
Cost of defined contribution plans	98	61	42	46	181	188	321	293
Total pension costs	**155**	**117**	**48**	**59**	**193**	**197**	**396**	**373**

[1)] Undertakings in Sweden include undertakings in accordance with PRI/FGI totalling SEK 703 m (581), undertakings for underground workers totalling SEK 177 m (177), and other undertakings totalling SEK 0 m (0).

[2)] The pension liability reported in the Balance Sheet includes not only the defined benefit pension undertaking and endowment insurance, but also special payroll tax in Sweden.

	Sweden		Ireland		Other		Total	
Reconciliation of pension undertaking	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Present value of undertakings at the beginning of the year	840	797	289	272	30	30	1,160	1,099
Reclassifications	–	–	–	24	–	–	–	24
Current service cost	37	36	4	11	12	8	53	55
Interest expense on undertaking	20	19	5	5	0	1	25	24
Special payroll tax	0	1	–	–	–	–	0	1
Fees from plan participants	–	–	–	0	–	–	–	0
Revaluation of defined benefit pension liability recognized in Other comprehensive income	130	31	21	–19	3	5	154	17
of which profit/loss as a result of financial assumptions	*90*	*30*	*23*	*–5*	*0*	3	*113*	*28*
of which profit/loss as a result of experience-based assumptions	*40*	*1*	*–2*	*–14*	*3*	*2*	*41*	*–11*
Disbursements made	–42	–42	–59	–15	–7	–8	–107	–66
Translation differences	–	–	4	12	*–3*	–5	1	7
Present value of undertakings at the end of the year	**985**	**840**	**264**	**289**	**35**	**30**	**1,286**	**1,160**
Endowment insurance and similar undertakings	**115**	**102**	–	–	–	–	**115**	**102**
of which amounts attributable to active employees	*576*	*480*	*78*	*69*	*26*	*21*	*680*	*571*
of which amounts attributable to holders of paid up policies	*247*	*196*	*11*	*10*	–	–	*258*	*206*
of which amounts attributable to retired employees	*277*	*266*	*175*	*210*	*9*	*9*	*461*	*485*
Reconciliation of plan assets								
Fair value of plan assets at the beginning of the year	–	–	277	243	16	17	293	260
Reclassifications	–	–	–	9	–	–	–	9
Interest income from plan assets	–	–	5	4	–	–	5	4
Return on plan assets excluding amounts included in net interest items, recognized in Other comprehensive income	–	–	24	–7	*0*	–3	24	–10
Fees from the employer excluding disbursements in conjunction with terminations	–	–	21	34	–	–	21	34
Fees from plan participants	–	–	–	0	–	–	–	0
Disbursements made	–	–	–59	–15	–	–	–59	–15
Administrative costs, tax and premiums paid	–	–	–3	–2	–	–	–3	–2
Translation differences	–	–	6	11	1	2	7	13
Fair value of plan assets at the end of the year	**–**	**–**	**271**	**277**	**17**	**16**	**288**	**293**
Net debt, as per Balance Sheet[1)]							**1,113**	**967**

[1)] Including endowment insurance and similar undertakings totalling SEK 115 m (102).

Specification of plan assets								
Listed shares and participations	–	–	76	57	–	–	76	57
Interest-bearing securities	–	–	194	217	–	–	194	217
Cash and cash equivalents	–	–	1	3	–	–	1	3
Other	–	–	–	1	17	16	17	17
	–	–	**271**	**277**	**17**	**16**	**288**	**293**

Sensitivity analysis of the effect on the defined benefit pension liability (+increase/–decrease in pension liability)		**Sweden**	**Ireland**	**Total**
Significant actuarial assumptions				
Discount rate, %	+0.5	–73	–16	–89
	–0.5	84	17	101
Pay increases, %	+0.5	58	4	62
	–0.5	–49	–4	–53
Increased life expectancy, years	–1	28	10	38
	+1	–28	0	–28

The sensitivity analysis has been conducted on the basis of the above actuarial changes, as Boliden is of the opinion that they can have a substantial impact on the pension liability. It is also likely that changes to these assumptions will be made. The calculations have been performed by means of the analysis of each change individually, and the calculations have not taken into account any interdependence between the assumptions. No sensitivity analyses have been conducted for Norway and Finland as the amounts in question are insignificant. Other countries do not have any defined benefit pension liabilities.

Defined benefit pension liability terms	Sweden	Ireland	Other	Total
Benefits scheduled for disbursement within 12 months	44	12	3	59
Benefits scheduled for disbursement within 1–5 years	176	54	14	244
Benefits scheduled for disbursement after 5 years or more	880	452	26	1,353

The maturity of plan assets in Ireland has reduced anticipated payments after five years or more. The weighted average duration of the defined benefit pension liability is 18 years for Sweden and 13 years for Ireland.

Note 25 Other provisions

ACCOUNTING PRINCIPLES

Provisions are reported when the Group has, or may be considered to have, an obligation as a result of events that have occurred and it is likely that disbursements will be required in order to fulfil this obligation. A further prerequisite is that it should be possible to make a reliable estimate of the amount to be disbursed.

When a significant effect arises due to the point in time at which a provision is made, the provision is valued at the present value of the amount estimated to be required to fulfil the obligation. A discount interest rate before tax that reflects current market evaluations of the time value of money in the long term and the risks associated with the provision is applied in conjunction herewith. The increase that is due to time passing is reported as an interest expense. Provisions are broken down into current and long-term provisions.

Boliden's provisions, with the exception of pensions (see Note 24), refer primarily to reclamation costs that are expected to arise when operations are decommissioned. Provisions are also made for any purchases of emission rights and for any remuneration payable in conjunction with the termination of employment that may be payable to employees to whom a commitment of termination has been given or to employees who accept voluntary redundancy. The Group reports a provision and a cost in conjunction with a termination when Boliden is obligated either to give the employee notice prior to the normal point in time for employment's cessation, or to provide remuneration with a view to encouraging early retirement.

	31.12.2019	31.12.2018
Reclamation costs	5,086	4,016
Other	15	16
	5,100	**4,032**
Of which:		
Long-term	4,930	3,898
Current	170	134
	5,100	**4,032**

Reclamation costs

Provisions for reclamation costs are made on the basis of an assessment of future costs based on current technology and other conditions. Provision has been made for the current value of estimated reclamation undertakings in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets and IFRIC 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities. Gradual reclamation is preferable, although most of the reclamation work is carried out after a decision to decommission. In historical terms, Boliden has succeeded in extending the useful life of its mining assets compared with the original plans. Reclamation provisions are reviewed on an ongoing basis. Additions to existing provisions are primarily attributable to investigation results in conjunction with the ongoing environmental permit process regarding future reclamation of the mine in Kevitsa, SEK 597 m. Customary reviews of reclamation requirements have also contributed to the increase, with SEK 318 m. The provision during the year amounting to SEK 139 m refers to future reclamation of land in Rönnskär that is being used for the temporary storage of waste.

To determine the size of the reclamation liability, a real discount rate of 2% (2) has been used. Note 2, Estimates and assessments presents a sensitivity analysis in respect of the discount rate.

	2019			2018		
The Group	Reclamation costs	Other	Total	Reclamation costs	Other	Total
Book value at the beginning of the year	4,016	16	4,032	3,123	14	3,137
Additions to existing provisions	915	3	918	1,002	5	1,007
Provision during the year	139	–	139	–	–	–
Reversal of existing provisions	–	–1	–1	–27	–	–27
Payments	–81	–3	–84	–193	–3	–196
Discount effect for the period	91	0	91	70	0	70
Translation difference	6	0	6	42	0	42
Book value at year-end	**5,086**	**15**	**5,100**	**4,016**	**16**	**4,032**
Anticipated time of outflow of resources:						
Within one year	170	0	170	134	0	134
Between one and two years	339	9	348	208	10	218
Between three and five years	478	1	479	324	0	325
More than five years	4,098	5	4,103	3,350	5	3,355
	5,086	**15**	**5,100**	**4,016**	**16**	**4,032**

Note 26 Financial instruments

ACCOUNTING PRINCIPLES

The following financial instruments, i.e. financial assets and liabilities, are recognized in the Balance Sheet: shares, receivables, cash and cash equivalents, liabilities and derivatives.

Financial instruments are recognized in the Balance Sheet when the company becomes bound by the instrument's contractual terms (the economic approach). Liabilities to credit institutions are, however, not reported until the settlement date. Financial assets are removed from the Balance Sheet when the rights entailed by the agreement are utilized, mature or are transferred to another counterparty. Financial liabilities are removed from the Balance Sheet when the agreement's obligations are fulfilled or if significant aspects of the loan terms are renegotiated.

Financial instruments are reported at the fair value or amortized cost, depending on the initial categorization under IFRS 9, Financial Instruments.

Changes to IFRS 9 resulting from the future exchange of reference rates (interbank offered rates), "Interest Rate Benchmark Reform amendments to IFRS 9, IAS 39 and IFRS 7", have been applied in advance. This change does not have any effect on the financial statements.

Valuation principles

Fair value

The fair value of derivatives is based on listed bid and ask prices on the closing day and on a discounting of estimated cash flows. Market prices for metals are taken from the trading locations of metal derivatives, i.e. the London Metal Exchange (LME) and the London Bullion Market Association (LBMA). Discount rates are based on current market rates per currency and time to maturity for the financial instrument. Exchange rates are obtained from the Riksbank (Swedish Central Bank).

When disclosing the fair value of liabilities to credit institutions, the fair value is calculated as discounted agreed amortizations and interest payments at estimated market interest rate levels. The fair value of trade and other receivables and trade and other payables is deemed to be the same as the reported value due to the short term to maturity, to the fact that provisions are made for bad debts, and to the fact that any penalty interest incurred will be debited. The fair value of cash and cash equivalents is deemed to be the same as the reported value, since the anticipated credit losses are insignificant. The general rating of the banks has been applied in order to calculate credit losses which have been deemed to be insignificant.

If changes in value cannot be determined for financial assets or liabilities reported at fair value, they are reported at the historical costs of the instruments at their time of acquisition, which corresponds to the fair value at the time of acquisition.

Boliden provides information on all financial assets and liabilities reported at fair value in the Balance Sheet on the basis of a three-level fair value hierarchy. Level one comprises instruments that are listed and traded on an active market where identical instruments are traded. Level two comprises instruments that are not traded on an active market, but where observable market data is used for valuation of the instrument (either directly or indirectly). Level three comprises instruments where the valuation is, to a considerable extent, based on unobservable market data.

The assessments have been conducted on the basis of the circumstances and factors that apply with regard to the various instruments. Metal futures are classified as level two, in that the discounted prices are based on listed daily prices from the exchanges. Currency futures and interest swaps have also been classified as level two, with reference to the fact that the valuation is based on observable market data. The fair value of liabilities to credit institutions has been classified as level two, as these are calculated as discounted agreed amortizations and interest payments at estimated market interest rate levels. The fair value therefore essentially corresponds with the reported value. Shares and participations that are not listed have been classified as level three. Exceptions to classification on the basis of the fair value hierarchy are made for trade and other receivables, cash and cash equivalents, and trade and other payables where the reported value is deemed to constitute a reasonable estimation of the fair value.

Amortized cost

Amortized cost is calculated using the effective interest rate method. This means that any premiums or discounts, as well as expenses or income directly attributable to them, are distributed over the duration of the contract with the aid of the estimated effective interest rate. The effective interest rate is the rate that yields the instrument's historical cost as a result in conjunction with current value calculation of future cash flows.

Financial assets at amortized cost

The financial assets at amortized cost category includes financial investments, cash and cash equivalents, and receivables not listed on an active market. These financial instruments are characterized by being part of a business model whose purpose is to be held until maturity and to collect cash flows from payments of principals and any interest.

Financial assets at fair value through profit or loss

Financial instruments in the category fair value through profit or loss are characterized by being part of a business model whose purpose is to be held until maturity or held for sale, and which are expected to be sold in a near future. Financial assets in this category are valued at fair value and changes in value are reported in the Income Statement. Shares for which the fair value cannot be established are reported at their historical cost, taking into account accumulated impairments.

Financial assets and liabilities by valuation category

31.12.2019	Valuation hierarchy	Amortized cost	Fair value through profit or loss	Derivatives (hedge accounting)	Total reported value	Total fair value
ASSETS						
Financial assets						
Other shares and participations	3		6		6	6
Derivative instruments	2			18	18	18
Current assets						
Current receivables						
Trade and other receivables		2,119			2,119	2,119
Derivative instruments	2		43	32	75	75
Cash and cash equivalents		1,373			1,373	1,373
Total financial assets		**3,492**	**49**	**50**	**3,590**	**3,590**
LIABILITIES						
Long-term liabilities						
Liabilities to credit institutions	2	3,261			3,261	3,265
Current liabilities						
Liabilities to credit institutions	2	2,242			2,242	2,242
Trade and other payables		6,391			6,391	6,391
Derivative instruments	2		12	117	129	129
Total financial liabilities		**11,894**	**12**	**117**	**12,023**	**12,027**

Boliden's financial instruments, which are reported at fair value in the Balance Sheet, are classified as level two in the Fair value hierarchy, with the exception of a small amount in other shares and participations that are classified as level three.

