NEW BOLIDEN

A SUSTAINABLE FUTURE WITH METALS

Sustainability Index 2019

Sustainability Index 2019

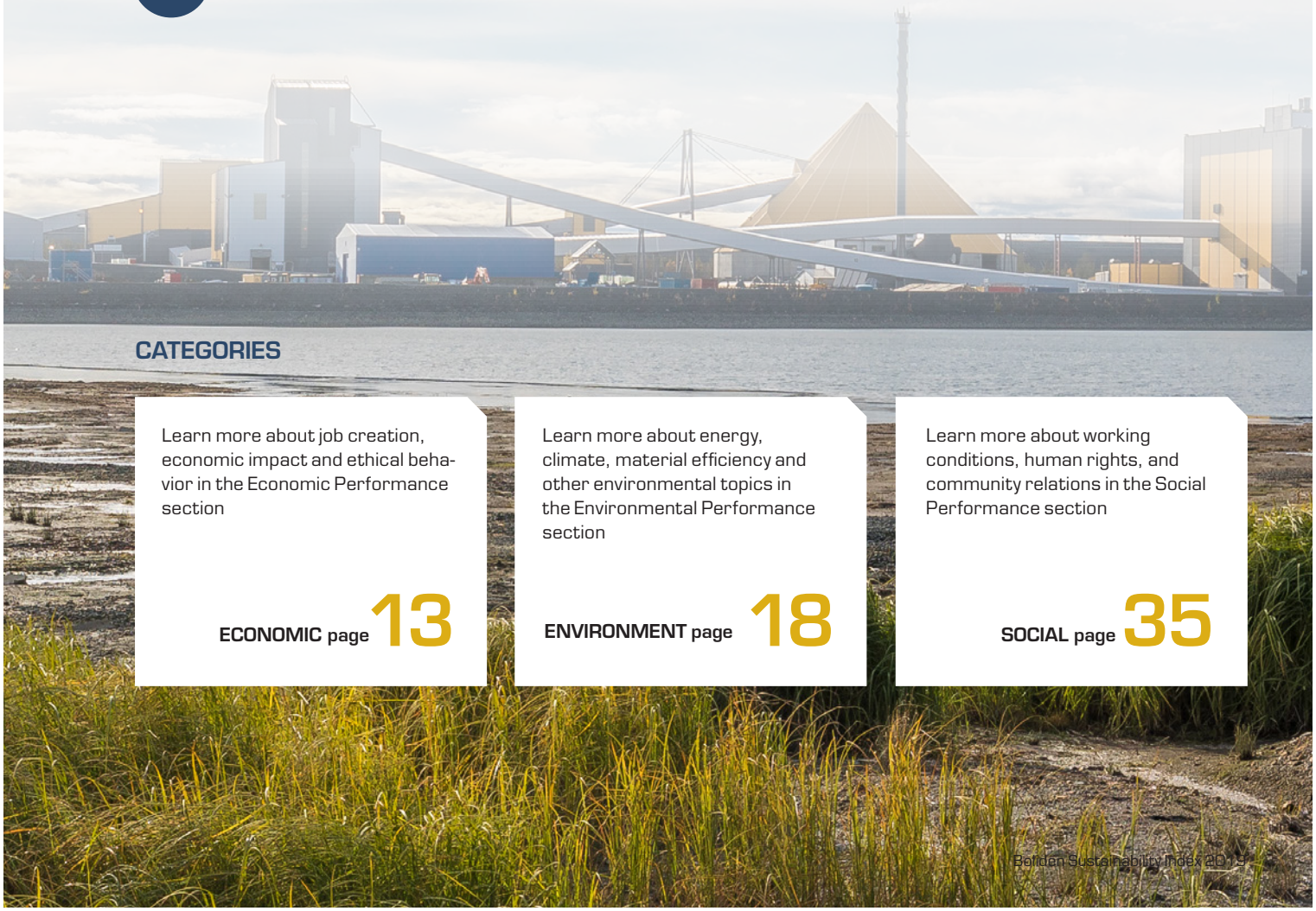
CONTENT

ABOUT THIS INDEX

Boliden has been publishing sustainability information since 2005. This index is prepared in accordance with the Global Reporting Initiatives (GRI) Standards: Core Option. We have additionally included disclosures from the GRI G4 Mining and Metal Sector Supplement. This index also constitutes Boliden's Communication on Progress (COP) and contains references to Boliden's performance in relation to the UN Global Compact's ten principles. Boliden has since 2019 supported the Task Force on Climate-related Financial Disclosures (TCFD) and discloses its performance in this Index. The 2019 Sustainability Index comprises references to the Boliden 2019 Annual and Sustainability Report that discloses the Group's value creation, operations, and risk assessment, including the sustainability perspective.

The Sustainability Index and the Annual and Sustainability report have been reviewed by means of an external limited assurance engagement in accordance with ISAE 3000, as issued by the International Federation of Accountants (IFAC). The auditor's limited assurance report is included in this report. Organizational profile and key performance data is presented in Boliden's Annual and Sustainability report 2019.

Read more at
www.boliden.com



CATEGORIES

Learn more about job creation, economic impact and ethical behavior in the Economic Performance section

ECONOMIC page **13**

Learn more about energy, climate, material efficiency and other environmental topics in the Environmental Performance section

ENVIRONMENT page **18**

Learn more about working conditions, human rights, and community relations in the Social Performance section

SOCIAL page **35**

About Boliden

ABOUT BOLIDEN

Boliden is a metal producer with focus on sustainable development. The company's core competence is within the fields of exploration, mining, smelting, and metals recycling. Boliden operates six mining units and five smelters in Sweden, Finland, Norway, and Ireland. Its shares are listed on NASDAQ Stockholm, segment Large Cap. Boliden uses a risk-based Sustainability approach to disclose environmental, social and governance information to our stakeholders, such as investors and customers. Boliden is assessed periodically by a number of responsible investment organizations and analysts on environmental, social, and governance criteria. We strive to be as transparent as possible, partaking in ranking and ratings, sharing information that is relevant to the business.

Introduction

The Index enables navigation of the disclosure of organizational profiles and governance, strategies, report parameters, sustainability topics, performance indicators, and the Mining and Metals Sector Supplement indicators. It includes references to Boliden's environmental, social, and economic goals and results. In cases where Boliden reports partially (with omissions) on a sustainability topic, the reasons for the omissions are provided either directly in the index or in connection with the disclosure of the topic.
The content index includes references to Boliden's disclosures on the following initiatives;

1. GLOBAL REPORTING INITIATIVE (GRI) CONTENT INDEX

The Global Reporting Initiative's (GRI) Standards include an internationally recognized set of standards for economic, environmental and social aspects of business performance that enables stakeholders to compare companies' performances. Boliden's Sustainability Index 2019 is prepared in accordance with the Global Reporting Initiatives (GRI) Standards: Core Option. Given our business we have also included relevant disclosures from the previous GRI G4 Mining and Minerals sector supplement which no longer form part of the applicable GRI standards.

2. THE TEN PRINCIPLES OF THE UN GLOBAL COMPACT INDEX

Boliden has been a signatory to the UN Global Compact since 2012. The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor rights, environment and anticorruption. Boliden's Sustainability Index 2019 includes the Communication on Progress (COP) with references to Boliden's performance in relation to the UN Global Compact's ten principles.

3. TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

Boliden supports the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD), and discloses Boliden's performance thus far in this Sustainability Index.

SUSTAINABILITY INDEX CONTENT

References to each reporting initiative can be found in the Content Index.

page 48

General Disclosures

Boliden produces metals that make modern society work. Our operations are characterized by concern for people, the environment and society. Boliden's sustainability work is based on our own norms and values, as well as international guidelines and targets, such as the UN Global Compact and the UN Sustainable Development Goals. Dialogues with internal and external stakeholders are used to ensure that different perspectives are taken into account.

GENERAL DISCLOSURES

102–8 Information on employees and other workers

All information in this Sustainability Index concerning the number of employees refers to data from actual number of employees on 31 December for the years 2017–2019, while in the Annual Report, the corresponding figures are calculated and reported as Full Time Employees (FTEs). There are no significant variations in the numbers reported due to seasonal variations in production in our operations. The data has been generated through the local HR IT systems at our operations.

The data has been quality assured by the Business Areas Management teams each month and annually by Group HR.

102–8a Total number of employees by employment contract (permanent and temporary), by gender

	2017			2018			2019		
	Number	%	Female, %	Number	%	Female, %	Number	%	Female, %
Permanent	5,597	94.5	17.9	5,727	95.0	18.3	5,912	95.2	18.7
Temporary	324	5.5	30.2	302	5.0	29.1	295	4.8	39.7
Total in Group	**5,921**	**100.0**	**18.5**	**6,029**	**100.0**	**18.9**	**6,207**	**100.0**	**19.7**

102–8b Total number of employees by employment contract (permanent and temporary), by region

	2017		2018		2019	
Region	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
Sweden	3,213	134	3,224	155	3,326	147
Norway	290	35	298	25	302	34
Finland	1,504	125	1,616	82	1,675	90
Ireland	577	30	578	40	590	24
Other	13	0	11	0	19	0
Total in Group	**5,597**	**324**	**5,727**	**302**	**5,912**	**295**

102–8c Total number of permanent employees by employment type (full-time and part-time), by gender

	2017			2018			2019		
Employment type	Number	%	Female, %	Number	%	Female, %	Number	%	Female, %
Full-time	5,492	98.1	17.6	5,616	98.1	18.0	5,809	98.3	18.5
Part-time	105	1.9	32.4	111	1.9	32.4	103	1.7	30.1
Total in Group	**5,597**	**100.0**	**17.9**	**5,727**	**100.0**	**18.3**	**5,912**	**100.0**	**18.7**

102–13 Membership of associations

Boliden participates in industry organizations that are able to play an important part in the sustainability dialogue. These organizations include: The International Zinc Association (IZA), The International Copper Association (ICA), The European Copper Institute (ECI), The Scandinavian Copper Development Association, The International Lead Association (ILA), The Nickel Institute, The European Precious Metals Federation (EPMF), The Selenium-Tellurium Association, The Galvanizers Associations of Germany/France and the UK, Zinc Info Norden, The International Wrought Copper Council, The European Chemical Industry Council (Cefic), The European Electronics Recyclers Association (EERA), The Bureau of International Recycling, Återvinningsindustrierna, Jernkontoret, The Association of Finnish Steel and Metal, SveMin, FinMin, Euromines and Eurometaux.