31.12.2018	Valuation hierarchy	Amortized cost	Fair value through profit or loss	Derivatives (hedge accounting)	Total reported value	Total fair value
ASSETS						
Financial assets						
Other shares and participations	3		18		18	18
Current assets						
Current receivables						
Trade and other receivables		1,864			1,864	1,864
Derivative instruments	2		51	103	154	154
Cash and cash equivalents		2,272			2,272	2,272
Total financial assets		**4,136**	**69**	**103**	**4,308**	**4,308**
LIABILITIES						
Long-term liabilities						
Liabilities to credit institutions	2	3,145			3,145	3,149
Current liabilities						
Liabilities to credit institutions	2	216			216	216
Trade and other payables		5,106			5,106	5,106
Derivative instruments	2		19	15	34	34
Total financial liabilities		**8,467**	**19**	**15**	**8,501**	**8,505**

Note 27 Financial derivative instruments and hedge accounting

Derivatives
Derivatives that are valued at fair value, and for which changes in the value are reported in net financial items, comprise currency futures and are not included in the hedge accounting.

Hedge accounting
Derivatives used in hedge accounting comprise derivatives valued at fair value included in fair value hedging or cash flow hedging. The derivatives comprise metals futures, currency futures and interest derivatives. The hedge relationship is identified and documented, as are Boliden's risk management and risk management strategy objectives for the hedge, see also "Risk management" in the Directors' Report on pages 56–59. An assessment of efficacy of the hedge is documented both when hedging commences and on an ongoing basis. The efficacy is assessed by means of an analysis of the economic correlation between the hedged item and hedging instrument, and by ensuring that the effect of the credit risk does not dominate changes in the value of underlying items and instruments. The hedge ratio for the hedge relationship is the same as in the actual hedge.

Fair value hedging (binding undertaking)
Changes in the value of financial derivatives used to hedge a binding undertaking are reported under the operating profit together with changes in the value of the asset or liability that the hedging is designed to counter. Parts of inventories constitute binding undertakings and are reported at market value as inventory value. Changes in the value of derivatives consequently effectively match the changes in value from hedged items in the Income Statement and Balance Sheet.

Cash flow hedging (forecast cash flows)
Hedge accounting is applied to financial derivatives that refer to the hedging of forecast flows. This means that the effective share of the unrealized market values is reported under Other comprehensive income up to the point in time when the hedged item, such as forecast metal sales, US dollar income and interest expenses, is realized and thus reported in the Income Statement. Realized profits/losses attributable to metal and currency derivatives are reported under net sales, while the profit/loss on interest derivatives is reported under net financial items. Any ineffective part of cash flow hedging is reported under net financial items.

Hedging of net investments
Hedge accounting is applied to the profit/loss on hedging in respect of net investments in overseas operations under Other comprehensive income. Any ineffective component of these hedges is reported under net financial items. In conjunction with the sale of overseas operations, associated hedging results are reported in the Income Statement, together with the translation effect of the net investment.

Offsetting of financial assets and liabilities
The offsetting of financial assets and liabilities is regulated by ISDA (International Swaps and Derivatives Association) agreements, which regulate both offsetting between contracted counterparties as part of operating activities and in conjunction with circumstances relating to breach of contract or early termination. See also the Risk management section for dealing with counterparty risk, pages 56–59.

	31.12.2019		31.12.2018	
Outstanding derivative instruments, SEK m	**Nominal amount**	**Fair value**	**Nominal amount**	**Fair value**
Transaction exposure (binding undertakings)[1)]				
Currency futures	–5,947	43	–3,842	47
Raw material derivatives	–1,482	–88	208	70
Transaction exposure (forecast cash flows)[1)]				
Currency futures	–434	–7	30	0
Interest derivatives	–1,480	16	–1,789	2
Total		**–36**		**120**

[1)] Find out more about the Group's transaction exposure and Risk management on page 57.

Hedge accounting, SEK m	**2019**	**2018**
Heading of fair value		
– Changes in value of hedging instruments in respect of binding undertakings	–835	–727
– Change in value of hedged item	835	727
Ineffectiveness of fair value hedging	–	–
Ineffectiveness of cash flow hedging	–	–
Ineffectiveness of hedging net investments in overseas operations	–	–
Total ineffectiveness	**0**	**0**

The effect of effective cash flow hedging with regard to Transaction exposure on the result for 2019 totals SEK 2 m (–4), which refers to interest swaps.

Offsetting of financial assets and liabilities

	31.12.2019	31.12.2018
Gross amount for financial assets	152	216
Amount offset in Balance Sheet	–59	–62
Net asset reported in Balance Sheet	93	154
Amount comprised by offsetting in conjunction with insolvency, etc.	–34	–24
Net asset	**60**	**130**

	31.12.2019	31.12.2018
Gross amount for financial liabilities	188	97
Amount offset in Balance Sheet	–59	–62
Net liability reported in Balance Sheet	129	34
Amount comprised by offsetting in conjunction with insolvency, etc.	–34	–24
Net debt	**96**	**10**

Note 28 Risk information

See the section entitled "Risk management" in the Directors' Report on pages 56–59 for a description of Boliden's financial risks. The amounts reported refer to the Group.

Note 29 Financial liabilities and maturity structure

ACCOUNTING PRINCIPLES

Financial liabilities primary comprise of liabilities to credit institutions and trade and other payables. The anticipated term of trade and other payables is short, and the value is consequently reported at a nominal amount in accordance with the amortized cost method as the amount is held to correspond to the fair value. Liabilities to credit institutions are initially valued at amounts received, less any set-up fees, and are then valued at amortized cost. Interest expenses are reported on a rolling basis in the Income Statement with the exception of the part included in the historical cost for property, plant and equipment. Capitalized set-up fees are reported directly against the loan liability to the extent that the loan agreement's underlying loan guarantee has been utilized, and are recognized in the Income Statement under Other financial expenses over the contractual term of the loan. If a loan agreement is terminated or otherwise ceases to apply at a point in time prior to the end of the original contractual term, capitalized set-up fees are recognized as an expense. If a current agreement is renegotiated during the contractual term, any additional fees in connection with the renegotiation are allocated over the remaining contractual term of the loans.

	Financial liabilities			Maturity structure [2]					
31.12.2019 SEK m	Currency	Interest[1], %	Reported amount	2020	2021	2022	2023	2024	2025+
Bilateral loans	EUR	0.77	1,503	169	107	105	333	332	494
Bilateral loans	SEK	1.75	1,166	17	585	9	9	9	602
Bonds[3]	SEK	1.50	1,250	516	11	11	11	756	
Commercial papers[3]	SEK	0.34	1,584	1,585					
Leasing, other			268	92	78	58	19	7	29
Trade and other payables			6,391	6,391					
Derivative instruments			129	129					
Total			**12,291**	**8,899**	**781**	**183**	**372**	**1,104**	**1,125**

	Financial liabilities			Maturity structure [2]					
31.12.2018 SEK m	Currency	Interest[1], %	Reported amount	2019	2020	2021	2022	2023	2024+
Bilateral loans	EUR	0.93	1,695	229	168	108	107	323	807
Bilateral loans	SEK	1.61	1,166	15	19	582	9	9	609
Bonds[3]	SEK	1.90	500	10	510				
Leasing, other			2	2					
Trade and other payables			5,106	5,106					
Derivative instruments			34	34					
Total			**8,503**	**5,396**	**697**	**690**	**116**	**332**	**1,416**

[1] Weighted interest including interest swaps.

[2] The duration analysis includes gross flows of loans and interest, including flows from interest swaps.

[3] Outstanding commercial papers and bonds are officially reported under the Group's Parent Company, Boliden AB.

Loan portfolio 31.12.2019

Boliden has a number of utilized long-term loans from Swedish, Nordic and European institutions which totalled SEK 2,669 m (2,861) and which mature between 2020 and 2026. Boliden's MTN programme with a framework of SEK 3,000 m, had SEK 750 m (0) outstanding on the closing day, which is due in 2024. A corporate bond for SEK 500 m issued on the Swedish capital market in 2014 matures in 2020. Boliden also has syndicated credit facilities totalling EUR 362 m and EUR 408 m that mature in 2022 and 2024, respectively. The utilized component of the syndicated credit facilities totalled SEK 0 m (0). SEK 1,585 m (0) of Boliden's commercial papers programme, with a framework of SEK 4,000 m, remained outstanding. The average term of the loan facilities was 3.4 years (3.5) and the debt portfolio's average interest rate was 1.1 % (1.3).

The fixed interest term of outstanding loans, including interest swaps entered into, totalled 1.1 years (0.9). The above maturity analysis includes interest flows from interest swaps. Boliden's current liquidity, in the form of cash and cash equivalents and unutilized credit facilities with a term in excess of one year, totalled SEK 7,165 m (9,964). The maturity structure for the financial liabilities, including interest payments and accrued interest on derivatives, includes the undiscounted cash flows that derive from the Group's liabilities, based on the contracted remaining durations. Loan maturity has been calculated at the applicable exchange rate in conjunction with the year-end accounts. Interest maturity, including interest swaps, has been calculated on the basis of the applicable closing interest rates.

Note 30 Other current liabilities

	31.12.2019	31.12.2018
Accrued salaries and social security expenses	953	879
Accrued interest expenses	7	0
Other accrued costs and prepaid income	1,869	1,337
Other operating liabilities	413	374
	3,242	**2,590**

Note 31 Pledged assets and contingent liabilities

ACCOUNTING PRINCIPLES

A contingent liability is a potential undertaking that derives from events which have occurred and whose incidence is only confirmed by one or more uncertain future events. A contingent liability can also be an existing undertaking that has not been reported in the Balance Sheet because it is unlikely that an outflow of resources will be required or because the size of the undertaking cannot be reliably calculated.

	The Group		The Parent Company	
	2019	2018	2019	2018
Pledged assets				
For own liabilities and provisions	None	None	None	None
Contingent liabilities				
Parent Company sureties	–	–	5,575	3,437
Other sureties and guarantees	5,154	3,769	1	1
Pension liabilities	7	6	–	–
Agreed residual values according to lease contracts	12	11	–	–
	5,173	**3,786**	**5,576**	**3,438**

The Parent Company sureties refer to guarantees issued for subsidiaries. SEK 5,575 m (3,437) refers to Parent Company sureties for external financial borrowing. Parent Company sureties in the above table have been booked in the utilized amounts. Guarantees in respect of unutilized credits total SEK 8,034 m (7,912).

Other surety undertakings and guarantees refer primarily to counter undertakings issued by Boliden to banks or other lenders. These have, in turn, with regard to states or authorities, guaranteed Boliden's proper completion of reclamation undertakings.

In addition to that specified above under the heading of contingent liabilities and the items included in the financial information, the possibility exists that the Group may incur environment-related contingent liabilities or contingent liabilities attributable to legal proceedings and claims, which cannot be calculated at present but which may, in future, entail costs or investments.

Legal proceedings

Overview

Boliden may occasionally be involved in disputes and legal proceedings arising in the course of its operations. These disputes and legal proceedings are not expected, either individually or collectively, to have any significant negative impact on Boliden's operating profits, profitability or financial position, over and above that detailed below.

Disputes

Disputes arising from the dam accident in Spain in the late 1990s

In April 1998, a dam accident occurred in a tailings pond at the Los Frailes mine in Spain, which was then owned by Boliden's subsidiary, Boliden Apirsa S.L. ("Apirsa"). Following the dam accident, preliminary investigations in a criminal case were initiated against Apirsa and its representatives. The preliminary investigation was shut down and it was determined that the accident had been caused by design and construction errors in the dam, not by Apirsa's operations. Despite the outcome of the criminal proceedings, the Spanish Ministry of the Environment declared Apirsa liable to pay an amount corresponding to approximately EUR 45 m in clean-up costs, damages and fines. This resulted, in January 2005, in Apirsa initiating insolvency proceedings in order to ensure a coordinated and orderly closure of the company. The bankruptcy administrators have, within the framework of the insolvency proceedings, requested that Apirsa's parent company, Boliden BV, together with Boliden Mineral AB and Boliden AB, be held liable for Apirsa's shortfall in an amount which, according to the bankruptcy administrators, totals just over EUR 142 m, including a disputed claim of just over EUR 89 m which the local government (Junta de Andalucía) believes it is owed. This claim has been in dispute since 2002, when the local government sued Apirsa in its capacity as the owner and operator of the mine at the time of accident, and Boliden BV and Boliden AB in their capacity as the direct and indirect owners of Apirsa. The local government's case was processed in several different courts and in various bodies, but was deemed invalid on formal grounds. Finally, the Supreme Administrative Court ruled that the matter should be heard in the civil court. The local government accordingly brought a suit against the above companies in the Seville District Court in 2015. The suit is the same as that brought back in 2002 and the local government is demanding compensation for the costs it claims to have incurred in conjunction with the clean-up after the dam breach accident. All three defendants have contested the plaintiff's suit and the case has been dormant since then. The winding up of Apirsa has also been on hold for several years, pending the hearing of the local government's claim. The companies that were responsible for the design and construction of the dams, and against which Apirsa had previously brought suits and lost, have now submitted claims against Apirsa, seeking compensation for their legal costs. It is currently not possible to assess with any reasonable degree of certainty whether the claims for legal costs can be brought against any Boliden company other than Apirsa.

Based on the legal advice and opinions given by the company's Spanish legal counsel, Boliden's overall view is that the company will not suffer any substantial financial loss as a result of the legal proceedings described. The company has made no provision, pending a final ruling.

Lawsuit arising due to exports to Chile in the 1980s

In 2013, a suit was brought against Boliden by a Swedish limited partnership, Arica Victims KB, claiming damages for the export of smelter sludge from the Rönnskär smelter between 1984 and 1985 to a company in Chile. Boliden won the dispute both in the district court and in the Court of Appeal, and the limited liability partnership was not granted leave to appeal to the Supreme Court.

Boliden Kevitsa Oy's tax assessment increased for the years 2012–2016

The Finnish tax authorities have increased Boliden Kevitsa Oy's tax assessment for the years from 2012 to 2016, which would result in an increase in tax expenses of EUR 29 m. The increased assessment is attributable to the period prior to Kevitsa's acquisition by Boliden. The decision has been appealed by Boliden. In accordance with the provisions of the acquisition agreement, Boliden has requested that the seller, First Quantum Minerals FQM, should indemnify Boliden for any harm that Boliden may incur as a result of the increased tax assessment. Based on these circumstances, no provision has been made in the accounts.

Note 32 Events after 31 December 2019

Closure Commenced of Kylylahti

The unions concerned were invited on 13 February to discussions concerning the closure of the Kylylahti mine during the autumn of 2020. The mine is proceeding towards its end of life and as of 31 December 2019, only 0.5 Mtonnes of reserves remained. Boliden's ambition is to offer as many of Kylylahti's employees as possible jobs at other units within Boliden. Exploration in the mine's immediate vicinity continues, and the mine's concentrator will therefore be put into care and maintenance. Furthermore, an investigation is under way concerning the possibility of extracting the cobalt found in the mine's concentrator tailings dam.

Proposed allocation of profits

The Board's proposed allocation of profits for 2019 and statement in accordance with the Swedish Companies Act, 18:4

Boliden's dividend policy stipulates that approximately one-third of the profit after tax shall be disbursed in the form of dividends. The Board of Directors proposes that the Annual General Meeting approve payment of a dividend of SEK 7.00 (8.75) per share or a total of SEK 1,915 m (2,393), corresponding to 33.1% of the profit after tax for 2019. The Parent Company's non-restricted equity totals SEK 12,130 m and the Group's total equity is SEK 41,429 m. The non-restricted equity in the Parent Company and the Group will total SEK 10,215 m and SEK 39,514 m, respectively, after payment of the proposed dividend to the shareholders. The Board has taken the cyclical nature of the industry and the risks associated with the operations into account in its dividend proposal.

The remaining non-restricted equity in the Parent Company will be carried forward.

The Annual Accounts have been prepared in accordance with generally accepted accounting principles in Sweden and the Consolidated Accounts have been prepared in accordance with EU-approved International Financial Reporting Standards, IFRS.

The Annual Accounts and the Consolidated Accounts give a true and fair view of the Parent Company's and the Group's financial position and results of operations.

The Directors' Report for the Group and the Parent Company gives a true and fair overview of the Group's and the Parent Company's operations, position and results, and describes the material risks and uncertainties faced by the Parent Company and the companies that make up the Group.

Stockholm, 13 February 2020

Anders Ullberg
Chairman

Marie Berglund
Board member

Tom Erixon
Board member

Michael G:son Löw
Board member

Perttu Louhiluoto
Board member

Elisabeth Nilsson
Board member

Pia Rudengren
Board member

Marie Holmberg
Employee representative

Kenneth Ståhl
Employee representative

Cathrin Öderyd
Employee representative

Mikael Staffas
President and CEO

Our Auditor's Report was submitted on 13 February 2020
Deloitte AB

Jan Berntsson
Authorized Public Accountant

Auditor's report

To the general meeting of the shareholders of Boliden AB (publ) corporate identity number 556051-4142

REPORT ON THE ANNUAL ACCOUNTS AND CONSOLIDATED ACCOUNTS

Opinions

We have audited the annual accounts and consolidated accounts of Boliden AB (publ) for the financial year January 1, 2019 to December 31, 2019 except for the corporate governance statement on pages 60-69 and the statutory sustainability report on pages 6-9, 24-25, 30-36, 38-41, 56-57 and 59. The annual accounts and consolidated accounts of the company are included on pages 6-9, 18-20, 22-26, 28-36, 38-47 and 56-101 in this document.

In our opinion, the annual accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of parent company as of December 31, 2019 and its financial performance and cash flow for the year then ended in accordance with the Annual Accounts Act. The consolidated accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the group as of December 31, 2019 and its financial performance and cash flow for the year then ended in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, and the Annual Accounts Act. Our opinions do not cover the corporate governance statement on pages 60-69 and the statutory sustainability report on pages 6-9, 24-25, 30-36, 38-41, 56-57 and 59. The statutory administration report is consistent with the other parts of the annual accounts and consolidated accounts.

We therefore recommend that the general meeting of shareholders adopts the income statement and balance sheet for the parent company and the group.

Our opinions in this report on the the annual accounts and consolidated accounts are consistent with the content of the additional report that has been submitted to the parent company's audit committee in accordance with the Audit Regulation (537/2014) Article 11.

Basis for Opinions

We conducted our audit in accordance with International Standards on Auditing (ISA) and generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the Auditor's Responsibilities section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements. This includes that, based on the best of our knowledge and belief, no prohibited services referred to in the Audit Regulation (537/2014) Article 5.1 have been provided to the audited company or, where applicable, its parent company or its controlled companies within the EU.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

Key Audit Matters

Key audit matters of the audit are those matters that, in our professional judgment, were of most significance in our audit of the annual accounts and consolidated accounts of the current period. These matters were addressed in the context of our audit of, and in forming our opinion thereon, the annual accounts and consolidated accounts as a whole, but we do not provide a separate opinion on these matters.

Recognition of revenues from sales of metals at the appropriate price and in the correct period

The group's sales of metals are to a large extent priced in US dollars and sales are often made to predetermined terms. Individual sales transactions may represent significant amounts. Contractual terms are hedged for variations in metal prices and exchange rates. Taken together, this requires good practices to ensure that revenues are recognized at agreed terms adjusted for the effects from hedging and that revenues are recognized in the correct period.

For the group's accounting principles for revenue recognition and for the group's revenues by geographical area and product group please refer to Note 4.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of the group's accounting policy for revenue recognition for compliance with IFRS,
- evaluating the group's controls for recognizing revenues at appropriate prices and in the correct accounting period,
- analysis of revenues by metal based on sales volumes, metal prices and exchange rates, and
- on a sample basis testing of sales transactions against sales contracts, invoices and shipping documents to assess that revenues have been recognized at appropriate prices and in the correct accounting period.

Valuation of inventory

The group's inventory consists primarily of metal concentrate, materials tied up in the production process of the smelters and finished metal. The group's accounting and valuation of inventory is complex and requires judgment about stock levels, metal content, metal prices, exchange rates and internal profits.

For the group's accounting principles for valuation of inventory and for a breakdown of the group's inventory, please refer to Note 2 and 19.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of the group's valuation policy for inventory and its compliance with IFRS,
- assessing the group's controls for inventory valuation,
- observations of physical inventory counts,
- on a sample basis testing that the inventory has been valued to current metal prices and exchange rates,
- review of the process inventory revaluation and eliminations for intragroup profits in inventory.

Accounting and valuation of financial instruments

The group is exposed to changes in metal prices, exchange rates and interest rates. To reduce its exposure in larger investment projects and in contracted purchase and sales commitments the group uses various types of financial instruments, including derivatives. The group also manages its exposure to changes in interest rates by reducing or extending the interest duration period via interest rate swaps. The accounting for financial instruments is complex and may have significant impact on the group's earnings and financial position.

For the group's financial risks and management of these risks, please refer to page 57-59 and to Note 26, 27 and 29 for the group's principles for the valuation of financial instruments and for the group's financial derivatives.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of the group's financial policy and hedging strategies,
- review of hedging activities to ensure that these have been properly authorized and accounted for in accordance with IFRS, and
- review of the relevance of market data and methodologies used to determine fair value of derivative contracts.

Capitalization and depreciation of deferred mining costs

In conjunction with excavation of waste rock and production of ore in open pit mines, the costs of waste rock removal, which improves access to the ore body are capitalized. Deferred mining costs are depreciated per push-back and the depreciation is based on the metal content in relation to estimated metal content for the entire push-back. Both the initial capitalization and the depreciation rate are dependent on planned production and estimated mineral reserves and, as a consequence among other things, expected future metal prices. Hence, the carrying value and depreciation of deferred mining costs are dependent on a number of complex assumptions and estimates.

For the group's accounting principles related to deferred mining and for the group's investments and depreciation of deferred mining costs, please refer to Note 14.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of accounting policy for deferred mining costs for compliance with IFRS,
- review of model used for capitalization and depreciation of deferred mining costs against production costs and production volumes, and
- analytical review of capitalization and depreciation in relation to production costs and production volumes.

Provisions for reclamation costs

The group has commitments for reclamation of closed mines and for reclamation costs that are expected to arise for mines when the mine operations are decommissioned. The provision for these commitments is judgmental and dependent on several factors including cost estimates for different reclamation measures, life of mine, regulatory decisions, future inflation and discount rates. Any changes in these estimates and assumptions may have a significant impact on the group's earnings and financial position.

For the group's accounting principles for reclamation provisions and for this year's change in capitalized reclamation costs, and for the group's reclamation provisions, please refer to Note 2, 14 and 25.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of accounting policy for reclamation provisions for compliance with IFRS,
- evaluating the group's controls to account for reclamation provisions, and
- review of assumptions used to estimate the reclamation provisions for consistency with approved production plans, life of mines expectancies, and current financial conditions (inflation and interest rates).

Valuation of intangible and tangible assets

The group's intangible and tangible assets represent significant amounts. Impairment testing of these assets is based on production plans, which in turn are based on assumptions about future metal prices, treatment and refining charges, and exchange rates. Changes in market prices for metals, treatment and refining charges, and exchange rates have a significant impact on the group's future cash flows and thus the estimated recoverable value of intangible and tangible assets and any impairment needs.

For the group's principles to prepare impairment tests for intangible and tangible assets and for significant assumptions applied in the impairment tests, please refer to Note 2, 13 and 14.

Our audit procedures

Our audit procedures included, but were not limited to:

- review of the group's process and principles for preparing impairment tests for compliance with IFRS,
- evaluation of key assumptions such as estimated life of mines, production plans, metal prices, treatment and refining charges, and exchange rates and the sensitivity in these assumptions to any changes, and
- review of the model used to discount future cash flows for arithmetical correctness.

Other information than the annual accounts and consolidated accounts

This document also contains other information than the annual accounts and consolidated accounts and is found on pages 1-5, 10-17, 21, 27, 37, 48-55 and 106-121. The Board of Directors and the Managing Director are responsible for this other information.

Our opinion on the annual accounts and consolidated accounts does not cover this other information and we do not express any form of assurance conclusion regarding this other information.

In connection with our audit of the annual accounts and consolidated accounts, our responsibility is to read the information identified above and consider whether the information is materially inconsistent with the annual accounts and consolidated accounts. In this procedure we also take into account our knowledge otherwise obtained in the audit and assess whether the information otherwise appears to be materially misstated.

If we, based on the work performed concerning this information, conclude that there is a material misstatement of this

other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and the Managing Director

The Board of Directors and the Managing Director are responsible for the preparation of the annual accounts and consolidated accounts and that they give a fair presentation in accordance with the Annual Accounts Act and, concerning the consolidated accounts, in accordance with IFRS as adopted by the EU. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of annual accounts and consolidated accounts that are free from material misstatement, whether due to fraud or error.

In preparing the annual accounts and consolidated accounts, The Board of Directors and the Managing Director are responsible for the assessment of the company's and the group's ability to continue as a going concern. They disclose, as applicable, matters related to going concern and using the going concern basis of accounting. The going concern basis of accounting is however not applied if the Board of Directors and the Managing Director intends to liquidate the company, to cease operations, or has no realistic alternative but to do so.

The Audit Committee shall, without prejudice to the Board of Director's responsibilities and tasks in general, among other things oversee the company's financial reporting process.

Auditor's responsibility

Our objectives are to obtain reasonable assurance about whether the annual accounts and consolidated accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual accounts and consolidated accounts.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual accounts and consolidated accounts, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of the company's internal control relevant to our audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors and the Managing Director.
- Conclude on the appropriateness of the Board of Directors' and the Managing Director's use of the going concern basis of accounting in preparing the annual accounts and consolidated accounts. We also draw a conclusion, based on the audit evidence obtained, as to whether any material uncertainty exists related to events or conditions that may cast significant doubt on the company's and the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the annual accounts and consolidated accounts or, if such disclosures are inadequate, to modify our opinion about the annual accounts and consolidated accounts. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company and a group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the annual accounts and consolidated accounts, including the disclosures, and whether the annual accounts and consolidated accounts represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated accounts. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.

We must inform the Board of Directors of, among other matters, the planned scope and timing of the audit. We must also inform of significant audit findings during our audit, including any significant deficiencies in internal control that we identified.

We must also provide the Board of Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors, we determine those matters that were of most significance in the audit of the annual accounts and consolidated accounts, including the most important assessed risks for material misstatement, and are therefore the key audit matters. We describe these matters in the auditor's report unless law or regulation precludes disclosure about the matter.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Opinions

In addition to our audit of the annual accounts and consolidated accounts, we have also audited the administration of the Board of Directors and the Managing Director of Boliden AB (publ) for the financial year January 1, 2019 to December 31, 2019 and the proposed appropriations of the company's profit or loss.

We recommend to the general meeting of shareholders that the profit to be appropriated in accordance with the proposal in the statutory administration report and that the members of the Board of Directors and the Managing Director be discharged from liability for the financial year.