102–16 Values, principles, standards and norms of behavior

Boliden's values are a passion for improvements, taking responsibility for the entire value chain, and demonstrating personal commitment to our work and the company. We strive to be a company governed by these values in that they form the basis for how we develop our business . We expect our employees to promote our values by acting responsibly towards colleagues, business associates, and society at large, and to keep in mind that they may be regarded as Boliden representatives even during their leisure time. Boliden's Code of Conduct provides a non-exhaustive framework for what Boliden considers to be responsible conduct. Our employees should always strive to exercise good judgement, care, and consideration in their work for Boliden.

Boliden, and its employees, shall base their behavior on mutual respect. Boliden does not accept any form of harassment, discrimination, or other behavior that colleagues or business associates may regard as threatening or humanly degrading. We shall ensure that none of the operations controlled by the company lead to the exploitation of children. We never, either directly or indirectly, collaborate with suppliers or customers where we have reason to believe that child labor is used. Employees and Board Members shall not seek to obtain advantages for themselves (or any related persons) that are improper or may harm Boliden's interests in any other way. Information beyond general business knowledge acquired in their work for Boliden should be regarded confidential and treated as such.

The company shall communicate its financial results and other information affecting the share price in an appropriate and timely manner and shall, when doing so, comply with relevant legislation, stock market contracts, and other regulations.

The Code of Conduct has been approved by Boliden's Board of Directors and applies to all Boliden employees, including temporary personnel, worldwide, as well as to members of the Board of Directors of Boliden AB and its subsidiaries. Line managers are responsible for making the guidelines known and for promoting and monitoring compliance. Violation of the Code of Conduct is not tolerated and may lead to internal disciplinary action, dismissal, or even criminal prosecution. Should an improper practice or incident occur within Boliden, the company is committed to making the necessary corrections and will take remedial action to prevent recurrence.

102–40 List of stakeholder groups

Stakeholder dialogue is an important part of living up to Boliden's values as a responsible and sustainable company. During 2019, Boliden's stakeholder groups were reviewed and approved by the Boliden Group Management. A stakeholder process is in place with roles and responsibilities defined. The stakeholder process is applicable for Boliden Group, Business Areas Mines and Smelters as well as the Business Units. Each unit is responsible for identifying applicable stakeholders and the type of dialogue that should be carried out, and by whom.

Stakeholder analysis and social impact assessments

Stakeholder identification is also something that Boliden has identified as key to getting the Social Licence to Operate. Stakeholders are identified during the first exploration work and contacted through telephone calls, workplans for exploration or public meetings if the company enters an area of low experience of exploration and mining. Stakeholder management is also a central part of project development, application processes for permits as well as continuously during operation and long term rehabilitation. Stakeholders are contacted and involved in different ways. Social impact assessments have been completed in several projects. Boliden has developed a toolbox for different types of stakeholder involvement. A typical example is the citizens' dialogue conducted in the Boliden area regarding the rehabilitation of industrial areas.

The stakeholder groups identified as priority groups for engagement on sustainability issues are:

- Employees
- Society
- Market
- Capital markets
- Suppliers
- Environment

102–41 Collective bargaining agreements

The total number of employees at Boliden covered by collective bargaining agreements on 31 December, 2019 was 6,073 (5,911) representing 98% (98%) of the total workforce.

102–42 Identifying and selecting stakeholders

Boliden's operations affect many people in a variety of ways, and similarly, our stakeholders have different views and expectations of Boliden. A stakeholder process is implemented to help our business units engage and strengthen dialogue with important stakeholders. Each Boliden business unit is responsible for defining its own stakeholders and stakeholder dialogue. By conducting stakeholder dialogues at different levels and operations, Boliden meets demands for increased transparency and learns about stakeholders' demands and expectations in greater detail.

102–43 Approach to stakeholder engagement

Boliden has a wide-ranging framework of stakeholders who raise expectations, influence perceptions of the company, and are relevant with regard to sustainability performance. Dialogues are conducted in different ways with different groups, for example, bi-annual employee surveys, open-house meetings with employees and the neighbouring community, formal and informal meetings with authorities, as well as capital market days and the Annual General Meeting.

102–44 Key topics and concerns raised

Boliden's employees are naturally a key stakeholder. Employee dialogues aimed at understanding their desires and demands are essential for the overall success of Boliden's units. The response from internal stakeholders (employees) confirms that health and safety is the most important issue, followed by the ability to create value by maximizing the metal yield and driving technological developments.

External stakeholders have high expectations when it comes to Boliden's focus on increased energy efficiency, its carbon footprint, responsible business and land use. The common denominator for all stakeholders is an expectation that Boliden's innovation and technological development capabilities will benefit both the company and society at large. Sustainability within Boliden means evaluating environmental impact, taking social considerations into account, and securing strong economic results.

102–46 Defining report content and topic boundaries

The information contained in this report, with the exception of environmental performance data, covers facts and figures from Boliden's eleven business units, from the Group's head office and various staff functions, and from its sales offices. Environmental performance data are limited to Boliden's eleven operational business units (as they represent Boliden's significant environmental impact). During the reporting period, there have been no significant changes in the mining and smelting operations, the supply chain, or in the capital structure and capital formation.

Report Content

Boliden's sustainability work is based on its own norms and values and on the UN Global Compact and the UN Sustainable Development Goals.

Stakeholders have different views and expectations for Boliden. The way in which Boliden's activities relate to the global goals, to other societal trends and expectations, and to the views expressed internally within the company and in contacts with representatives of other stakeholders have all provided important input for the process of defining sustainability topics. In Boliden, a 'sustainability topic' is an issue that reflects Boliden's economic, social and environmental impact, as well as the issues that can affect assessments and decisions made by the stakeholders.

Boliden's sustainability topics are reviewed on an annual basis, and focus areas are chosen as part of the input to the Group Strategy plan.

Reporting Principles

The financial data is drawn from Boliden's audited annual accounts. The Boliden Group reports in Swedish kronor (SEK). Sustainability reporting is integrated in the Group Annual and Sustainability Report in accordance with Swedish legislation, and in a separate report, the Sustainability Index is prepared according to GRI standards. Environmental data, including energy-related data, is collected on a monthly, quarterly, or annual basis and consolidated at Group level. Calculation methods for direct CO_2 emissions are stipulated by the respective national legislation, and in connection with the EU emissions trading scheme. All other emissions have been measured, and/or calculated on the basis of periodic measurements. More detailed measurement techniques, calculation methods, and assumptions are reported in connection with relevant indicators. Social data has been generated through the local HR IT systems at the operations.

102–56 External Assurance

Boliden's policy is to use external assurance to ensure a high quality and credibility of the information published in the Boliden Sustainability Index. The sustainability report has therefore been subject to external limited assurance by the Auditor.

Governance

The Board of Directors is responsible for the stewardship of the company and for ensuring that an appropriate corporate governance structure and system are in place. Sustainability is addressed at each Board and Group Management meeting, and in local management meetings. However, day-to-day responsibility is decentralized to each business unit.

103–1 Explanation of sustainability topics and their boundaries

Boliden has identified sustainability topics that can affect our business model (positive and negative) by studying the business environment, stakeholder engagement and sustainability trends. For each of the defined topics a direction is set. The topics are managed and controlled in our operations. The sustainability topics are embedded across the organization and approved by Group management.

Identifying sustainability topics

Sustainability topics for Boliden must be based on Boliden's business model, taking into consideration risk and opportunities such as business intelligence and risk mapping, as well as applicable requirements and expectations such as;

- Stakeholders' expectations
- Current and potential legislative trends
- ISO 9001, 45001, 14001 and 50001 standards
- GRI Standards (Global Reporting Initiative)
- UN Sustainable Development Goals (SDGs)
- UN Global Compact

Boliden regularly consults selected stakeholder groups on its sustainability performance from a broader perspective. These stakeholders are asked to comment on Boliden's performance in order to drive opportunities for improvement.

Boliden has identified the relevant SDGs for each of its Sustainability topics to show how its work contributes to cross-sector international efforts to solve global development issues. Boliden's comprehensive approach to sustainability means that it supports many of the 17 SDGs through its operations. Collectively, these topics have a positive impact on Boliden's ability to become a world-class metals company and a sustainable first link in metal value chains.

102–47 List of sustainability topics

IMPACT	TOPIC	DIRECTIONS	UN SDG'S
ECONOMIC	Financial performance	Contribute to long-term economic growth by providing metals that are important for society's sustainable development.	8.1, 8.3
	Market presence	Contribute to local employment levels, trade and industry by generating purchasing power and providing a critical base for social services.	8.3
	Indirect economic impacts	Contribute to job creation indirectly or induced through subcontractors, suppliers or the effect of employees' expenditures.	8.3
	Anti-corruption	Promote and monitor compliance throughout the company by following the Code of Conduct and the Anti-Corruption policies.	16.3, 16.5
	Anti-competitive behavior	Contribute to free and fair competition	16.5
	Business partner Environmental, Social and Governance (ESG) assessment	Through our business relations create a positive environmental and social impact through business relations as well as promote a transparent business partner governance. Expect Business Partners to follow the Business Partner Code of Conduct.	12.2, 12.4, 12.5, 16.2, 16.5
ENVIRONMENTAL	Circular economy	Contribute to the circular economy through recycling and by maximizing metal recovery from available raw materials.	8.4, 12.2, 12.5
	Sustainable resource usage	Invest in R&D to develop new products that eliminate waste.	12.2, 12.5
	Energy	Implement and maintain energy management systems to achieve energy efficiency and conserve energy.	7.2
	Water	Reduce the consumption of fresh water and the discharge of used water. Maintain water management plans. Reduce the discharges of metals to water.	12.2
	Biodiversity	Measure the effects from our operation on flora and fauna, to ensure there is no net loss of biodiversity, using an Environmental Impact Assessment.	15.5
	Air pollution emissions	Reduce emissions to air through improved process efficiency.	14.3
	Climate	Provide society with low carbon metals. Reduce carbon dioxide intensity through improved process efficiency and increased electrification with plans for a fossil free mine.	13.2, 13.3
	Environmental compliance	Always meet permit values and legal requirements. No serious environmental incidents.	16.3
SOCIAL	Employment	Provide an attractive workplace.	8.8, 8.5
	Occupational health and safety	Provide a safe and healthy workplace.	8.8
	Training and education	Facilitate career and skill development.	4.7
	Diversity and Equal Opportunity	Foster workforce diversity that reflects the local community.	5.1, 8.5
	Non-discrimination	Discourage all forms of harassment and discrimination on the basis of gender, ethnicity, age, disability, religion, sexual orientation or any other factor.	5.1, 8.5, 8.8
	Local Communities	Maintain good community relations and effective operations management.	11.3, 11.a
	Socioeconomic Compliance	Ensure legal requirements are always met.	16b
	Resettlement and Closure planning	Plan for conservation and reclamation of mining areas during their operation and end of production lifespan.	11.3, 11.4, 14.2, 15.5
	Rights of Indigenous People	Promote open dialogue and long-term cooperation with Sami communities in order to mitigate the negative impacts of Boliden's mining activities on local people and the environment.	10.2

BOLIDEN'S SUSTAINABILITY TOPICS AND DIRECTIONS

103–1 Identifying significant sustainability topics

Boliden has an internal process designed to annually review its sustainability topics in response to its overall results, changing business requirements, changing stakeholder expectations, implementation of the global goals for sustainable development, technological and scientific progress, etc. The process includes cross-disciplinary discussions and impact analysis where multiple internal experts participate. Significant Sustainability topics are defined and given as an input to the Group strategy process. The significant topics are approved by Group management and the Board of Directors through the strategy plan.

The significant Sustainability topics identified during 2019 were grouped into four focus areas presented in the Annual and Sustainability report.

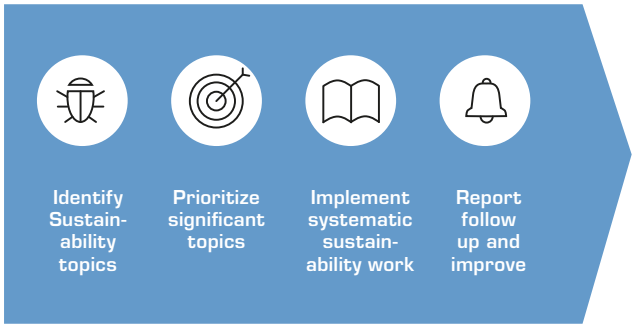
People and Partnership	Responsible Business
Occupational Health and Safety, Diversity and Equal Opportunity, Local Community and Resettlement and closure plan	Business Partner Environmental, Social and Governance ESG Assessment
Innovation	**Environment**
Sustainable resource usage (Circular economy)	Air pollution emissions, Climate and energy, Environmental compliance and Water

Sustainability component of the business strategy

The identification and prioritization of the Group's sustainability topics are based on the overall vision of being one of the leading companies in the industry in terms of development, productivity, responsibility, and value creation.

Boliden's process for integrating and implementing significant sustainability topics into the business strategy is described in four steps;

1. Identify Sustainability topics
2. Prioritize significant topics to be part of the strategy input
3. Implement systematic sustainability work
4. Report, follow up and improve.



103–2&3 Management approach, its components and evaluation thereof

The general aspects of 103-2 and 103-3 are covered in this part of the report, whereas the more topic-specific management aspects are covered in association with the disclosure of 200/300/400 topics. Identifying and prioritizing the most important and relevant issues within the context of Boliden's sustainability work is an ongoing process. Sustainability comes with a long-term perspective and is a long-term commitment, which means it is an integral part of Boliden's strategy and operations. The basis for the sustainability work is that all operations are conducted in accordance with legislative provisions and permits in the countries in which the Group operates. Boliden's ambitions are, however, significantly higher than this and the Group works proactively by setting goals and guidelines that are fundamental to its operations from a sustainability point of view. In order to systematically control and develop Boliden's operations, management systems have been implemented to ensure that significant sustainability aspects of the operations are covered, making it possible to minimize the risks associated with mining and metals production. Boliden's way of working also facilitates adaptation to market conditions and preferences, and ensures compliance with future legislation. Boliden became a signatory to the UN Global Compact in 2012, and continually enhances the efforts to protect and respect its principles and promote its spirit.

The significant sustainability topics enable Boliden to set relevant goals, and to track and improve performance.

Policies and Management Systems

Boliden has a governance model comprising Group-wide policies, with local instructions, guidelines and tools in a global management system that corresponds to the challenges the company faces. The overall policy documents and local documents are available in the Boliden Management System (BMS), which is available to every employee via Boliden's intranet.

Boliden's operations have adopted quality, environmental, occupational health and safety and energy management systems. The ambition is to have all sites certified in accordance with the environmental management standard ISO 14001, standard for energy management ISO 50001 and the health and safety management standards OHSAS 18001, respectively (implementation of ISO 45001 is ongoing). In 2019, all sites except Kevitsa and Kylylahti achieved these certifications. The Group's smelters are also certified in accordance with the ISO 9001 Standard for quality management. By working with certified management systems, Boliden ensures that its operations review significant issues, set targets, measure performance, follow up on progress, and continuously work to improve their performance. The certification schemes also demand documented delegation of responsibilities on each site and that relevant competences are upheld.

Ethics and compliance

In 2019, Boliden established a new function for ethics and compliance and employed a Chief Ethics & Compliance Officer for the purpose of strategically developing and leading Boliden's ethics and compliance work regarding human rights, anti-bribery and anti-corruption, anti-competition and antitrust legislation, trade sanctions, whistleblowing and Boliden's Codes of Conduct for employees and business partners. The function is placed within Boliden's Corporate Responsibility department and is responsible for the overall management and co-ordination of compliance and adherence to regulatory frameworks, industry standards as well as internal policies and procedures related to the defined scope.

Boliden's Business Partner Code of Conduct

Boliden's Business Partner Code of Conduct reflects the requirements applied on Boliden's business partners. The Code is publicly available on Boliden's corporate website.

The Code has been developed from the principles laid out in the UN Global Compact, the ILO fundamental conventions, applicable ISO standards, the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, as well as other international industry standards and best practices. The code sets the minimum level of behavior required by all parties in the value chain - whether Boliden is a buyer or a seller – regarding human rights, labor rights, environment, anti-corruption, conflict minerals and governance.

Boliden continuously develops and improves its corporate responsibility work related to business partners by adopting new knowledge and adjusting to new conditions. The business partners evaluation process is based on the Business Partner Code of Conduct and evaluations are conducted at a minimum of three- to five-year intervals.

The Business Partner Code of Conduct addresses:

Human Rights and Labour Rights

- Fundamental human rights
- The effective abolition of child labour
- Upholding the elimination of all forms of forced or compulsory labor
- Non-discriminatory practices
- Protecting and respecting freedom of association and collective bargaining
- Working hours
- Living wages
- Health and safety

The Environment:

- A precautionary approach to environmental challenges
- Implementing environmental management systems
- Minimizing the operational impact related to energy, greenhouse gas emissions, waste, and water consumption

Anti-Corruption:

- Zero tolerance for bribery or any form of corruption
- Zero acceptance of direct or indirect involvement in prohibited benefits
- Compliance with trade sanctions and prevention of fraud, extortion, money laundering
- Legal compliance such as taxation, fees and royalties, and transparency in disclosure of the same

Responsibility and Monitoring of Progress

Boliden's Group management has ultimate responsibility for the Group's sustainability work. Prioritizing sustainability issues, as well as identifying and selecting the most relevant sustainability issues, is an ongoing process involving all units within the Boliden Group. The Group management includes the Senior Vice President – Corporate Responsibility, who ensures that sustainability issues are addressed continuously.

The work is largely carried out through Group-wide networks in order to facilitate the dissemination of Boliden's goals and strategies and by exchanging expertise and experience between the business areas and between production units. There are networks for health and safety, the environment, chemical management, quality, human resources, and communications, and the Chairs of the respective networks report to the Group management. Boliden's Board of Directors reviews the Group's sustainability performance data annually.

Environmental performance, sick leave, and accident rates are reported on a monthly basis. They are also presented at every Group management meeting and at every Board meeting. Supplier assessments of environmental and labor practices are reported on a quarterly basis. Boliden also presents sustainability performance in its quarterly interim reports.

Boliden's whistleblower function

Boliden's whistleblower reporting system enables Boliden's employees and business partners to anonymously raise concerns regarding actual or suspected serious wrongdoings within the Boliden group. Boliden applies zero tolerance for retaliation against anyone who reports wrongdoings in good faith.

In 2019, Boliden implemented a new improved system for whistleblower reporting. The system is hosted by an external and independent third party and allows anonymous reporting. The new system facilitates and improves the investigation process and gives the whistleblower the possibility to follow the status of the case. Boliden also updated its routines for internal handling of whistleblower cases. The whistleblower function is managed by Group Ethics & Compliance with support from a cross-functional team of senior staff.

Developing how we manage sustainability

Boliden began evaluating the Natural Capital Protocol in 2018. The intention is to create a methodology that enables more informed decision-making by improving the way in which environmental, human and societal impacts are valuated and managed. Using common metrics and research that is reviewed and accepted by international associations gives our sustainability work greater credibility.

Following the completed NCP pre-study at a Boliden smelter site during 2018, Boliden has further developed its NCP methodology during 2019 by continuing with a pre-study on a mine site. A common impact valuation process has been defined for selected sustainable natural capital issues such as air emissions, water discharges, land-use and water consumption.

How Boliden will use NCP in 2020 and beyond

NCP analyses will enable us to better understand, compare and evaluate our operations' various impacts and dependencies on natural capital. NCP has already provided Boliden with new factors for metal equivalents. NCP will allow us to prioritize and evaluate different investment alternatives for the benefit of our business, society and the environment. Additional studies have been initiated and we will continue to further develop the Boliden NCP methodology and guidelines in 2020.

The results from NCP analyses can also be used to present our societal impacts to internal and external stakeholders. The Dow Jones Sustainability Index, which supports the NCP, is a typical example of this.

Economic

Boliden contributes to long-term economic growth by providing metals that are important for society's industrialization and development.

ECONOMIC PERFORMANCE 2019

The performance is presented in the Annual and Sustainability reports.