Basis for Opinions
We conducted the audit in accordance with generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the Auditor's Responsibilities section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

Responsibilities of the Board of Directors and the Managing Director
The Board of Directors is responsible for the proposal for appropriations of the company's profit or loss. At the proposal of a dividend, this includes an assessment of whether the dividend is justifiable considering the requirements which the company's and the group's type of operations, size and risks place on the size of the parent company's and the group's equity, consolidation requirements, liquidity and position in general.

The Board of Directors is responsible for the company's organization and the administration of the company's affairs. This includes among other things continuous assessment of the company's and the group's financial situation and ensuring that the company's organization is designed so that the accounting, management of assets and the company's financial affairs otherwise are controlled in a reassuring manner. The Managing Director shall manage the ongoing administration according to the Board of Directors' guidelines and instructions and among other matters take measures that are necessary to fulfill the company's accounting in accordance with law and handle the management of assets in a reassuring manner.

Auditor's responsibility
Our objective concerning the audit of the administration, and thereby our opinion about discharge from liability, is to obtain audit evidence to assess with a reasonable degree of assurance whether any member of the Board of Directors or the Managing Director in any material respect:

- has undertaken any action or been guilty of any omission which can give rise to liability to the company, or
- in any other way has acted in contravention of the Companies Act, the Annual Accounts Act or the Articles of Association.

Our objective concerning the audit of the proposed appropriations of the company's profit or loss, and thereby our opinion about this, is to assess with reasonable degree of assurance whether the proposal is in accordance with the Companies Act.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted auditing standards in Sweden will always detect actions or omissions that can give rise to liability to the company, or that the proposed appropriations of the company's profit or loss are not in accordance with the Companies Act.

As part of an audit in accordance with generally accepted auditing standards in Sweden, we exercise professional judgment and maintain professional scepticism throughout the audit. The examination of the administration and the proposed appropriations of the company's profit or loss is based primarily on the audit of the accounts. Additional audit procedures performed are based on our professional judgment with starting point in risk and materiality. This means that we focus the examination on such actions, areas and relationships that are material for the operations and where deviations and violations would have particular importance for the company's situation. We examine and test decisions undertaken, support for decisions, actions taken and other circumstances that are relevant to our opinion concerning discharge from liability. As a basis for our opinion on the Board of Directors' proposed appropriations of the company's profit or loss we examined the Board of Directors' reasoned statement and a selection of supporting evidence in order to be able to assess whether the proposal is in accordance with the Companies Act.

THE AUDITOR'S EXAMINATION OF THE CORPORATE GOVERNANCE STATEMENT
The Board of Directors is responsible for that the corporate governance statement on pages 60-69 has been prepared in accordance with the Annual Accounts Act.

Our examination of the corporate governance statement is conducted in accordance with FAR´s auditing standard RevU 16 The auditor´s examination of the corporate governance statement. This means that our examination of the corporate governance statement is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinions.

A corporate governance statement has been prepared. Disclosures in accordance with chapter 6 section 6 the second paragraph points 2-6 of the Annual Accounts Act and chapter 7 section 31 the second paragraph the same law are consistent with the other parts of the annual accounts and consolidated accounts and are in accordance with the Annual Accounts Act.

AUDITOR´S REPORT ON THE STATUTORY SUSTAINABILITY REPORT
It is the board of directors who is responsible for the statutory sustainability report for the year 2019 on pages 6-9, 24-25, 30-36, 38-41, 56-57 and 59 and that it has been prepared in accordance with the Annual Accounts Act.

The scope of the audit
Our examination has been conducted in accordance with FAR's auditing standard RevR 12 The auditor´s opinion regarding the statutory sustainability report. This means that our examination of the statutory sustainability report is substantially different and less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinion.

A statutory sustainability report has been prepared. Deloitte AB, was appointed auditor of Boliden AB by the general meeting of the shareholders on the May 3, 2019 and has been the company's auditor since May 5, 2015.

Stockholm, February 13, 2020
Deloitte AB

Jan Berntsson
Authorized Public Accountant

Mineral Resources and Mineral Reserves

Mineral Resources and Mineral Reserves are the foundation for the future viability of a mining company's operations. They form the basis for the mines' long-term plans and constitute underlying data for many of the company's major investments. Reserves are reduced every year through mining activities, and new additions are vital to the viability of the operations.

Garpenberg, Aitik and Kevitsa have Mineral Resources and Mineral Reserves sufficient to secure production for many years to come. The situation in the Boliden Area is more complex. There are now 3 mines in operation, after the Maurliden mine was mined out at the start of 2019. Other mines in the Boliden Area have secured lifespans of between 6 and 10 years. Kylylahti will be mined out and closed during 2020.

Exploration work has continued to be successful in Garpenberg and Tara in 2019, with significant additions to Mineral Resources. In Kristineberg, drifts have been driven towards the mineralization in Rävliden in 2019, which is now being investigated with drilling. In Tara, pilot drifts are still being driven towards the Tara Deep mineralization, approximately 2 km from the mine.

Boliden will work to ensure optimal resource and materials handling at every stage of the value chain, and the responsible conversion of assets in the form of Mineral Resources and Mineral Reserves is an important component of this work. We consequently follow up on our Mineral Resources and Mineral Reserves carefully and produce an annual summary. The estimations of Mineral Resources and Mineral Reserves are always associated with a degree of uncertainty as to the geological basis and due to sensitivity to the pricing and cost conditions used.

Mineral Resources and Mineral Reserves, 2019

Boliden follows the recommendations of the Swedish Association of Mines, Mineral and Metal Producers (SveMin) for reporting exploration results, Mineral Resources and Mineral Reserves and strives to report in accordance with the standard of the Pan-European Reserves and Resources Reporting Committee (PERC). The PERC standard is an internationally recognized reporting standard that has been recognized by the mining associations in Sweden (SveMin), Finland (FinnMin) and Norway (Norsk Bergindustri) for exploration and mining companies in the Nordic countries.

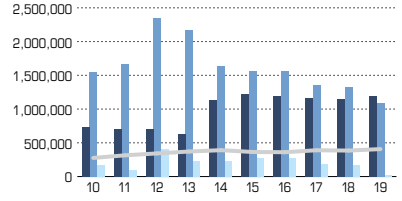
About the classification

Mineral Resources and Mineral Reserves are estimated separately and broken down into different categories. Boliden's Mineral Reserves are not subsidiary amounts of the Mineral Resources, and when a Mineral Resource is upgraded to a Mineral Reserves, the quantity is eliminated from the Mineral Resource. Mineral Resources and Mineral Reserves are a concentration of minerals in the bedrock. For Mineral Resources, these must be in such a form, quality and quantity that there are reasonable prospects for eventual economic extraction. To be classified as a Mineral Reserve, appropriate valuations and studies must have been carried out, showing that extraction and refining can be carried out in accordance with the company's profitability requirements and that take into account such factors as waste rock dilution, ore losses, pillar offsets and process recovery rates.

Inferred Mineral Resource

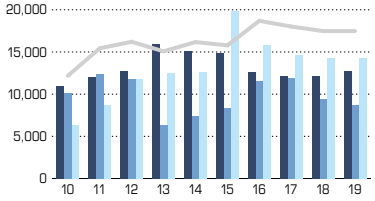
An Inferred Mineral Resource is that part of a Mineral Resource for which

Aitik



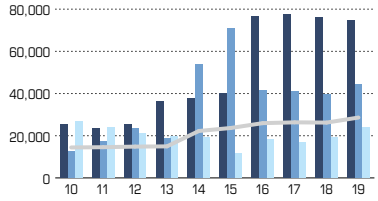
Decline in Mineral Resources and small changes in Mineral Reserves.

The Boliden Area



Decline in Mineral Resources and small changes in Mineral Reserves.

Garpenberg



Increase in Mineral Resources but decline in Mineral Reserves.

● Proven/Probable Mineral Reserve ● Measured/Indicated Mineral Resource ● Inferred Mineral Resource — Production ×10 All values are shown in ktonnes.

quantity, shape, grade or quality can be estimated with a low level of certainty. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a low level of certainty, but it is reasonable to assume that the majority of an Inferred Mineral Resource could be upgraded through continued work.

Indicated Mineral Resource

An Indicated Mineral Resource is a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are sufficiently well known to allow detailed mine planning and final technical profitability studies. Geological evidence derived from exploration, sampling and testing, carried out using appropriate technology, is sufficient to assume geological and grade or quality continuity.

Measured Mineral Resource

A Measured Mineral Resource is a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are sufficiently well known to allow detailed mine planning and final technical profitability studies. Geological evidence derived from detailed and reliable exploration, sampling and testing is sufficient to confirm geological and grade or quality continuity.

Probable Mineral Reserve

A Probable Mineral Reserve satisfies the requirements for indicated and, under certain circumstances, Measured Mineral Resources, where technical explorations and profitability studies demonstrate that it is technically and economically feasible to mine and refine the deposit on the basis of the company's profitability requirements.

Proven Mineral Reserve

A Proven Mineral Reserve satisfies the requirements for Measured Mineral Resources, where technical explorations and profitability studies demonstrate that it is technically and economically feasible to mine and refine the deposit on the basis of the company's profitability requirements.

Aitik

There is no large-scale exploration underway in Aitik at present. Work is continuing, however, on preparing the Liikavaara deposit, approximately 3 km northwest of Aitik, for mining. Exploration and evaluation are also under way at the Nautanen deposit, approximately 15 km north of Aitik. Mineral Reserves in Aitik, including Liikavaara, have increased by 40 Mtonnes (3%), while Mineral Resources have decreased by 380 Mtonnes (26%). In 2019, 41 Mtonnes of ore were concentrated. The Mineral Resources in the open pit mine are limited in terms of what is considered reasonable for profitable mining in the future. This year, the economic conditions for the Mineral Resource have changed, primarily in the form of higher costs for mining and concentration than previously. This is the main reason for the decrease in Mineral Resources.

The Boliden Area

In the Boliden Area, the Maurliden mine was closed as planned at the start of 2019. The drift towards the Rävliden mineralization outside Kristineberg was completed in 2019 and underground drilling is underway. The Mineral Reserve increased in Renström and Kankberg, but decreased in Kristineberg. The area as a whole saw an increase in mineral reserves of 600 ktonnes (5%) and a decrease in Mineral Resources of 700 ktonnes (30%). In the Boliden Area, a total of 1.8 Mtonnes of ore were concentrated in 2019.

Garpenberg

Garpenberg has good forward planning in terms of Mineral Resources and Mineral Reserves. Exploration and studies have proved successful during the year, with Mineral Resources increasing by 9.5 Mtonnes (16%). The Mineral Reserve has decreased by 1.3 Mtonnes (2%), which is around half of what was mined (2.9 Mtonnes) in 2019.

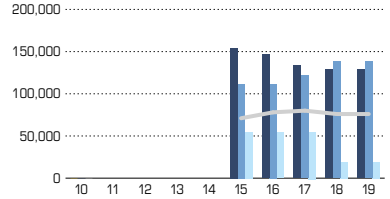
Kevitsa

In Kevitsa, the Mineral Reserve has increased by 11.6 Mtonnes, despite the fact that 7.5 Mtonnes were mined in 2019. Only minor changes in the Mineral Resources have been noted. The nickel grade has increased slightly, while the copper grade has decreased by roughly the same amount in the Mineral Reserve. Since the Mineral Reserves were last calculated, the geological base has been updated and minor adjustments have been made to the design of the mine.

Kylylahti

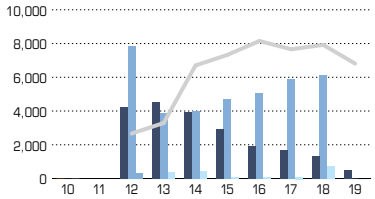
In Kylylahti, 700 ktonnes were mined during 2019. Negotiations regarding the shutting down of operations began in February 2020, with closure anticipated in the autumn of this year. This also means the remaining Mineral Resources will not be utilized.

Kevitsa



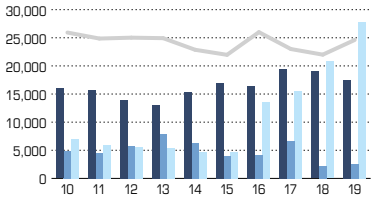
Small changes in Mineral Resources and increase in Mineral Reserve.

Kylylahti



Small remaining Mineral Reserve.

Tara



Increase in Mineral Resources but marginal decline in Mineral Reserves.

● Proven/Probable Mineral Reserve ● Measured/Indicated Mineral Resource ● Inferred Mineral Resource — Production ×10 All values are shown in ktonnes.

Tara

In Tara, surveys of the Tara Deep mineralization are continuing, with drilling from above ground, while drifting towards Tara Deep is also ongoing at a depth of around 1,000 meters. The drilling from above ground has been successful and the quantity in Tara Deep is now estimated at 22 Mtonnes of inferred Mineral Resources, compared with 18 Mtonnes in 2018, which also means an increase in Tara's total Mineral Resources. At the same time, work has continued on improving the geological models for the ore lenses and the design of the stopes in the Tara mine. The Mineral Reserve has nevertheless reduced slightly, from 19 Mtonnes to 17.4 Mtonnes, with the concentration of 2.5 Mtonnes in 2019.

Supplementary information on mineral resources and mineral reserves

Supplementary information in the form of a summary report per mine and project is available on Boliden's website under Operations – Exploration – Mineral Reserves and Mineral Resources.

Regulations, codes and competent persons

Boliden follows the recommendations of the Swedish Association of Mines, Mineral and Metal Producers (SveMin) for reporting exploration results, Mineral Resources and Mineral Reserves and strives to report in accordance with the Pan-European Reserves and Resources Reporting Committee (PERC). The PERC standard includes clearer demands with regard to documentation and the competent persons who are to evaluate the information reported by the companies. The transition to the PERC standard will be an ongoing process during a transitional period that allows companies time to adjust to using the PERC standard. The reports here have, as far as possible, been compiled in accordance with the PERC standard, but do not claim to be completely in accordance with the specified regulations.

All summary reports for Mineral Resources and Mineral Reserves per project and mine have been reviewed and approved by the competent persons presented in the respective reports. This summary of Mineral Resources and Mineral Reserves has been reviewed and approved by Gunnar Agmalm, Competent Person and Head of Ore Reserves and Project Evaluation at Boliden, who is a member of The Australasian Institute of Mining and Metallurgy (AusIMM) and The Fennoscandian Association for Metals and Minerals Professionals (FAMMP), which are approved organizations for competent persons according to PERC.

February 2020

Gunnar Agmalm
Competent Person

Planning prices	Long-term prices 2019	Change since 2018
Copper	USD 6,600/tonne	
Zinc	USD 2,400/tonne	
Lead	USD 2,100/tonne	
Gold	USD 1,200/troy. oz.	
Silver	USD 17/troy. oz.	
Molybdenum	USD 8/lb	
Nickel	USD 16,000/ tonne	
Palladium	USD 1,000/troy. oz.	
Platinum	USD 1,000/troy. oz.	
Cobalt	USD 20/lb	–5
Tellurium	USD 30/kg	
USD/SEK	8.0	+0.5
EUR/SEK	9.35	+0.5
EUR/USD	1.17	–0.01

Mineral Reserves, 31 December 2019

		Quantity, ktonnes		2019									
		2019	2018	Au g/t	Ag g/t	Cu %	Zn %	Pb %	Ni[1] %	Co[1] %	Pt g/t	Pd g/t	Te g/t
Aitik	**Proven**	**726,000**	**787,000**	**0.15**	**1.2**	**0.22**							
	Probable	**461,000**	**361,000**	**0.14**	**1.3**	**0.23**							
The Boliden Area													
Sulphide mineralizations													
Kristineberg	Proven	120	10	1.0	34	0.4	6.7	0.6					
	Probable	3,530	4,280	0.5	35	0.6	5.4	0.3					
Renström	Proven	300	340	2.5	116	0.5	6.2	1.0					
	Probable	3,690	3,180	2.0	111	0.4	5.7	1.1					
Total	**Proven**	**430**	**420**	**2.1**	**92**	**0.5**	**6.4**	**0.9**					
Sulphide mineralizations	**Probable**	**7,200**	**7,500**	**1.3**	**74**	**0.5**	**5.5**	**0.7**					
Gold mineralizations													
Kankberg	**Proven**	**3,110**	**2,720**	**3.3**	**11**								**179**
	Probable	**1,930**	**1,510**	**3.5**	**6**								**135**
Garpenberg	**Proven**	**21,000**	**22,800**	**0.24**	**99**	**0.04**	**3.5**	**1.4**					
	Probable	**53,800**	**53,400**	**0.34**	**95**	**0.05**	**2.9**	**1.4**					
Kevitsa	**Proven**	**62,300**	**62,500**	**0.10**		**0.33**			**0.25**	**0.010**	**0.19**	**0.12**	
	Probable	**78,000**	**66,100**	**0.11**		**0.31**			**0.23**	**0.010**	**0.24**	**0.16**	
Kylylahti	**Proven**	**400**	**800**	**1.1**		**0.7**	**0.3**		**0.24**	**0.18**			
	Probable	**100**	**500**	**1.8**		**0.3**	**0.1**		**0.27**	**0.10**			
Tara	**Proven**	**1,100**	**1,600**				**5.3**	**2.5**					
	Probable	**16,300**	**17,400**				**6.1**	**1.5**					

[1] Kevitsa reports sulphide-bound Ni and Co. Figures may be rounded up or down.

Mineral Resources, 31 December 2019

		Quantity, ktonnes		2019										
		2019	2018	Au g/t	Ag g/t	Cu %	Zn %	Pb %	Ni[1] %	Co[1] %	Pt g/t	Pd g/t	Te[2] g/t	Mo g/t
Aitik														
Aitik	**Measured**	**310,000**	**204,000**	**0.07**	**0.6**	**0.15**								
	Indicated	**782,000**	**1,127,000**	**0.10**	**0.8**	**0.17**								
	Inferred	**28,000**	**175,000**	**0.14**	**1.0**	**0.19**								
Nautanen	**Measured**													
	Indicated	**8,200**	**8,200**	**0.9**	**5**	**1.7**								**86**
	Inferred	**7,500**	**7,500**	**0.6**	**7**	**1.5**								**81**
The Boliden Area														
Sulphide mineralizations														
Kristineberg	Measured	50	50	0.7	45	1.3	4.2	0.2						
	Indicated	5,190	5,210	0.4	65	0.9	4.9	0.5						
	Inferred	6,120	5,950	0.4	57	0.9	2.9	0.4						
Petiknäs N	Measured													
	Indicated	360	310	8.1	72	1.6	2.8	0.3						
	Inferred	1,710	1,920	4.4	54	0.9	2.1	0.3						
Renström	Measured													
	Indicated	1,160	1,890	2.1	111	0.4	4.8	1.0						
	Inferred	1,510	1,550	2.2	133	1.0	9.3	1.6						
Total *Sulphide mineralizations*	**Measured**	**50**		**0.7**	**45**	**1.3**	**4.2**	**0.2**						
	Indicated	**6,700**	**7,400**	**1.1**	**73**	**0.9**	**4.8**	**0.6**						
	Inferred	**9,300**	**9,400**	**1.4**	**69**	**0.9**	**3.8**	**0.5**						
Gold mineralizations														
Kankberg	Measured	200	260	3.5	8							121		
	Indicated	670	600	4.0	8							162		
	Inferred	1,460	1,390	3.9	7							161		
Älgträsk	Measured													
	Indicated	1,070	1,070	2.8	5									
	Inferred	3,520	3,520	2.0	4									
Total *Gold mineralizations*	**Measured**	**200**	**260**	**3.5**	**8**									
	Indicated	**1,700**	**1,700**	**3.2**	**6**									
	Inferred	**5,000**	**4,900**	**2.5**	**4**									
Garpenberg	**Measured**	**4,300**	**4,400**	**0.31**	**100**	**0.06**	**3.3**	**1.6**						
	Indicated	**40,000**	**35,400**	**0.35**	**89**	**0.05**	**2.7**	**1.3**						
	Inferred	**24,100**	**19,100**	**0.43**	**59**	**0.07**	**2.6**	**1.5**						
Kevitsa	**Measured**	**26,500**	**23,600**	**0.08**		**0.33**			**0.23**	**0.011**	**0.16**	**0.10**		
	Indicated	**112,900**	**114,900**	**0.08**		**0.34**			**0.23**	**0.011**	**0.14**	**0.09**		
	Inferred	**17,800**	**19,200**	**0.06**		**0.33**			**0.22**	**0.010**	**0.13**	**0.08**		
Kylylahti	**Measured**		**2,500**											
	Indicated		**3,600**											
	Inferred		**700**											
Tara	**Measured**	**30**					**5.0**	**1.0**						
	Indicated	**2,500**	**2,200**				**5.4**	**1.4**						
	Inferred	**27,800**	**20,800**				**7.3**	**1.6**						
Laver	**Measured**	**1,100**	**1,100**	**0.11**	**4**	**0.20**								**18**
	Indicated	**512,400**	**512,400**	**0.13**	**3**	**0.22**								**36**
	Inferred	**550,600**	**550,600**	**0.10**	**3**	**0.21**								**33**
Rockliden	**Measured**													
	Indicated	**800**	**800**	**0.08**	**102**	**2.1**	**4.4**	**0.90**						
	Inferred	**9,200**	**9,200**	**0.05**	**47**	**1.7**	**3.9**	**0.40**						

[1] Kevitsa reports sulphide-bound Ni and Co. [2] Te at Kankberg only. Figures may be rounded up or down.

Ten-year overviews

THE GROUP

	2010	2011	2012[1)]	2013	2014	2015	2016	2017	2018	2019
Result, SEK m										
Revenues	36,716	40,323	40,001	34,409	36,891	40,242	40,316	49,531	52,454	49,936
Operating profit before depreciation	7,445	6,674	6,731	4,632	6,035	7,112	9,881	13,617	13,933	12,688
Operating profit excluding revaluation of process inventory	4,830	5,008	4,042	2,271	2,605	4,010	5,094	8,913	9,074	7,035
Operating profit	5,643	4,748	4,171	1,803	2,759	3,590	5,682	9,015	9,004	7,597
Profit after financial items	5,331	4,560	3,992	1,581	2,471	3,356	5,375	8,737	8,763	7,337
Tax	–1,375	–1,171	–651	–288	–572	–715	–1,135	–1,881	–1,562	–1,548
Net profit for the year	3,957	3,389	3,341	1,294	1,899	2,641	4,239	6,856	7,201	5,788
Cash flow, SEK m										
Cash flow from operating activities	6,197	4,021	5,518	3,505	5,789	6,235	6,995	12,737	11,768	9,442
Cash flow from investment activities	–2,995	–4,024	–4,129	–4,971	–4,206	–3,670	–9,795	–5,428	–6,076	–8,807
Free cash flow	3,202	–3	1,389	–1,466	1,583	2,565	–2,801	7,309	5,692	635
Cash flow from financing activities	–3,199	–464	–730	1,060	–1,355	–2,503	3,376	–6,304	–5,931	–1,538
Cash flow for the year	3	–467	659	–406	228	63	575	1,005	–239	–903
Capital structure and return, SEK m										
Balance Sheet total	35,128	37,615	40,080	41,841	43,865	43,022	53,877	55,882	58,727	66,424
Capital employed	27,151	30,473	31,236	34,451	35,087	35,131	42,457	42,931	44,441	49,809
Return on capital employed, %	21	17	14	5	8	10	15	21	20	16
Equity	18,846	21,032	22,354	23,075	23,974	25,807	29,394	35,053	39,011	41,440
Return on equity, %	23	17	16	6	8	11	16	22	19	14
Equity/assets ratio, %	54	56	56	55	55	60	55	63	66	62
Net debt	4,584	6,063	6,276	8,673	8,283	5,827	9,339	3,752	2,034	5,493
Net debt incl. reclamation liability	–	–	–	–	–	–	–	1,657	1,757	2,134
Net debt/equity ratio, %	24	29	28	38	35	23	32	11	5	13
Data per share, SEK										
Earnings for the period										
Basic	14.47	12.39	12.21	4.72	6.94	9.65	15.49	25.06	26.32	21.15
Diluted	14.47	12.39	12.21	4.72	6.94	9.65	15.49	25.06	26.32	21.15
Cash flow from operating activities										
Basic	22.66	14.70	20.17	12.82	21.17	22.80	25.57	46.57	43.03	34.52
Diluted	22.66	14.70	20.17	12.82	21.17	22.80	25.57	46.57	43.03	34.52
Equity										
Basic	68.90	76.90	81.68	84.31	87.63	94.33	107.44	128.13	142.59	151.47
Diluted	68.90	76.90	81.68	84.31	87.63	94.33	107.44	128.13	142.59	151.47
Ordinary dividend [2)]	5.00	4.00	4.00	1.75	2.25	3.25	5.25	8.25	8.75	7.00
Redemption per share	–	–	–	–	–	–	–	5.75	4.25	–
Share price, 31/12	136.7	100.5	122.1	98.45	125.5	142.9	237.9	280.6	192.0	248.5
Highest price paid	137.7	143.5	125.6	126.7	129.9	201.1	258.2	307.9	328.4	291.7
Lowest price paid	79.5	65.35	87.8	80.2	90.7	112.1	100	222.7	187.8	181.5
P/E ratio	9.45	8.11	10.0	20.9	18.09	14.8	15.4	11.4	7.3	11.7
Change in share price during the year, %	48	–26	21	–19	27	14	66	18	–32	29
Dividend yield, %	3.7	4.0	3.3	1.8	1.8	2.3	2.2	2.9	4.6	2.8
Total yield, %	52	–23	25	–16	30	15	70	20	–28	24
Number of shares, million										
Number of shares, 31/12	274	274	274	274	274	274	274	274	274	274
Average number of shares	274	274	274	274	274	274	274	274	274	274
Number of own shares held, 31/12	–	–	–	–	–	–	–	–	–	–
Employees										
Number of Group employees, total	4,412	4,597	4,795	4,815	4,881	4,878	5,477	5,684	5,819	5,997
Number of female employees	669	736	813	824	852	867	976	1,001	1,060	1,154
Percentage of women on the Board/in Group management, %	27/0	27/0	27/17	27/20	27/20	36/20	36/20	36/20	50/20	50/20
Accidents per one million hours worked, own personnel, frequency	8.2	4.9	6.6	7.0	5.8	6.6	6.7	5.0	3.1	4.0
Accidents per one million hours worked, incl. contractors, frequency			9.1	8.9	7.9	8.9	7.9	6.3	5.1	4.4
Fatalities, own staff	0	0	0	0	0	0	0	0	0	0
Fatalities, contractors			0	0	0	0	1	0	0	0
Sick-leave, %	4.0	3.7	3.7	3.9	4.3	4.6	4.4	4.5	4.5	4.3

Continued: Ten-year overview - Group	2010	2011	2012[1)]	2013	2014	2015	2016	2017	2018	2019
Energy consumption										
Total energy consumption, TJ	16,147	15,579	16,140	16,415	17,231	16,813	19,061	19,788	19,650	18,884
Water withdrawal, total, km^3	0.140	0.153	0.160	0.155	0.173	0.150	0.140	0.145	0.145	0.132
Emissions & Discharges										
Direct emissions of greenhouse gases, ktonnes	510	499	574	578	554	559	594	605	644	598
Indirect emissions of greenhouse gases, electricity purchased, ktonnes	398	408	416	402	425	313	436[4)]	387	299	316
Indirect emissions of greenhouse gases, heating and steam purchased, ktonnes	6	17	18	20	22	17	23	31	28	3
Carbon dioxide emissions, total, ktonnes	913	924	1,008	1,000	1,001	889	1,052	1,024	971	917
Emissions of metals to air, tonnes[3)]	23	23	92	75	126	88	100	109	92	69
Sulfur dioxide emissions to air, tonnes	6,850	7,410	8,240	6,410	7,320	7,210	7,060	7,360	7,720	6,240
Discharges of metals to water, tonnes[3)]	18	14	21	23	21	18	13	9	8	51
Discharges of nitrogen to water, tonnes	199	205	253	219	225	261	300	236	240	228

1) The 2012 comparison year has been restated due to the changes to the IFRIC 20 and IAS 19 accounting principles in 2013.