ECONOMIC TARGETS FOR 2020 AND BEYOND

Return on investments	At a minimum, the return on investment shall be10% (NPV)
Net debt/equity ratio	The net debt/equity ratio in an economic upturn shall not exceed 20%
Dividend	The dividend shall correspond to one third of the net profit

201–103 MANAGEMENT APPROACH – ECONOMIC

For more than 90 years, Boliden has been exploring, extracting and processing base metals and precious metals. Production is based on experience, innovation and modern technology, developed in collaboration with Nordic technology and engineering companies. Today, Boliden is an industry leader in terms of sustainable metal production, from deposits to recycling of used metals. The locations of Boliden's operations are determined by the localization of mineral resources and the ability to explore and expand operations in connection therewith. Good community relations and mutual understanding are a prerequisite for Boliden's success and in enabling the business to grow.

The economic topics identified as important to Boliden are economic performance, market presence, indirect economic impact, anti-corruption, and anti-competitive behavior. All of these topics are closely linked to Boliden's overall performance. They are both the result, and a precondition, of trust from the local communities where Boliden operates. By considering these topics and performing well in respect of these, Boliden maintains its license to operate and the ability to develop its business.

Boliden's Code of Conduct provides a non-exhaustive framework for what it considers responsible conduct. The employees should always strive to exercise good judgement, care, and due consideration in their work for Boliden. The Code of Conduct applies to all employees in all countries and subsidiaries throughout the Group and to the members of the Board of Directors of Boliden AB.

Economic performance

Economic performance is important, because Boliden contributes to the welfare in society through the generation and distribution of economic value e.g. by paying wages, taxes, interest rates, and dividends. These impacts occur throughout Boliden's value chain and affect several stakeholder groups and all Boliden sites.

Boliden's contribution to the community is multifaceted and includes investing in education and engaging with students, nurturing competence, and enabling conversion from one occupation to another to make people employable; sponsoring local organizations; making investments that benefit the company and the community, etc. These matters support job creation and strengthen rural communities' contribution to national economic stability. Several of Boliden's most important locations, and locations where major investments have been made, are in regions where growth injections are needed. Boliden is aware of its role and significance as what is often the biggest employer in the community and a generator of positive trickle-down effects, such as tax income to finance public services, and as a foundation for a private service sector. This status brings both privileges and responsibilities.

Salaries are an important part of the economic compensation to the community. In general the entry-level wages for employees are set higher than the minimum wage, and average salaries and wages are often higher than the national industrial average. For blue-collar employees, there is an entry-level wage stated within the local salary agreements used for new employees. For white-collar employees hired directly out of universities, Boliden applies entry-level wages, depending on the level of education needed for different jobs.

Social impact assessments are conducted in order to assess the consequences for the local community in connection with both expansions of and other significant changes to operations, and in conjunction with the closure of operations.

The Annual and Sustainability Reports contain further details of the ways in which Boliden manages, follows up on, and monitors its performance in relation to these aspects.

Market presence

Protecting local communities' interests and maintaining good relationships with employees, neighbors, authorities and business partners is an important part of being a responsible company. It also strengthens the ability to attract skilled labour and contributes to the development of the business.

Boliden has a considerable impact on local employment levels, trade, and industry by generating purchasing power and providing a critical base for social services. At the year-end, Boliden had 5,997 (5,819) full time employees, in eight countries. Although the industry is cyclically sensitive, Boliden has had stable employment over several business cycles, and the workforce has increased by about 1,700 people in the past 10 years, mainly due to the acquisitions of the Kylylahti and Kevitsa mines.

Boliden currently operates in countries where the infrastructure is well developed and the need for Boliden to contribute to society by directly investing in and developing infrastructure and social services is limited.

Just as Boliden's companies are important to the development of society, society is important to Boliden. Maintaining an ongoing open dialogue with local inhabitants and other parties with interests in the operations is a given, as is collaborating with local operators and sponsoring various associations and events. Boliden encourages visits to our mines and smelting plants.

When expanding our operations or setting up in a new location, it is also important that Boliden maintains a dialogue with all concerned stakeholders, in order to ensure that Boliden's negative social and environmental impact is minimized.

Indirect economic impact

A large proportion of Boliden's staff lives close to the workplace, and the company has a major impact on local employment and local business through increased purchasing power and as the basis for important social services. Boliden's operations affect and touch the lives of many people – sometimes entire communities. Value creation depends on the ability to show consideration for people, society, and the environment throughout the value chain. Boliden aims to make a positive contribution to the development of communities, regions, and countries.

Contribution to tax revenue

Boliden values the importance of a good tax reputation in each of the countries where we operate by reporting and paying taxes in due time and in compliance with applicable tax legislation. The Group has a commercial, not a tax driven, approach to its

business and this is also reflected in Boliden's Group Tax Policy and in the UK Tax Strategy that are published on our website. Boliden's contribution to tax revenues in the areas where the Group operates includes for example corporate income tax, social security contributions as well as energy-and environmental taxes.

Bcause – Boliden's Charitable Foundation

Metals contribute to the development and modernization of societies around the world. Boliden and its business operations have been part of this process for over 90 years and have for many years had a local level commitment to associations and non-profit organizations. In 2014, the Bcause charity fund was launched as part of our global-level contribution. Bcause is based on voluntary monthly contributions from Boliden's employees; Boliden doubles the donated amount.

Trade sanctions

Sanction controls are performed on a regular basis for potential and existing business partners. Sanctions controls were a prioritized focus area during 2019 and Boliden's sanctions control program was reviewed and improved. Policies, procedures and contract terms were updated and an extensive training program was carried out. Awareness training was given to the top 100 managers, held by both internal and external specialists. Several targeted training courses were given to specific risk groups and functions such as the legal, purchasing and sales departments and administrators.

Anti-corruption

Boliden's Code of Conduct and Business Partner Code of Conduct set out appropriate measures to prevent corrupt behavior and improper influence. Furthermore, corruption, bribery, gifts, benefits and conflicts of interest are addressed in Boliden's anti-corruption policy and guidelines. Gifts or other favors to business associates shall comply with locally accepted good business practice. Gifts and other favors may only be given or granted provided that they are modest, both with respect to value and frequency, and providing the time and place are appropriate. Compliance with anti-bribery and anti-corruption is one of the focus areas within Boliden's newly established a function for ethics and compliance.

Compliance requirements are also incorporated into contractual agreements with business partners. Boliden's anti-corruption policy has been approved by the Board of Directors and applies to all individuals acting in Boliden's name or on Boliden's behalf including employees, management, Members of the Board, consultants and agents of the Boliden Group. The anti-corruption policy also applies to companies and joint ventures in which Boliden has an interest, and to third parties who act for or on behalf of Boliden.

Anti-competitive behavior

Boliden's employees and Board members shall comply with applicable anti-trust and competition laws, Boliden's Code of Conduct, and Boliden's competition law policy. Sharing, discussing or disclosing information that may be sensitive from a competition viewpoint is prohibited.

Compliance with anti-competition and antitrust laws is one of the focus areas within Boliden's newly established ethics and compliance function. Compliance with antitrust and competition laws and regulations is vital for Boliden and therefore compliance requirements are included in Boliden's Code of Conduct as well as its competition law policy.

SUSTAINABILITY TOPIC: ECONOMIC PERFORMANCE

201–1 Direct economic value generated and distributed

Net sales in 2019 totaled SEK 49,936 (52,454) million. Boliden has developed the description of the company's value creation and has, therefore, redefined some of the economic indicators from those used in previous GRI reports. All of the indicators are reported with two comparative years. Boliden also reports revenues and operating profit per business unit, and tax payments per country in the Annual and Sustainability Report.

201–2 Financial implications and other risks and opportunities in the organization's activities due to climate change

Boliden's goal is to be a sustainable first link in a metal value chain – and to achieve this by investing in modern technology and developing safe and energy efficient low carbon processes.

Climate change risks are both physical and financial. The stress that heavy rain can bring on Boliden's water management systems is one example of a physical implication. Boliden has made capacity investments over the past few years in response to heavy rains and in order to comply with the limits stipulated in relevant permits and to achieve the Group target of reducing discharges to water.

Metals production is a very energy-intensive process that generates both direct and indirect carbon dioxide emissions. Boliden's direct carbon dioxide emissions primarily arise from the metallurgical processes, transportation, and heating requirements. The indirect carbon dioxide emissions derive from purchased electricity. To address the climate change issue, Boliden takes part in development projects focusing on, for example, improving heat recovery, the further electrification of transports, and trials involving replacing fossil fuels with biofuels in process applications.

All of Boliden's smelter operations (Odda, Bergsöe, Rönnskär, Kokkola and Harjavalta) have been fully exposed to ETS, the European Emission Trading Scheme, since 2013. The ETS is a strategic challenge for Boliden, entailing not only calculating the costs that may be entailed in future purchases of emission allowances, but also working on opportunities to reduce emissions, given the production levels and available technology. The allocated emissions allowances for Boliden's smelters for the period 2013–2020 total 3.9 m metric tons, which is in line with the direct emissions forecast. The rules for emissions trading, and the financial implications for Boliden after 2020, are uncertain.

The Boliden Group has a comprehensive governance structure to manage climate-related risks and opportunities, and in 2019, set the Group-wide target to reduce its CO_2 intensity by 40% by 2030.

SUSTAINABILITY TOPIC: MARKET PRESENCE

202–2 Proportion of senior management hired from the local community

Boliden reports this indicator for each Business Unit, which corresponds to significant locations of operation. Senior managers are defined as managers involved in the local management team. Managers are considered to be hired from the local community if they are permanently resident in the geographical vicinity of their place of work (i.e. not commuting from other regions).

	2017		2018		2019	
Operation	Senior Managers on site	Hired from local community %	Senior Managers on site	Hired from local community %	Senior Managers on site	Hired from local community %
Aitik	9	100	9	100	9	100
Boliden Area	8	100	9	100	10	100
Garpenberg	5	100	6	83	6	100
Tara	7	100	7	100	6	100
Kylylahti	7	100	7	100	7	100
Kevitsa	8	88	7	86	9	78
Rönnskär	7	100	6	100	6	86
Bergsöe	6	100	6	100	8	100
Odda	5	100	5	100	5	100
Kokkola	7	100	7	100	7	100
Harjavalta	8	100	8	100	9	100
Total in Group	**77**	**98.7**	**77**	**97.4**	**83**	**96.4**

Information from 2017 and 2018 have been corrected.

SUSTAINABILITY TOPIC: INDIRECT ECONOMIC IMPACTS

203–2 Significant indirect economic impact, including the extent of impacts

Boliden's mining and smelting operations are often of considerable importance in terms of employment in the local community, making Boliden an important local stakeholder. Not only do the Group's operations have a substantial impact on job opportunities, they also affect suppliers' purchasing power elsewhere in the local business sector, which affects the development of the communities' service sectors in the long term.

Boliden commissioned Ernst & Young. to review its economic contributions to the economy in the four countries with mining and smelting operations (2017 data). There have been no major changes in scope so the report is still valid. The results show that Boliden's activities support the creation of 30,000 jobs; in Sweden (15,800), Finland (10,900), Norway (1,500), and Ireland (1,800). In addition to these direct jobs (5,650) there are those indirectly supported through subcontractors and suppliers (10,735). The average amount of jobs created per Boliden employee is 4.3.

Boliden contributes to the public finances, both through direct taxes and through the taxes paid by suppliers and customers. Boliden's total contribution to public finances through taxes and other payment to authorities in Sweden, Finland, Norway, and Ireland was SEK 3,195 m in 2019. Please see the Annual and Sustainability Report for specifications.

The Group's operations not only impact the local communities at large: employees, shareholders, customers and suppliers all depend on Boliden's profitability, and by improving this aspect of the operations even further, Boliden will be able to continue making a positive economic and social contribution to the development of these communities and their societies.

A typical identified indirect negative economic impact could be a mine closure. Social impact assessments are made in conjunction with closure of an operation, in order to assess any consequences to the community and in an effort to mitigate, as far as possible, any negative effects.

SUSTAINABILITY TOPIC: ANTI-CORRUPTION

205–1 Operations assessed for risks related to corruption

Boliden's Code of Conduct and Business Partner Code of Conduct set out appropriate measures to prevent corrupt behavior and improper influencing. Corruption, bribery, gifts and benefits and conflicts of interest are, furthermore, addressed in Boliden's anti-corruption policy and guidelines. The documents are based on Group-wide risk assessments in order to ensure their appropriateness for the business operations in question, particularly within local procurement, and to address and mitigate any risk factors. Efforts to combat bribery and corruption are an important part of Boliden's sustainability work and Boliden applies a zero tolerance policy in this respect. No form of bribery or corruption is acceptable, and conflicts of interest shall be reported and addressed.

205–2 Communication and training in anti-corruption policies and procedures

Boliden's line managers are responsible for making the Code of Conduct and the Anti-Corruption policy and guidelines known to all new employees, and for promoting and monitoring compliance within their respective organizations and by their respective counterparties. All managers and other employees whose work involves more regular contacts with external business partners, in particular with competitors, suppliers, customers, or agents, are subject to anti-bribery and anti-corruption training appropriate for their area of responsibility.

Boliden has conducted several online courses in cooperation with external providers. The anti-bribery and anti-corruption training program is spread over three years. The courses target a selected group of employees, normally those dealing with or having contact with potential competitors. The e-learning was given to 2063 white collar workers. Boliden works with different focus areas, and in 2019 we prioritized sanctions and an extensive training program was carried out. Awareness training was given to the top 100 managers, held by both internal and external specialists. Several targeted training courses were given to specific risk groups and functions such as the legal, purchasing and sales departments and administrators.

205–3 Confirmed incidents of corruption and actions taken

Boliden is committed to the highest standards of ethical business conduct. Actual or suspected incidents of bribery or corruption can be reported anonymously or openly via Bolidens whistleblower reporting system.

There were no confirmed cases of corruption during 2019.

ANTI-CORRUPTION – PART OF THE UN GLOBAL COMPACT

Principle 10: Boliden should work against corruption in all its forms, including extortion and bribery.

Boliden has zero tolerance for corruption and unfair competition, see 103-1, 201-103, 205-1, 205-2, 205-3 and 206-1.

SUSTAINABILITY TOPIC: ANTI-COMPETITIVE BEHAVIOR

206–1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices

There were no initiated or ongoing legal actions with respect to anti-competitive behavior or compliance during 2019. There were no fines or non-monetary actions related to anti-competitive behavior, initiated or pending against Boliden.

Environment

Boliden's environmental management work is based on our values and a vision of zero environmental accidents. Boliden invests considerable resources in efficient systems, advanced technology and stable processes throughout its operations. All sites work preventively with meticulous risk assessments and clear action plans.

ENVIRONMENTAL TARGETS 2019

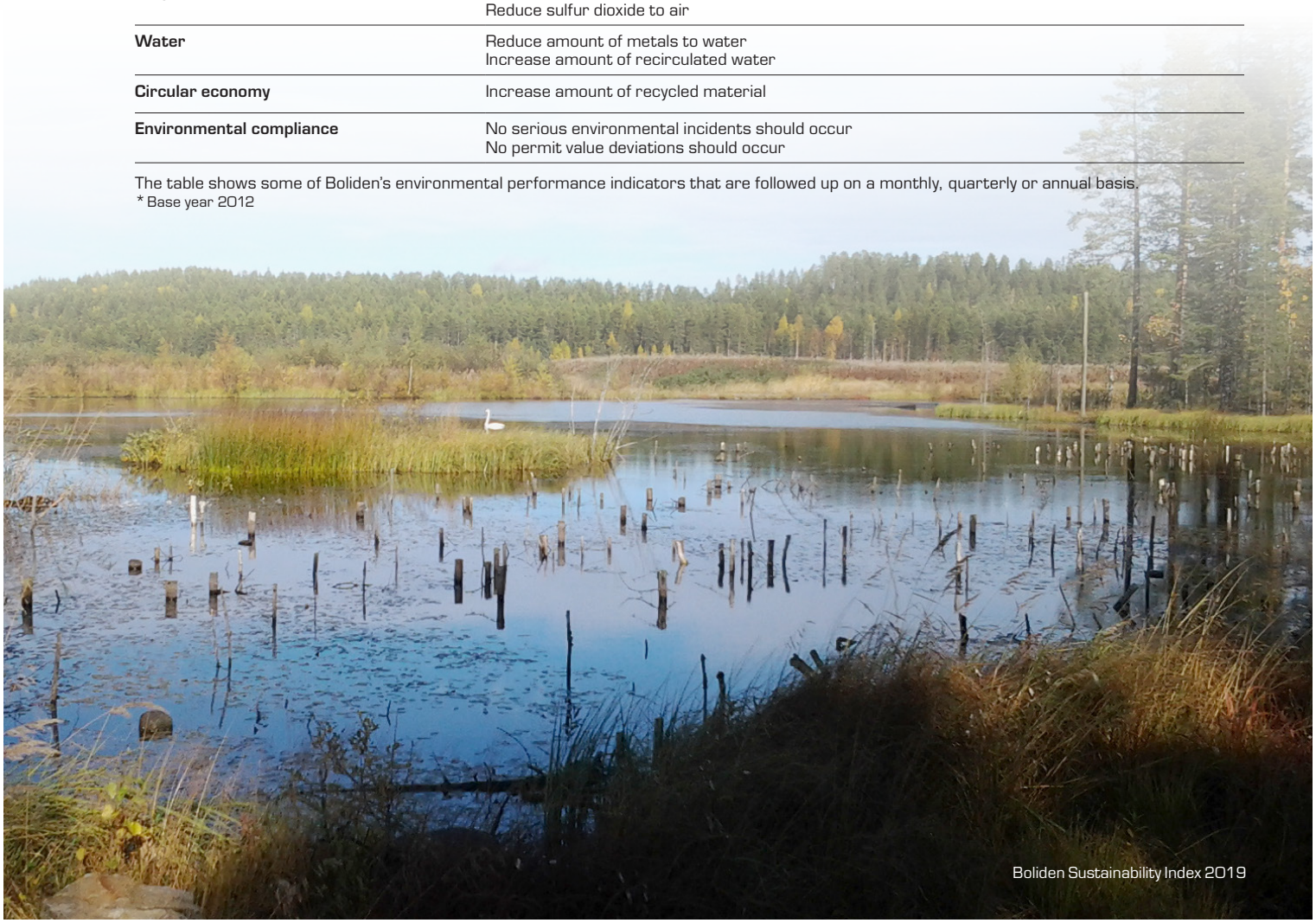
Air Pollution Emissions	CO_2 intensity shall decrease by 3% per annum
Metal discharges to water	Discharges of metals to water shall decrease by 1% per annum
Metal emissions to air	Emissions of metals to air shall decrease by 1% per annum
Environmental Incidents	Boliden's vision is to have zero serious environmental incidents each month

Performance is presented in the Annual and Sustainability Reports.

ENVIRONMENTAL TARGETS FOR 2020 AND BEYOND

Climate	Decrease carbon dioxide intensity by 40%* by 2030
Air pollution emissions	Reduce amount of metals to air Reduce sulfur dioxide to air
Water	Reduce amount of metals to water Increase amount of recirculated water
Circular economy	Increase amount of recycled material
Environmental compliance	No serious environmental incidents should occur No permit value deviations should occur

The table shows some of Boliden's environmental performance indicators that are followed up on a monthly, quarterly or annual basis.
* Base year 2012



301-103 MANAGEMENT APPROACH ENVIRONMENT

Environmental topics

Environmental topics, such as energy and climate, water, emissions, effluents & waste, compliance and transport are directly connected to how Boliden conducts its operations and whether it maintains stable processes that comply with permit requirements. Several topics are linked and impact Boliden's overall performance and compliance. Other environmental topics, such as materials, biodiversity, closure planning, grievance mechanisms and supplier assessments constitute environmental topics as they impact external stakeholders, and determine Boliden's license to operate and ability to develop its business.

Materials and circular economy

Materials are a fundamental topic since Boliden's core business is mining (production of concentrates) and smelting (transformation of concentrates to base metals). Boliden produces high-quality metals, which are mainly sold to industrial customers in Europe. Material stewardship is important to us. Care and consideration for people, society and the environment is a constant theme of all of our value chain activities – from exploration to customer deliveries. Boliden´s recycling of materials, e-scrap and batteries are also an important contribution to the circular economy.