2) The figures for 2019 comprise proposed dividend.

3) Since 2019, the Natural Capital Protocol methodology is used to calculate metal equivalents (tonnes). The period 2012–2018 refers to metal equivalents (tonnes). The period 2008–2011 refers to the mass of the metals (tonnes).

4) The 2016 emissions figure has been changed from 381 to 436 due to incorrect calculation data.

MINES

	2010	2011	2012[1)]	2013	2014	2015	2016	2017	2018	2019
Production of metal in concentrate										
Zinc, ktonnes	294	283	271	272	294	299	329	305	290	290
Copper, ktonnes	76	81	79	79	78	85	103	143	140	121
Nickel, ktonnes	–	–	–	–	–	–	7	14	14	10
Lead, ktonnes	50	49	49	48	61	62	63	60	55	55
Gold, kg	3,727	3,681	3,644	3,849	4,379	4,922	5,766	7,237	7,678	7,257
Gold, troy. oz.	119,839	118,332	117,150	123,759	140,789	158,228	185,386	232,666	246,855	233,316
Silver, kg	230,756	231,388	229,791	261,804	323,325	418,489	446,826	413,238	402,349	372,199
Silver, '000 troy. oz.	7,419	7,439	7,388	8,417	10,395	13,454	14,365	13,286	12,936	11,966
Tellurium, kg[2)]	–	–	6,791	24,457	30,917	33,000	38,680	34,979	44,641	40,953
Financial data, SEK m										
Revenues	9,580	10,279	9,509	8,303	9,318	9,808	12,659	18,195	18,404	17,060
Operating expenses	4,535	5,189	5,008	4,924	5,417	5,842	6,833	7,947	8,481	8,849
Depreciation	954	1,110	1,669	1,917	2,264	2,520	3,172	3,487	3,708	3,824
Operating profit	4,113	3,913	2,974	1,598	1,299	1,429	2,804	6,681	6,451	4,484
Investments	2,189	2,338	3,570	3,763	2,732	2,394	2,755	3,722	4,482	6,409
Operational acquisitions[3)]	–	–	–	–	718	–	5,961	–	–	–
Capital employed	13,501	14,272	16,125	18,288	19,615	19,275	24,972	25,502	26,328	28,719
Greenhouse gas emissions										
Direct emissions of greenhouse gases (incl. new sources since 2007), ktonnes	99	107	124	129	133	131	168	192	207	173
Indirect emissions of greenhouse gases, electricity, heating and steam purchased, ktonnes	198	194	197	187	204	96	145	151	134	139
AITIK										
Milled ore, ktonnes	27,596	31,541	34,321	37,070	39,090	36,361	36,051	39,045	38,472	40,661
Head grades										
Cu, %	0.27	0.24	0.22	0.21	0.20	0.21	0.22	0.28	0.29	0.25
Au, g/tonne	0.16	0.14	0.11	0.10	0.09	0.11	0.11	0.13	0.14	0.13
Ag, g/tonne	2.07	2.15	2.50	2.28	2.14	2.45	2.11	1.98	1.82	1.17
Concentrate production										
Cu, ktonnes	263	267	270	292	277	307	320	394	404	377
Concentrate grade										
Cu, %	25.58	25.00	24.85	24.29	24.48	21.93	22.12	24.76	24.58	24.21
Production of metal in concentrate										
Cu, ktonnes	67	67	67	71	68	67	71	98	99	91
Au, kg	2,208	2,447	1,959	1,765	1,767	2,042	2,119	2,899	3,150	3,063
Au, troy. oz.	70,987	78,657	62,996	56,731	56,823	65,666	68,127	93,197	101,285	98,470
Ag, kg	36,468	45,040	51,698	53,612	54,854	61,452	56,602	61,862	54,894	37,991
Ag, '000 troy. oz.	1,172	1,448	1,662	1,724	1,764	1,976	1,820	1,989	1,765	1,221

Continued: Ten-year overview – Mines	2010	2011	2012[1]	2013	2014	2015	2016	2017	2018	2019
AITIK cont.										
Financial data, SEK m										
Revenues	3,996	4,549	4,170	3,593	3,427	3,292	3,273	5,487	6,017	5,818
Operating profit before depreciation	2,442	2,583	2,651	1,902	1,669	1,413	1,548	3,513	3,974	3,646
Operating profit	2,008	2,046	1,732	882	558	183	222	2,073	2,494	2,149
Investments	1,210	1,178	1,207[1]	1,143	1,181	1,207	1,174	1,534	1,576	1,985
Cash cost USc/lb Cu C1, Normal	105	120	83	131	138	105	102	82	77	76
Proven and probable Mineral Reserves[4]										
Mtonnes	733	710	702	1,085	1,126	1,227	1,194	1,161	1,148	1,187
Cu, %	0.25	0.25	0.25	0.22	0.22	0.23	0.23	0.23	0.22	0.23
Au, g/tonne	0.10	0.10	0.10	0.14	0.14	0.14	0.14	0.14	0.14	0.15
THE BOLIDEN AREA										
Milled ore, ktonnes	1,375	1,677	1,862	1,809	1,862	1,879	2,138	2,065	1,947	2,028
of which slag	157	134	241	301	245	301	300	264	199	272
Head grades										
Zn, %	3.69	2.87	2.15	2.61	3.00	3.82	4.16	3.99	3.54	3.57
Cu, %	0.79	1.03	0.84	0.61	0.60	0.41	0.40	0.38	0.36	0.34
Pb, %	0.37	0.27	0.23	0.28	0.30	0.44	0.44	0.42	0.36	0.39
Te, g/tonnne[2]	–	–	8.94	28.78	33.8	37.6	36.9	34.9	44.7	45.6
Au, g/tonne	1.6	1.2	1.3	1.6	1.8	1.7	1.7	1.9	1.9	2.0
Ag, g/tonne	55	41	35	42	42.6	59.6	59.2	57.7	52.1	54.1
Concentrate production										
Zn, ktonnes	74	69	56	63	82	103	129	123	103	107
Cu, ktonnes	31	60	47	31	32	20	23	20	20	18
Pb, ktonnes	4	3	3	3	5	9	12	13	9	11
Concentrate grade										
Zn, %	54.7	55.7	54.6	55.9	54.9	54.2	54.5	53.2	54.7	54.1
Cu, %	26.4	23.3	25.5	25.4	24.5	25.7	24.8	25.3	23.9	24.4
Pb, %	41.5	41.7	44.5	45.26	32.9	34.0	31.3	25.7	32.1	31.8
Production of metal in concentrate										
Zn, ktonnes	40	38	30	35	45	56	70	66	57	58
Cu, ktonnes	8	14	12	8	8	5	6	5	5	4
Pb, ktonnes	2	1	1	1	2	3	4	3	3	3
Te, kg[2]	–	–	6,791	24,457	30,917	33,000	38,680	34,979	44,641	40,953
Au, kg	1,285	989	1,434	1,808	2,062	1,899	2,261	2,476	2,752	2,793
Au, troy. oz.	41,318	31,781	46,102	58,117	66,293	61,058	72,693	79,615	88,461	89,810
Ag, kg	52,806	45,318	41,405	45,212	47,421	64,846	84,911	80,781	72,154	75,123
Ag, '000 troy. oz.	1,698	1,457	1,331	1,454	1,525	2,085	2,730	2,597	2,320	2,415
Financial data, SEK m										
Revenues	1,448	1,587	1,552	1,317	1,712	1,602	2,025	2,612	2,361	2,594
Operating profit before depreciation	588	659	554	250	474	437	924	1,267	1,149	1,162
Operating profit	481	530	369	19	188	108	548	868	756	738
Investments	298	565	623	364	261	413	365	440	632	592
Cash cost USc/lb Zn C1, Pro-rata				72	78	68	64	79	78	75
Cash cost USc/lb Cu C1, Pro-rata				264	216	167	112	143	153	147
Cash cost USD/tr. oz. Au C1, Pro-rata				1,098	921	818	710	686	692	715
Proven and probable Mineral Reserves										
Sulphide ores, ktonnes	8,220	8,980	9,110	12,680	11,580	10,550	8,910	7,680	7,920	7,630
Zn, %	5.3	5.2	5.4	6.0	5.5	5.7	5.5	5.2	5.2	5.6
Cu, %	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5
Gold ores, ktonnes	2,780	3,100	3,584	3,274	3,500	4,300	3,680	4,500	4,200	5,040
Au, g/tonne	4.1	3.6	3.8	3.8	3.5	3.3	3.6	3.7	3.7	3.4
Te, g/tonne	186	165	177	181	200	187	189	175	171	162
KYLYLAHTI[5]										
Milled ore, ktonnes	–	–	–	–	172	733	797	809	785	716
Head grades										
Cu, %	–	–	–	–	1.58	1.72	1.62	1.30	1.01	0.74
Zn, %	–	–	–	–	0.50	0.70	0.64	0.53	0.41	0.35
Ni, %	–	–	–	–	–	–	–	–	0.21	0.23
Co, %	–	–	–	–	–	–	–	–	0.20	0.18
Au, g/tonne	–	–	–	–	0.67	0.75	0.81	1.08	0.98	0.86
Concentrate production										
Cu, tonnes	–	–	–	–	13,275	62,144	61,155	51,440	42,107	29,258
Zn, tonnes	–	–	–	–	756	5,177	5,283	3,799	2,334	1,895
Concentrate grade										
Cu, %	–	–	–	–	19.2	19.0	19.8	18.8	17.5	16.5
Zn, %	–	–	–	–	44.3	42.3	46.9	44.3	43.3	44.9

Continued: Ten-year overview – Mines	2010	2011	2012[1)]	2013	2014	2015	2016	2017	2018	2019
KYLYLAHTI[5)] cont.										
Production of metal in concentrate										
Cu, tonnes	–	–	–	–	2,546	11,835	12,123	9,686	7,353	4,826
Zn, tonnes	–	–	–	–	335	2,189	2,477	1,682	1,011	851
Ni, tonnes	–	–	–	–	–	–	–	–	518	731
Co, tonnes	–	–	–	–	–	–	–	–	278	425
Au, kg	–	–	–	–	82	421	477	674	605	480
Au, troy. oz.	–	–	–	–	2,624	13,542	15,347	21,657	19,435	15,419
Financial data, SEK m										
Revenues	–	–	–	–	117	560	573	708	674	558
Operating profit before depreciation	–	–	–	–	31	192	164	267	241	108
Operating profit	–	–	–	–	7	74	–28	34	–31	39
Investments	–	–	–	–	36	137	97	24	10	4
Cash cost USc/lb Cu C1, Normal	–	–	–	–	190	150	143	153	198	145
Proven and probable Mineral Reserves										
ktonnes	–	–	–	–	3,900	2,900	1,900	1,700	1,300	500
Cu, %	–	–	–	–	1.6	1.4	1.2	1.2	0.7	0.6
Zn, %	–	–	–	–	0.6	0.6	0.5	0.4	0.3	0.3
Au, g/tonne	–	–	–	–	0.9	1.0	1.1	0.9	1.0	1.2
GARPENBERG										
Milled ore, ktonnes	1,443	1,456	1,484	1,495	2,224	2,367	2,622	2,634	2,622	2,861
Head grades										
Zn, %	6.6	6.2	5.6	5.2	5.1	5.0	4.4	4.3	4.1	4.1
Cu, %	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Pb, %	2.5	2.4	2.1	2.1	2.1	2.1	1.8	1.8	1.6	1.5
Au, g/tonne	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Ag, g/tonne	133	133	129	153	136	156	150	133[6)]	135	118
Concentrate production										
Zn, ktonnes	160	148	136	127	182	196	200	201	191	205
Cu, ktonnes	3	2	2	3	3	5	5	5	5	5
Pb, ktonnes	41	39	35	36	58	60	54	55	50	51
Concentrate grade										
Zn, %	53.7	55.0	54.8	55.4	54.6	55.0	54.3	53.5	52.9	53.0
Cu, %	18.3	19.1	17.7	18.0	14.8	16.3	15.2	16.3	13.7	13.8
Pb, %	72.0	72.4	70.7	70.3	63.1	70.7	72.7	70.9	70.5	70.7
Production of metal in concentrate										
Zn, ktonnes	86	81	75	70	99	108	109	107	101	109
Cu, ktonnes	0.5	0.4	0.4	0.5	0.4	0.8	0.7	0.8	0.7	0.7
Pb, ktonnes	29	28	25	25	37	42	39	39	35	36
Au, kg	234	246	250	277	468	559	580	541	542	514
Au, troy. oz.	7,534	7,895	8,051	8,911	15,049	17,962	18,661	17,406	17,413	16,522
Ag, tonnes	140	140	135	162	218	288	302	268	273	257
Ag, '000 troy. oz.	4,505	4,505	4,341	5,201	7,014	9,270	9,705	8,602	8,769	8,249
Financial data, SEK m										
Revenues	1,902	2,155	1,876	1,675	2,318	2,862	3,491	4,019	3,700	3,712
Operating profit before depreciation	1,293	1,506	1,262	1,025	1,319	1,896	2,509	3,049	2,685	2,555
Operating profit	1,124	1,314	1,033	776	919	1,452	2,063	2,606	2,225	2,079
Investments	281	660	1,459	2,045	916	336	317	377	395	573
Cash cost USc/lb Zn C1, Pro-rata				46	56	45	43	46	47	51
Proven and probable Mineral Reserves										
ktonnes	25,100	23,600	25,600	36,300	37,600	39,800	76,400	77,700	76,200	74,800
Zn, %	5.3	5.1	5.1	4.6	4.3	3.9	3.2	3.1	3.1	3.1
Ag, g/tonne	145	144	131	132	120	113	97	100	96	96
TARA										
Milled ore, ktonnes	2,593	2,486	2,502	2,493	2,287	2,197	2,603	2,311	2,200	2,461
Head grades										
Zn, %	7.0	7.0	7.0	7.1	6.9	6.4	6.0	5.9	6.3	5.2
Pb, %	1.4	1.4	1.4	1.5	1.6	1.3	1.2	1.1	1.2	1.0
Concentrate production										
Zn, ktonnes	316	307	305	298	267	243	268	239	242	223
Pb, ktonnes	34	34	41	39	42	34	37	31	29	29
Concentrate grade										
Zn, %	53.0	53.3	54.4	55.9	56.0	54.8	55.2	54.6	54.4	54.9
Pb, %	53.7	58.8	55.2	56.1	53.1	49.9	52.8	54.7	57.0	54.9