Energy

Metal production is energy intensive, both in the mining phase and in the refining processes. Boliden's energy policy states that all business units shall implement and maintain energy management systems in accordance with ISO 50001. All units are obliged to work continuously on making improvements to process efficiency. Boliden shall reduce its dependence on fossil fuels by using renewable and/or recycled energy wherever possible. Boliden's energy consumption is a major cost item, accounting for approximately 14% (14%) in the breakdown of the Group's total operating costs.

Climate

Boliden conducts systematic reviews of its actual energy and CO_2 emission trends to identify possible improvements and efficiency measures. Boliden's units evaluate their climate impact during their annual environmental aspects reviews in compliance with the requirements of the ISO 14001 standard.

Using the best available technical solutions and resources efficiently, and replacing fossil fuels with renewables ,are important components of Boliden's efforts to reduce CO_2 emissions.

Biodiversity

Access to large areas of land is essential to the majority of Boliden's activities. Most of the mines are located in rural areas. The exception is Tara Mines, which is located near the community of Navan in Ireland. The smelters are all located in industrial areas adjacent to a community and close to the coast. Boliden has developed a biodiversity approach in the long-term land management, from exploration to rehabilitation. Boliden has decided that all rehabilitation plans shall have a specific chapter on ecological rehabilitation. Compensation plans are made to enable compensation for possible losses.

Water

Boliden's operations are located in areas where there is no scarcity of water, and no water sources are significantly affected by the water withdrawal by Boliden's operations. Boliden aims, nonetheless, to reduce both its consumption of freshwater and the discharge of used water.

Air

Boliden's smelters have all been working, for many years now, to make improvements and reductions in their emissions to air, focusing on metals and sulfur dioxide.

Local action plans are being developed both at mines and smelters with the aim of reducing diffuse emissions (dust).

Waste

Apart from normal industrial waste, Bolidens operations produce large quantities of extractive waste (such as tailings and waste-rock) and smelter waste (such as slag and sludge), which is managed in a controlled way. Boliden operations also generate waste in water and gas purification processes that are managed in line with local requirements.

Compliance

Environmental compliance is an prerequisite for successful mining and smelting operations. Legal requirements shall always be met.

Business Partner assessments

Environmental criteria are a vital part of Boliden's Business Partner Code of Conduct, and accordingly also a crucial part of the evaluation of business partner and supplier assessments. Boliden requires all business partners to identify and document their environmental aspects and to be aware of and comply with environmental legislation and common practices. All business partners must agree to comply with Boliden's Business Partner Code of Conduct, which requires them to conduct business in a responsible way with as little impact on the environment as possible, by preventing, mitigating and controlling environmental damage from their operations. They shall also constantly strive to minimize their environmental impact, minimize greenhouse gas emissions and the amount of waste.

Grievances about environmental impacts

It is the responsibility of every employee to ensure that operations are conducted properly and in compliance with given instructions. Employees must promptly report any suspected violation relating to accounting, internal controls, and auditing to their immediate superior.

Neighbors and other stakeholders are welcome to contact either the business unit or any of the company functions through a variety of channels, e.g. phone, e-mail, written correspondence.

The subjects of reports received by Boliden included noise, vibrations, dust, and other types of disturbances to the locality. Complaints are handled in accordance with local procedures.

SUSTAINABILITY TOPIC: MATERIALS

301–1 Materials used by weight or volume

Levels of mined rock and milled ore in 2019 have increased since previous years while smelting materials and concentrates produced have slightly decreased. Boliden has included tonnages of rock, ore and concentrates in the material used in its reporting. Other materials specified in the table include e.g. fuels, explosives and chemicals used in production processes.

Some of the concentrate produced in the mines is sold to external parties. The total smelting material feed comprises concentrates both from Boliden's own mines and from external mines, purchased secondary materials, and secondary materials sent from one smelter to another.

Materials are mostly weighed in connection with loading and/or charging (ore, concentrates, and most smelting materials). The mined rock figure is based on calculations (waste rock and ore). A minor part of input materials is calculated from input and stock.

Materials used by weight, (k metric tons)	2017	2018	2019
Mined rock	110,256	112,392	116,207
Whereof milled ore	55,000	54,000	56,000
Whereof concentrate produced	1,388	1,361	1,252
Smelting materials[1)]	2,656	2,742	2,628
Other materials	1,174	1,077	1,268
Whereof non-renewables	154	162	159

1) Adjusted calculations.

301–2 Recycled input materials used

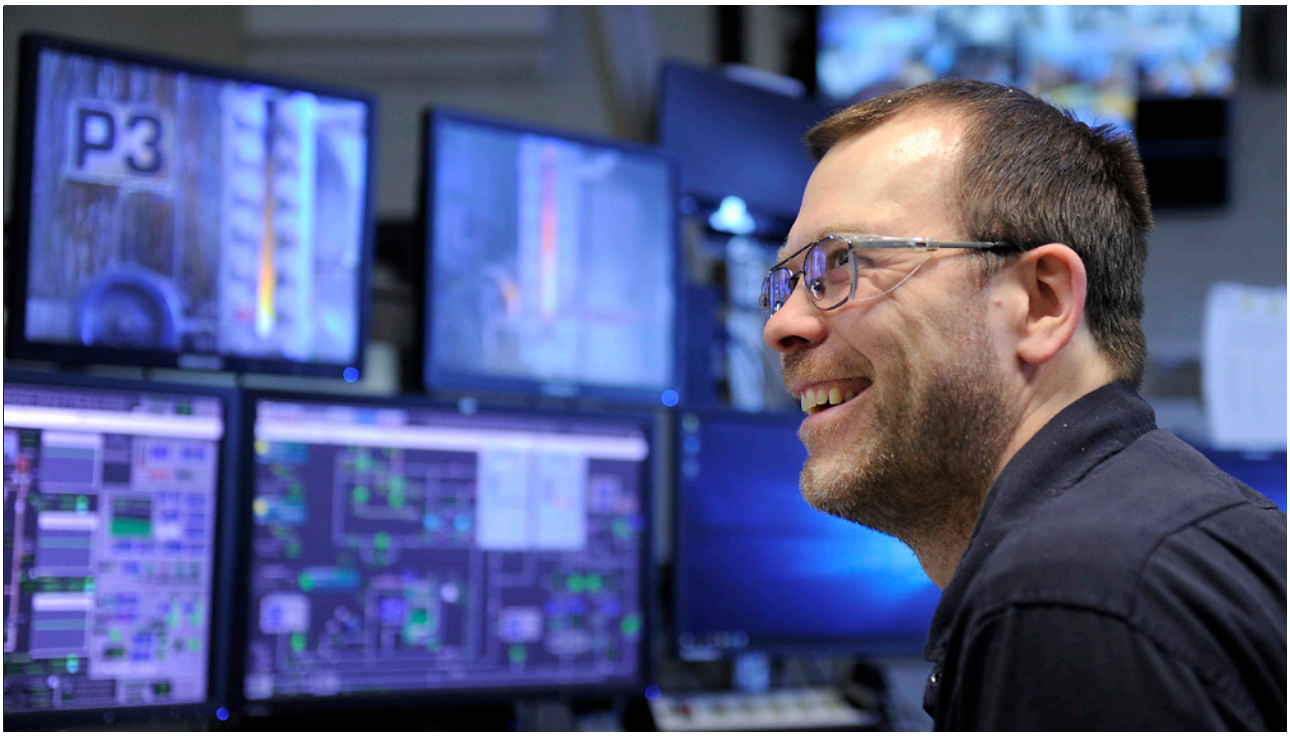
Boliden uses its own and other companies' by-products and residues for the extraction and recycling of metals. The Boliden Rönnskär smelter began using a new electronic scrap recycling facility in 2012, making Boliden among the world leaders in e-scrap recycling. Boliden Bergsöe, which recycles about 70,000 metric tons of lead acid from batteries and about 5,000 metric tons of other lead scrap per year is, furthermore, the only secondary lead smelter in the Nordic region.

Metals can be recycled endlessly without any deterioration in their quality and it is important that electronic materials and scrap, such as telephone cables, copper roofs and copper pipes, from the demolition or construction of buildings and infrastructure is re-utilized to as high a degree as possible. The smelters Rönnskär and Bergsöe recycle the most amount of metals in Boliden, in total 17% of their base metals and 24% of their precious metals are recovered from secondary metals.

The recycling input rate (RIR) shows the fraction of secondary materials in the total input to Boliden Smelters. Recycled materials include secondary materials from external sources and secondary materials sent from one plant to another within the Group. By-products and non-product outputs recirculated internally at the sites, and slag sent from smelters to mines, are not included.

Percentage of recycled materials (metric tons)	2017	2018	2019
Total secondary feed[1)]	341,800	348,500	347,100
Total feed[1)] (primary and secondary)	2,656,000	2,742,000	2,628,000
Recycling rate	13%	13%	13%

1) Adjusted calculations.



SUSTAINABILITY TOPIC: CIRCULAR ECONOMY

Boliden contributes towards a more circular economy

As one of the sustainability leaders in the metals and mining sector, Boliden clearly has a role to play in meeting the societal need for metals as sustainably as possible.

Boliden has created value from waste for many years. For example, being one of Europe's largest recyclers of used lead-acid batteries, benefiting from decades-long resource-effective industrial synergies, and continuously finding new methods of creating value from our own waste materials.

How Boliden contributes to the circular economy for metals

Boliden plays a crucial role in enabling the recycling and reuse of society's waste metals. Several of Boliden's smelters are specially equipped to process complex waste metals into 'new metals' that can then be used to create new components and products.

The circular approach to resource management is particularly well suited to the mining and metals industry as many metals can be recycled repeatedly without losing their properties.

Recovering valuable metals from electronics and industrial waste

Boliden's Rönnskär smelter in northern Sweden is one of the largest recyclers of scrapped electronic equipment in the world. The smelter annually recycles around 120,000 metric tons of waste material from electrical equipment, including circuit boards from computers and mobile phones. The waste material is sourced primarily from within Europe.

Rönnskär has also processed waste steel mill dust since the 1980s to annually produce around 35,000 metric tons of zinc clinker, which accounts for 10–15% of Rönnskär's total production. In total, the smelter produces some 200,000 metric tons of copper, 400 metric tons of silver and 13 metric tons of gold every year.

Recycling car batteries at Bergsöe

Boliden's Bergsöe smelter in southern Sweden has been recycling used lead-acid car batteries since 1942, and currently recovers lead from 4 million batteries each year. The recycled lead is mainly sold to European battery manufacturers where it is used to produce both industrial and automotive batteries.

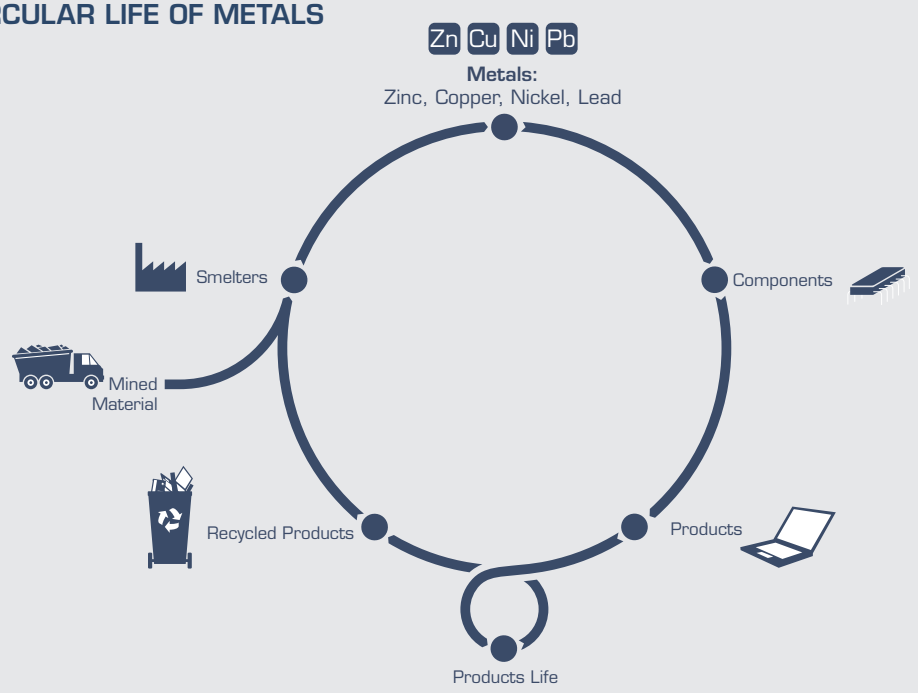
During 2019, a separation plant was installed at Bergsöe to recycle plastic battery casing, which is sold to industrial customers. The investment will avoid annuall emissions of around 10,000 metric tons CO_2 and has improved both safety and quality at Bergsöe.

Secondary feed material recycling at Odda

Around 20–25% of the Boliden's Odda smelter's total zinc production is produced from secondary sources.

Boliden Odda also recycles Waelz Oxide filter powder, which is a residual material from the scrap steel recycling industry, to produce 15,000 to 20,000 metric tons of zinc each year. Waelz Oxide can have serious negative impacts on the environment if not properly processed.

THE CIRCULAR LIFE OF METALS



SUSTAINABILITY TOPIC: ENERGY

302–1 Energy consumption within the organization

Energy consumption in 2019 totaled 18.9 (19.7) million gigajoules (GJ). Electricity accounts for 16.1 (16.2) million GJ of this consumption, which equates to 4.5 (4.5) TWh.

The reported energy usage is based on invoiced incoming and outgoing deliveries, supplemented by internal measurements and stock inventories at the end of the year. Conversions between weight and energy have been performed using energy values specified by the supplier or by using tabled values provided by national bodies.

Coke, coal, oil, and fuel gases are used for the reduction and smelting of copper, lead and zinc concentrates. Diesel is used for transportation purposes, in mining operations, and for internal transportation. Limited amounts of heating oil and gas are used for heating purposes during the cold season. The use of biofuels in metallurgical processes has been tested and evaluated. A boiler based on biomass has been added during the reporting period. Bio-based fuels have also, to a limited extent, been used in road transports. Electricity is the dominant source of indirect energy in the Group.

Energy consumption within the organization (GJ)	2017	2018	2019
Direct energy			
Coal & coke	1,844,000	2,053,000	1,814,000
Gas	289,000	306,000	306,000
Oil	2,128,000	2,285,000	2,000,000
Diesel & petrol	1,611,000	1,666,000	1,568,000
Wood chips	36,000	49,000	67,000
Total direct energy	**5,908,000**	**6,359,000**	**5,754,000**
Whereof renewables[1)]	51,000	69,000	89,000
Produced energy, for internal use	2,291,000	2,335,000	4,700,000
Indirect energy			
Electricity, purchased	16,524,000	16,156,000	16,055,000
Heat, purchased	501,000	1,100,000	128,000
Total indirect energy	**17,025,000**	**17,256,000**	**16,183,000**
Total energy input	**22,934,000**	**23,614,000**	**21,937,000**
Produced energy, sold	3,146,000	3,964,000	3,054,000
Total energy consumption	**19,788,000**	**19,650,000**	**18,884,000**

1) Wood chips and biodiesel

302–3 Energy intensity

Boliden's energy intensity was 13.21 (13.03) GJ/metric ton metal, an increase from the previous year. The energy intensity ratio is reported as the product intensity (energy consumed per unit produced). It is calculated as Boliden's net total energy consumption (the same as in GRI 302-1) for all Boliden sites, divided by the production output in metal metric tons from Boliden's production sites. This indicator is affected both by process efficiency and by the product mix and raw material properties.

302–4 Reduction of energy consumption

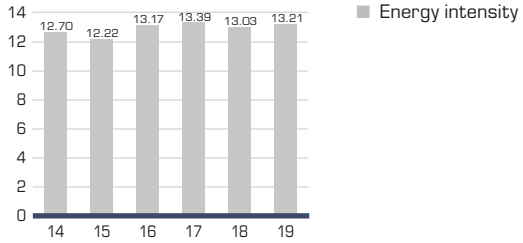
Boliden has chosen, due to the different character of mining and smelting operations, to work with local energy targets, rather than Group targets. Boliden's operations decreased their energy usage by 766,000 GJ during the year.

Boliden's smelting operations strive to take advantage of excess heat from the processes, either transforming it to electric power or supplying it for use in external district heating. In 2019, 4,700,000 (2,335,000) GJ of heat was used internally, and 3,054,000 (3,964,000) GJ was delivered externally for use in district heating systems.

To drive improvements, an energy network was established in 2019 in order to exchange experience on energy efficiency projects between the sites.

ENERGY INTENSITY

GJ/t metal



Data for 2017 has been adjusted due to updated production data

SUSTAINABILITY TOPIC: CLIMATE

Toward a competitive low-carbon metal production

Boliden is working to reduce its climate impact and to constantly maintain and improve low-carbon metal production. There is a growing global demand for metals to meet societal challenges, including climate change. For example, the greater use of renewable energy and the electrification of society needed to combat climate change both require more metals, such as copper and zinc. Furthermore, several of Boliden's metals were identified as being of special strategic interest for the development of the fossil free society.

Boliden is well positioned to help limit Europe's heavy dependence on metal imports, and to enhance sustainability throughout the metal value chain. Naturally, our operations also face challenges. Mining and smelting activities can generate significant amounts of greenhouse gas emissions. However, as a sustainability leader in the metals and mining sector, Boliden clearly has a role to play in significantly reducing its climate impact – and in driving positive change throughout the industry.

Boliden's has compiled a first version of a climate program that summarizes how we will manage climate risks.

The program includes disclosure sections on:

- Governance – how climate-related risks and opportunities are governed.
- Risk management – how climate-related risks are identified, assessed and managed.
- Strategy – our status on the actual and potential impacts of climate-related risks and opportunities on the business, strategy and financial planning so far.
- Metrics and targets – the metrics and targets used to assess and manage relevant climate-related risks and opportunities.
- Performance – the current performance and progress made by Boliden toward its climate targets.

Boliden's climate program for competitive low-carbon metal production applies to the entire Group. The Business Areas decide on what actions to take to support the program, and which units and projects to improve.

Governance

Proactive climate governance

The Boliden Environmental Board, which consists of the Boliden Group Management team, has the overall responsibility for the company's climate program and long-term targets. The CEO reports on progress to the Boliden Board.

Group Management is supported by an Environmental council. The Environmental council has an expert group, the Boliden Climate Committee, which co-ordinates Boliden's climate program. The committee consists of business area representatives and experts from the organization. The committee's assignment is to follow up, suggest improvements and coordinate the climate work within Boliden. The committee reports quartely to the Environmental Council. Each business area is responsible for implementing Boliden's climate strategy and long-term targets.

Risk Management

Boliden's business areas conduct climate-related risk and opportunities assessments, as part of its ISO 14001 certified environmental management for each of its sites. The Boliden Management team annually builds on these business area assessments to evaluate risks and opportunities, and present a risk and opportunity report to the Boliden Board each year.

An annual sustainability workshop is held, to identify the most important topics to address on a Group level. This workshop involves key people throughout the organization and provides an outside-in perspective by gathering input from important external stakeholders, such as investors and local communities. Climate change was identified as one of Boliden's most important topics to deal with in the February 2019 workshop. This led to a Group-wide agreement, at the Group strategy meeting in March, on a 40% emissions reduction target by 2030.

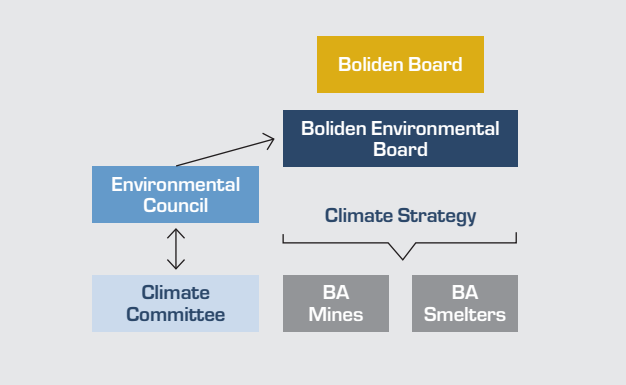
Strategy

The decarbonization of Boliden's business will help it to mitigate the risks associated with fossil fuel dependency, such as those related to rising fuel costs and more stringent future regulations. Decarbonization also presents opportunities to establish cleaner operations in Boliden's mines and smelters, will enhance competitiveness and drive long-term profitability.