Continued: Ten-year overview – Mines	2010	2011	2012[1]	2013	2014	2015	2016	2017	2018	2019
TARA cont.										
Production of metal in concentrate										
Zn, ktonnes	167	164	166	166	150	133	148	131	132	122
Pb, ktonnes	19	20	23	22	22	17	20	17	17	16
Ag, kg	1,344	909	1,673	1,197	2,433	1,273	1,076	1,344	1,160	1,578
Ag, '000 troy. oz.	43	29	54	38	78	41	35	43	37	51
Financial data, SEK m										
Revenues	1,831	1,757	1,727	1,542	1,743	1,492	2,085	2,691	2,727	2,143
Operating profit before depreciation	619	503	421	595	479	470	947	1,275	1,160	598
Operating profit	383	268	100	195	56	95	476	942	798	283
Investments	285	372	268	201	313	274	299	379	592	508
Cash cost USc/lb Zn C1, Normal	69	72	69	68	75	76	69	70	78	86
Proven and probable Mineral Reserves										
ktonnes	16,000	15,700	14,000	13,100	15,300	17,000	16,500	19,500	19,000	17,400
Zn, %	7.1	7.1	7.1	7.0	6.6	6.3	6.3	5.8	5.7	6.0
Pb, %	1.8	1.8	1.7	1.6	1.5	1.5	1.6	1.4	1.5	1.6
KEVITSA[7]										
Milled ore, ktonnes	–	–	–	–	–	–	4,518	7,911	7,582	7,536
Head grades										
Cu, %	–	–	–	–	–	–	0.35	0.42	0.39	0.29
Ni, %	–	–	–	–	–	–	0.24	0.25	0.26	0.19
Co, %	–	–	–	–	–	–	0.01	0.01	0.01	0.01
Au, g/tonne	–	–	–	–	–	–	0.14	0.16	0.15	0.11
Pd, g/tonne	–	–	–	–	–	–	0.19	0.20	0.22	0.13
Pt, g/tonne	–	–	–	–	–	–	0.29	0.32	0.36	0.24
Concentrate production										
Cu, ktonnes	–	–	–	–	–	–	55	112	110	80
Ni, ktonnes	–	–	–	–	–	–	80	139	145	105
Concentrate grade										
Cu, %	–	–	–	–	–	–	25.8	26.8	25.1	24.6
Ni, %	–	–	–	–	–	–	9.3	9.9	9.6	8.6
Production of metal in concentrate										
Cu, tonnes	–	–	–	–	–	–	14,217	29,957	27,498	19,763
Ni, tonnes	–	–	–	–	–	–	7,442	13,777	13,948	9,021
Co, tonnes	–	–	–	–	–	–	322	587	591	445
Au, kg	–	–	–	–	–	–	328	647	630	407
Au, troy. oz.	–	–	–	–	–	–	10,558	20,790	20,261	13,095
Pd, kg	–	–	–	–	–	–	559	1,021	1,157	699
Pd, troy. oz.	–	–	–	–	–	–	17,965	32,838	37,209	22,470
Pt, kg	–	–	–	–	–	–	750	1,418	1,576	953
Pt, troy. oz.	–	–	–	–	–	–	24,118	45,573	50,683	30,651
Financial data, SEK m										
Revenues	–	–	–	–	–	–	1,210	2,680	2,922	2,231
Operating profit before depreciation	–	–	–	–	–	–	500	1,502	1,686	1,079
Operating profit	–	–	–	–	–	–	166	893	974	67
Investments	–	–	–	–	–	–	473	939	1,221	2,716
Cash cost USc/lb Ni C1, Normal	–	–	–	–	–	–	150	–150	–73	8
Cash cost USc/lb Ni C1, Pro-rata	–	–	–	–	–	–	340	278	315	392
Cash cost USc/lb Cu C1, Pro-rata	–	–	–	–	–	–	155	139	146	150
Proven and probable Mineral Reserves										
ktonnes	–	–	–	–	–	–	146,800	133,800	128,600	140,300
Cu, %	–	–	–	–	–	–	0.34	0.34	0.34	0.32
Ni, %	–	–	–	–	–	–	0.22	0.22	0.22	0.24

1) Comparison figures for 2012 have been restated due to changes in accounting regulations. Investments at Aitik increased by SEK 383 m.

2) Tellurium production started in 2012.

3) Operational acquisitions: Kylylahti 2014 (SEK 718 m), Kevitsa 2016 (SEK 5,961 m).

4) Aitik's figures for 2013 are updated in accordance with the press release published on 6 May 2014.

5) The acquisition of Kylylahti was completed in October 2014.

6) Garpenberg's figure for Ag g/tonne in 2017 has been corrected from 113 to 133 due to incorrect calculation data.

7) The acquisition of Kevitsa was completed in June 2016.

SMELTERS

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Metal production										
Zinc, ktonnes	456	461	467	455	468	469	461	457	486	486
Copper, ktonnes	303	336	339	325	347	332	336	353	364	322
Lead, ktonnes	17	11	19	24	25	26	28	28	29	26
Lead alloys, ktonnes (Bergsöe)	42	41	43	45	44	45	46	50	47	49
Nickel in matte, ktonnes[1)]						17	31	25	31	26
Gold, kg	14,220	12,848	16,175	16,177	17,368	17,608	17,638	17,776	16,653	14,976
Gold, troy. oz.	457,168	413,052	520,011	520,094	558,382	566,102	567,077	571,501	535,381	481,477
Silver, kg[2)]	450,280	488,147	575,959	537,941	626,767	680,600	626,331	569,474	563,051	466,738
Silver, '000 troy. oz.[2)]	14,476	15,964	18,517	17,294	20,151	21,881	20,137	18,309	18,102	15,006
Aluminium fluoride, ktonnes [3)]	22	35	36	34	35	31	32	0	0	0
Sulfuric acid, ktonnes	1,372	1,597	1,634	1,564	1,659	1,665	1,642	1,613	1,630	1,534
Financial data, SEK m										
Revenues	34,390	38,471	38,753	33,410	35,894	38,948	38,516	47,691	50,634	48,556
Gross profit excl. revaluation of process inventory[4)]	7,158	7,160	7,288	6,908	7,869	9,167	9,376	9,776	10,088	10,969
Operating expenses	5,247	5,358	5,330	5,346	5,370	5,536	5,696	6,004	6,490	7,070
Depreciation	848	823	891	913	1,012	1,002	1,026	1,114	1,220	1,253
Operating profit excl. revaluation of process inventory[4)]	1,134	1,051	1,095	679	1,518	2,692	2,759	2,732	2,435	2,716
Operating profit	1,946	790	1,224	210	1,672	2,272	3,347	2,834	2,364	3,277
Investments	804	1,627	993	1,200	768	1,248	1,372	1,862	1,656	2,398
Capital employed	14,225	16,213	15,569	15,791	15,592	15,878	17,838	18,018	18,237	21,175
Greenhouse gas emissions										
Direct emissions of greenhouse gases (incl. new sources since 2007), ktonnes	411	392	450	448	421	428	426	413	436	425
Indirect emissions of greenhouse gases, electricity, heating and steam purchased, ktonnes	214	231	237	235	243	234	313	267	194	179
RÖNNSKÄR										
Smelting material										
Copper, ktonnes										
Copper concentrate	544	651	624	605	661	642	626	631	665	606
Secondary raw materials	155	175	221	209	184	172	171	180	171	169
of which electronics	37	64	108	109	82	86	82	77	86	81
Copper, total	699	826	844	814	845	814	798	811	835	774
Lead, ktonnes										
Lead concentrate	16	11	27	38	40	38	41	39	43	41
Secondary raw materials	6	5	2	1	1	1	1	2	2	1
Lead, total	23	17	29	39	41	39	42	41	45	42
Production										
Cathode copper, ktonnes	190	219	214	206	217	206	207	219	224	201
Lead, ktonnes	17	11	19	24	25	26	28	28	29	26
Zinc clinker, ktonnes	37	36	36	36	39	36	33	34	31	33
Gold, tonnes	12	11	13	12	13	13	14	13	13	12
Gold, '000 troy. oz.	400	341	403	402	419	425	443	421	429	398
Silver, tonnes	386	415	448	437	479	539	508	485	472	384
Silver, '000 troy. oz.	12,340	13,344	14,395	14,051	15,392	17,322	16,337	15,590	15,165	12,346
Sulfuric acid, ktonnes	502	571	553	536	564	533	503	505	518	463
Liquid sulfur dioxide, ktonnes	43	42	38	39	42	37	45	50	61	54
Palladium concentrate, tonnes	2	2	3	2	2	2	3	2	2	2
Financial data, SEK m										
Revenues	1,799	2,226	2,398	2,029	2,417	2,678	2,759	2,883	3,045	3,153
Operating profit before depreciation	441	715	832	374	748	1,038	1,135	1,221	1,091	850
Operating profit	187	470	535	53	405	727	852	900	756	519
Investments	270	1,074	481	345	147	383	398	356	403	978

Continued: Ten-year overview – Smelters	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BERGSÖE										
Smelting material, ktonnes										
Battery raw materials	56	57	62	63	63	64	64	70	67	70
Production, ktonnes										
Lead alloys	42	41	43	45	44	45	46	50	47	49
Financial data, SEK m										
Revenues	793	787	698	715	783	817	882	1,221	1,172	1,154
Operating profit before depreciation	99	95	52	57	64	37	126	124	61	110
Operating profit	82	75	34	39	45	18	109	110	8	97
Investments	14	24	10	12	10	11	26	66	49	64
HARJAVALTA										
Smelting material, ktonnes										
Copper concentrate	434	456	516	471	551	528	552	543	522	488
Secondary raw materials	22	14	16	26	21	23	27	24	27	24
Copper, total	456	471	532	497	572	551	579	566	549	512
Nickel concentrate	262	259	248	251	239	282	294	259	296	266
Production										
Cathode copper, ktonnes	113	116	125	119	130	126	129	133	139	120
Nickel in matte, ktonnes[1)]						17	31	25	31	26
Gold, tonnes	2	2	4	4	4	4	4	5	3	3
Gold, '000 troy. oz.	57	72	117	119	139	141	124	150	106	83
Silver, tonnes	65	73	128	101	142	126	101	66	73	63
Silver, '000 troy. oz.	2,077	2,350	4,122	3,244	4,577	4,042	3,247	2,134	2,351	2,012
Sulfuric acid, ktonnes	573	600	639	590	658	667	703	677	671	620
Liquid sulfur dioxide, ktonnes	27	35	37	37	37	37	33	35	37	36
Palladium concentrate, tonnes	0.72	0.84	0.54	1.47	1.91	2.15	2.57	2.90	2.66	2.80
Financial data, SEK m										
Revenues	1,468	1,552	1,666	1,631	1,746	2,214	2,281	2,353	2,897	2,816
Operating profit before depreciation	318	373	479	496	485	943	935	953	1,315	1,067
Operating profit	154	222	324	316	279	736	704	707	1,043	746
Investments	122	229	215	246	225	396	432	808	680	813
KOKKOLA										
Smelting material, ktonnes										
Zinc concentrate	587	600	589	602	577	584	547	560	566	560
Production, ktonnes										
Zinc	307	307	315	312	302	306	291	285	295	291
Silver in concentrates, kg					5,651	16,079	17,180	18,188	18,205	20,147
Silver in concentrate, '000 troy. oz.					182	517	552	585	585	648
Sulfuric acid	199	302	313	319	314	343	315	326	322	326
Financial data, SEK m										
Revenues	2,062	1,818	1,778	1,795	2,004	2,350	2,223	2,363	2,344	2,842
Operating profit before depreciation	685	417	432	398	639	943	789	921	711	1,180
Operating profit	505	246	261	248	459	739	572	688	461	912
Investments	248	237	210	318	216	166	297	322	343	296
ODDA										
Smelting material, ktonnes										
Zinc concentrate										
(incl. zinc clinker)	277	283	279	263	302	310	339	338	366	384
Production, ktonnes										
Zinc	149	153	153	143	166	163	171	172	191	195
Aluminium fluoride[3)]	22	35	36	34	35	31	32	0	0	0
Sulfuric acid	123	125	128	119	123	123	121	104	119	126
Financial data, SEK m										
Revenues	1,128	1,212	1,184	1,070	1,395	1,554	1,522	1,309	1,322	1,687
Operating profit before depreciation	184	123	184	116	355	522	461	383	338	647
Operating profit	39	–25	31	–26	209	390	314	225	168	467
Investments	75	44	61	269	166	283	214	298	152	221

1) Nickel in matte in Harjavalta is included as of 1 July 2015.

2) Silver in concentrate at Kokkola is included in the production figure shown as of 2014.

3) The aluminium fluoride operations at Odda were divested in 2017.

Definitions and industry concepts

FINANCIAL DEFINITIONS

Balance sheet total The sum of the assets side or the sum of the equity and liabilities side of the Balance Sheet.

Capital employed The Balance Sheet total less interest-bearing investments, tax receivables and non-interest-bearing provisions and liabilities.

Cash flow from operating activities Cash flow generated via the operating profit, adjusted for items not affecting cash flow, tax paid and change in working capital.

Cash flow per share The cash flow for the period divided by the average number of outstanding shares.

Dividend yield Dividend per share as a percentage of the share price.

Earnings per share Net result for the period divided by the average number of outstanding shares.

Equity per share Equity divided by the number of outstanding shares.

Equity/assets ratio Equity as a percentage of the Balance Sheet total.

Free cash flow Cash flow from operating activities including cash flow from investment activities.

FTE – Full-time equivalent A metric that corresponds to one employee working full time for one year.

Net debt Interest-bearing current and long-term liabilities (including pension liabilities) less financial assets (including cash and cash equivalents).

Net debt/equity ratio Net debt divided by equity.

P/E ratio Share price divided by earnings per share.

Operating profit (EBIT) Revenues less all costs attributable to the operations but excluding net financial items and tax.

Operating profit (EBIT) excluding revaluation of process inventory Revenues less all costs attributable to the operations but excluding the effects of the revaluation of process inventory, net financial items and tax.

Return on capital employed Operating profit divided by the average capital employed. The average capital employed for each year consists of an average of the closing capital employed in the last 13 months. Measured before tax.

Return on equity Profit for the year as a percentage of average equity in the last 13 months. Measured after tax.

Total return The sum of the share's performance during the year plus dividend paid divided by the share price at the beginning of the year.

Explanations and calculations for the following financial metrics are available at www.boliden.com: Operating profit (EBIT) excluding revaluation of process inventory, Operating profit (EBIT), Free cash flow, Net debt, Return on capital employed, Return on Equity, Net debt/equity ratio, and Equity/Assets ratio. These financial metrics are used by Boliden but are not defined in accordance with IFRS regulations.

DEFINITION OF CASH COST

Boliden uses the Wood Mackenzie's cash cost metrics, C1 Normal costing and C1 Pro rata costing, to measure the mines' cost position in relation to other mines worldwide. The lower a mine's cash cost, the better its cost position. Cash cost is expressed in USc/lb. of metal and can be multiplied by 22.0462 (rounded off) to obtain the price in USD per tonne of metal.

Normal costing
In normal costing calculations, the costs are allocated in their entirety to one main metal and then reduced by the net revenue[1] of other metals, known as by-metals.

+	Mining operations, concentration and administration costs[2]
+	Costs of freighting concentrate to smelters
+	Treatment and refining charges (TC/RC)
–	Deductions for net revenue of by-metals
=	**Cash cost C1 Normal costing**

Pro rata costing
In pro rata cash costing, the costs are divided up between the various metals on the basis of the individual metal's share of the total net revenue.

Composite costing
In composite costing, mines are included using either normal costing or pro rata costing on the basis of criteria based on the metals' net revenue. If a metal accounts for 65 per cent or more of the total net revenue, the cash cost is calculated using normal costing, while if a metal accounts for less than 65 per cent of the total net revenue, the cash cost is calculated using pro rata costing.

+	Income from payable metal
–	The metal's freight cost
–	The metal's treatment and refining charges
=	**The net revenue for the metal**

DEFINITION OF CASH MARGIN

Boliden uses Wood Mackenzie's cash margin compilations to measure the smelter's cost position in relation to other smelters. The cash margin is the difference between income and cash cost, expressed in USc/lb of metal, and can be multiplied by 22.0462 (rounded off) to obtain the price in USD per tonne of metal. The income comprises treatment and refining charges, free metals and income from by-products.

The income for zinc smelters includes income generated by sales of surplus energy, while for copper smelters, the income generated by the sales of sulfuric acid and surplus energy is added as a credit when calculating the cash cost.

The calculations for copper smelters are expressed as unit of metal produced from concentrate, while for zinc smelters it is expressed as unit of finished metal produced. Income is normally included if it is regarded as having been derived from the main process during the production of metal and the product is saleable.

1) Calculating the net revenue of mines' metalsThe net revenue is the payable income from the metal, less freight costs and treatment and refining charges.
2) Administrative costs attributable to the mine.

INDUSTRY-SPECIFIC CONCEPTS AND DEFINITIONS

Alloy Substance with metallic properties which is composed of two or more chemical elements, at least one of which is a metal.

Base metals The most common metals, e.g. zinc, copper, lead, nickel and aluminium.

Cash cost Common measurement used to show the costs affecting a mine's cash flow, converted into US dollars (average rate for the measurement period). Usually shown in cents per ounce. To show the cash cost in USD/tonne, multiply by 22. Used to compare the mine's cost position in relation to other mines. See Definitions.

Complex ore Ore that contains several metals, e.g. zinc, copper, lead, gold and silver.

Concentrator A plant in which ore is processed mechanically and/or chemically to extract and produce a concentrate of the valuable minerals.

Copper cathode An end product from copper smelters in the form of 99.99 per cent pure copper plate.

Free metals The percentage of metal concentrates bought in that an individual smelter can process, over and above the payable metal content. This percentage generates income without incurring a raw material cost.

Galvanizing An electrochemical process whereby a metal is coated with a thin layer of another metal, such as zinc. Galvanising is commonly used to protect against corrosion (rust).

Gold doré A gold/silver alloy cast as bars in the concentrator. Further processed to pure gold and silver at a smelter.

Jarosite A mineral primarily comprising iron sulphate, which is a common waste product of zinc production.

Kaldo furnace Rotating and tippable furnace for the smelting and process treatment of copper, lead and precious metals, etc., including the recycling of metals from electronic scrap. The plastic present in the scrap is used to smelt the metals, thereby reducing the process' energy requirement.

LBMA London Bullion Market Association. International market responsible for the daily pricing of precious metals.

LME London Metal Exchange. International market where non-ferrous metals are bought and sold. Trading on the LME is used as the basis for the daily pricing of metals worldwide. The LME also maintains warehouse stocks of the metals traded.

Metal concentrate Also known as dressed ore or mined concentrate. Metal concentrate is the result of the concentration processes that separate out the financially valuable minerals present in ore from those with no financial value.

Metal content The quantities of e.g. zinc, copper, lead, gold and silver contained in concentrates. Zinc concentrates generally contain approximately 50 per cent zinc metal, while copper concentrates generally contain approximately 25 per cent copper. The lead content of mined concentrate is usually around 65 per cent.

Metal equivalents Used to describe the environmental impact of emissions and discharges of metals to air and water. The metal equivalent (Me-eq) takes into account the toxicity of each metal (relative to Cu) and provides a better metric of the environmental impact than the combined weight of the metals.

Metal premium The price agreed in advance, over and above the LME price, and paid by customers for specifically adapted metal that is freely delivered.

Mineral reserves Those parts of a mineral resource that can be mined and processed in accordance with the company's profitability requirements, and taking into account factors such as waste rock dilution and the percentage of metal in an ore that can be extracted in the concentration process, are transferred to mineral reserves and hence eliminated from the mineral resources. Mineral reserves are divided into two categories: probable mineral reserves and proven mineral reserves.

Mineral resource A concentration of minerals in the bedrock that may become commercially extractable. Mineral resources are divided into three categories: inferred mineral resources, indicated mineral resources and measured mineral resources.

Mineralization A concentration of minerals in the bedrock.

Open pit A method of mining mineral deposits located near the surface. The waste rock is stripped and the ore mined directly at the surface.

Ore Economic term for minerals, rock types or other bedrock components that can be profitably mined to extract metals or other valuable substances.

Ore grade The average quantity of valuable metals in a tonne of ore, expressed as grams per tonne for precious metals and as a percentage for other metals.

Payable metal content The percentage of the metal content of the concentrate for which the smelters pay when purchasing concentrate.

Precious metals Metals that are less commonly present in the earth's crust than base metals and which are regarded, to a greater extent, as a type of investment asset by financial sector players. The most common precious metals are gold, silver, platinum and palladium.

Price escalators (PP) Also known as price-sharing clauses. The clauses in the agreements for zinc smelting charges that distribute changes in metal prices between mines and smelters. There have been no price escalator clauses in copper treatment and refining charges for many years now.

Raw materials feed A smelter's raw material input, i.e. the amount of metal concentrate or secondary materials processed and refined.

Recovery The percentage portion of the quantity of a given metal in an ore extracted during the concentration process.

Secondary material Various types of recycling materials from which metals can be recovered, e.g. electronic and metal scrap, metal ashes, slag, dust and scrap lead batteries.

Smelter A plant in which metal raw materials, metal concentrates or secondary materials are processed to separate metals from impurities.

Treatment and refining charges (TC/RC) The price of concentrate is defined as the LME price less treatment and refining charges, which comprise the remuneration received by the smelter for refining the smelting material (concentrate and secondary materials) and extracting metals. Copper smelters' processes can be broken down into a treatment phase and a refining phase, while zinc smelters' processes only involve a treatment phase, and hence zinc smelters' remuneration only comprises a treatment charge (TC).

Underground mine A mine where the ore is mined using underground tunnels. The mining methods used in Boliden's underground mines include the cut-and-fill method and sub-level stoping.

Waste rock Economic term for rock which, unlike ore, contains no valuable material.

Zinc ingot An end product from zinc smelters with detailed specifications with regard to degree of purity, weight and size.

ABBREVIATIONS

Lb = pound = 0.4536 kg
Troy ounce = 31.1035 grams
USD = US dollars
USc = US cents
c/Lb = cents per pound = 1/22 USD/tonne
SEK = Swedish kronor
NOK = Norwegian kroner
EUR = euro
Ag = silver
Au = gold
Cu = copper
Ni = nickel
Pb = lead
Zn = zinc

Annual General Meeting

Boliden's Annual General Meeting will be held on Friday, 28 April 2020 in Aitik, Gällivare.

Participation

Shareholders wishing to participate in the Annual General Meeting must both be registered in the shareholders' register kept by Euroclear Sweden AB on Wednesday, 22 April 2020 (for details of the re-registration process for nominee shareholders, please see below) and have notified the company of their intention to participate, either via Boliden's website, www.boliden.com, by calling the company on tel. +46 8 32 94 29, or by writing to the company at the following address: Boliden, c/o Euroclear Sweden AB, Box 191, SE-101 23 Stockholm, Sweden. All such notifications must be received by the company no later than Wednesday, 22 April 2020.

Shareholders' notifications of their intention to attend the Annual General Meeting shall include the shareholder's name, civic ID no. or corporate ID no., address and telephone number, and the number of assistants who will accompany them. The information provided will be computerized and used exclusively in connection with the Annual General Meeting.

Nominee shareholders

In order to be entitled to participate in the Annual General Meeting, nominee shareholders must, no later than Wednesday, 22 April 2020, have their shares temporarily re-registered in their own names with Euroclear Sweden AB. All such requests for registration in the shareholder's own name must be submitted to the relevant trustee well ahead of this date.

Complete convening notice

A complete notice convening the Annual General Meeting, as well as financial and other information, can be found on Boliden's website at www.boliden.com. Printed financial information may also be ordered via the website or from Boliden AB, Box 44, SE-101 20 Stockholm, Sweden.

Financial information

28 April 2020	Interim Report for the first quarter of 2020
22 July 2020	Interim Report for the second quarter of 2020
28 October 2020	Interim Report for the third quarter of 2020
12 February 2021	Interim Report for the fourth quarter and Year-End Report 2020

Questions

Any questions concerning the content of Boliden's financial information can be submitted to:
Boliden's Investor Relations
Tel. +46 8 610 15 00 or
e-mail: investorrelations@boliden.com

Find out more at **www.boliden.com**

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Boliden Annual and Sustainability Report 2019
Boliden's Annual and Sustainability Report is published in Swedish and in an English translation. The Swedish version takes precedence in the event of any discrepancies between the two versions.

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Copper is one of the best conductors of electricity and heat, and these applications account for approximately 60 per cent of all copper used.

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