By increasing production at its mines, Boliden helps Europe to meet existing challenges in relation to raw materials supply in a world that is demanding more and more metals.

There are some critical conditions and barriers. The necessary development will require both time and capital.

The industry, the public sector and other actors need to work together to bear the cost of the transition, drive technological development and support the achievement of global and national climate goals.



Risks

- The need for mines & the issue of carbon leakage
- Balancing circular economy & climate obligations
- Regulation risks
- Extreme weather

Opportunities

- Resilience – metals for a sutainable society
- Potential for more sustainable metals that command higher premiums
- Financial planning

Risks

The need for mines & the issue of carbon leakage

Boliden's greatest risk is the perception in society that mines are not needed. Authorities make permits difficult to obtain, using increasingly stringent environmental criteria. Moving mining and metal production activities out of Europe may reduce Europe's emissions, but may at the same time significantly increase global emissions. This is known as carbon leakage.

Balancing circular economy & climate obligations

Recovering valuable metals from societal waste can sometimes cause more carbon emissions than sourcing new metal ore. It is essential to find a balance between promoting circular resource use and climate emissions.

Regulation change risks

Changes to regulations and taxes, such as the EU Emission Trading Scheme (ETS), may result in cost increases that jeopardize Boliden's competitiveness in the international market. Decarbonizing more quickly than competitors is Boliden's strategy to mitigate the company's exposure to such future risks. An efficient and reliable permitting process from the authorities is crucial to ensure that new, necessary and climate-smart investments are made possible.

Extreme weather-related risks

Global warming can increase the risk of more extreme weather events as the global climate continues to change. Changes in precipitation might lead to heavier snowfall or flooding that can affect open pit mining operations, or localized flooding and changes in groundwater levels could impact on Boliden's operations. Higher temperatures and storms in the future might also have negative implications on Boliden's operations. All business units shall include weather-realted scenario analyses in their risk assessments.

A more sustainable metal producer should:

- have low CO_2 emissions per metric ton of metal
- ensure an efficient production process and use renewable energy sources
- create minimal waste
- be equipped to recover valuable metals from societal waste
- promote the circular use of newly produced metals

Opportunities

Resilience - metals for a sustainable society

As a leading sustainability metals and mining company, Boliden is well positioned to supply the metals needed for a sustainable society. Copper and zinc, for example, are essential for society's transition from fossil fuels to electrification by enabling solar panels, wind turbines and electric vehicles. Boliden's proactive stance on climate-related issues can differentiate us from our competitors as there will be strong demand for low-carbon metals in a fossil-free society. Boliden is also a leader in recovering valuable metals from societal waste, such as e-scrap, lead car batteries and existing process waste.

Boliden is actively working to reduce the climate footprint of its own operations. This includes working toward the electrification of its mines and the development of low-carbon production processes for its smelters. These areas both require significant R&D innovation and investment, and working proactively with them is essential to enable the supply of low-carbon metals to the market. Establishing itself as a low-carbon metals producer is a major opportunity for Boliden to enhance its reputation and brand.

Potential for more sustainable metals to command a higher premium

Boliden has identified potential customers that will be interested in paying a premium for low-carbon metals. Boliden has opportunities to tap into this market – to enhance profitability while also contributing toward a more sustainable society.

Financial planning

Boliden has a strategic investment program, including investments to mitigate climate-related risks and capitalize on opportunities. The program involves evaluating different actions based on their long-term environmental impact, CO_2 emissions and financial cost.

Targets

1. Providing metals with a low carbon footprint
2. Reduce greenhouse gas emissions by 40% CO_2 intensity by 2030

(Base year 2012)

Strategies/actions

- Produce more metals with a low carbon footprint
- Drive innovation in low carbon processes
- Improve energy efficiency
- Increase recycling
- Develop partnership with business partners
- Increase low carbon transportation
- Capture more CO_2
- Use of fossil-free energy

Metrics and Targets

Boliden's objective is to provide metals with a low carbon footprint, by decarbonizing its operations and supplying low-carbon metals. This will enable Boliden to contribute toward the EU aspirations to achieve net zero CO_2 emissions by 2050 and the Paris Agreement objective to limit the global temperature increase.

Boliden has a comprehensive system to collect and report climate-related data. Key metrics are the aggregated scope 1 and 2 emissions per source and greenhouse gas emissions intensity.

305–1 Direct (Scope 1) GHG emissions

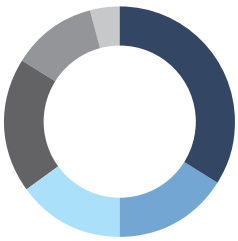
Boliden reports this indicator for the units over which it has operational control. The direct carbon dioxide emissions arise from GHG emissions from carbonaceous raw materials, from fuels in metal extraction processes and fuels for heating, and from the use of fuels for mining operations and road transportation within the company.

The direct emissions are calculated in accordance with the procedures laid down in the WBCSD[1] GHG[2] Protocol, together with additional guidelines from the EU and/or national authorities.

The CO_2 reporting within the framework of ETS is carried out in accordance with separately audited procedures in each country, and although we seek to report the same data, we cannot guarantee that the Group's GRI disclosure will correlate exactly with the CO_2 data reported within ETS.

CARBON DIOXIDE EMISSIONS (SCOPE 1 + SCOPE 2), 2019 PER SOURCE

The total reported CO_2 emissions are 0.918 (0.971) M metric tons for the year.



- Electricity, 34%
- Oil, 16%
- Raw material, 15%
- Coal and coke, 19%
- Diesel and petrol, 12%
- Other, 4%

305–2 Indirect (Scope 2) GHG emissions

Boliden reports this indicator for the units over which it has operational control and includes only production-related indirect emissions. In 2015, Boliden began using location-based emission factors. This was an adaptation to the updated GHG Protocol Guidelines for Scope 2 reporting. The calculation is made by multiplying the energy used with the production mix for the specific region. The production mix should be as current as possible, and Boliden uses emission factors published by International Energy Agency. For the 2019 reporting, the following emission factors were applied: for the operations in Sweden 12.2 (10.8), Finland, 116.6 (106.8), Norway 8.0 (9.0), and Ireland 413.4 (417.6) g/kWh.

CARBON DIOXIDE EMISSIONS (SCOPE 1 + SCOPE 2), 2019 PER SOURCE

Boliden Group

Carbon dioxide emissions, Scope 1+2, metric tons	2017	2018	2019
Direct emissions, (305-1)	605,000	644,000	598,000
Indirect emissions, (305-2)	419,000	327,000	319,000
Total (305-1 + 305-2)	**1,024,000**	**971,000**	**917,000**

Mines

Carbon dioxide emissions, Scope 1+2, metric tons	2017	2018	2019
Direct emissions, (305-1)	192,000	207,000	173,000
Indirect emissions, (305-2)	151,000	134,000	139,000
Total (305-1 + 305-2)	**343,000**	**341,000**	**312,000**

Smelters

Carbon dioxide emissions, Scope 1+2, metric tons	2017	2018	2019
Direct emissions, (305-1)	413,000	436,000	425,000
Indirect emissions, (305-2)	268,000	194,000	179,000
Total (305-1 + 305-2)	**681,000**	**630,000**	**605,000**

305–4 GHG emission intensity

Boliden's GHG intensity was 0.64 (0.64) t/t metal. The GHG intensity is reported as the product emission intensity (metric tons of direct [Scope 1] and indirect [Scope 2] emissions per unit of metal product).

In May 2019, Boliden secured a long-term electricity supply agreement for fossil-free energy from a wind power developer. The agreement involves annual electricity deliveries totaling 240 GWh in Sweden and 175 GWh in Finland. The wind farms will be developed close to Boliden's mining operations in the Boliden area, Sweden, and smelting operations in Kokkola, Finland.

OPTIMIZING MINE VENTILATION

Mine ventilation systems are typically inefficient, with fans in constant operation. Using Wi-Fi that had recently been installed as part of an automation program, Boliden's Swedish mines installed systems to automatically control individual fans to optimally meet the need for ventilation based on the location of mine workers and vehicle operation. The systems reduced the energy consumption for ventilation by between 5 and 55% in different mines during the first year.

Following the success in its Swedish mines, Boliden plans to implement a ventilation optimization solution at its Tara mine in Ireland, which is estimated to save approximately 6,800 MWh of fossil-fuel intensive Irish electricity generation – and to reduce CO_2 emissions by approximately 2,800 metric tons CO_2.

GREENHOUSE GAS EMISSION INTENSITY
t CO_2/t metal

Boliden group

Carbon dioxide emissions, Scope 1+2, metric tons/production volume	2017	2018	2019
Direct intensity	0.41	0.43	0.42
Indirect indirect intensity	0.28	0.21	0.22
Total intensity	**0.69**	**0.64**	**0.64**

Mines

Carbon dioxide emissions, Scope 1+2, metric tons/production volume	2017	2018	2019
Direct intensity	0.37	0.40	0.37
Indirect intensity	0.29	0.26	0.29
Total intensity	**0.66**	**0.66**	**0.66**

Smelters

Carbon dioxide emissions, Scope 1+2, metric tons/production volume	2017	2018	2019
Direct intensity	0.43	0.45	0.46
Indirect intensity	0.28	0.20	0.20
Total intensity	**0.71**	**0.65**	**0.66**

305–5 Reduction of GHG emissions

Boliden strives to deliver the excess heat from its processes for use in district heating, wherever possible. Boliden is also, actively initiating attempted reductions in fossil-fuel emission by means of fuel substitution tests, participation in demonstrations of electrified road transports, and improved heat recovery/exchange with the aim of phasing out the use of fossil fuels for heating purposes.

Recent initiatives have focused on reducing diesel use, which typically has a significant impact on reducing both financial costs and emissions. The majority of projects have involved the promotion of electrification, which helps to mitigate Boliden's exposure to fluctuating oil prices but risks greater dependency on electricity prices and fees.

Heat recovery to reduce fossil fuel use

The mines have to preheat incoming ventilation air in winter when outdoor air temperatures are below zero degrees Celsius, which is typically done with propane gas heaters. Boliden's Garpenberg and Kankberg mines are planning to install heat recovery units in 2021, which will use outgoing mine air to warm up incoming cold air. The projects will reduce the use of propane gas by between 80 and 90%, and realize annual savings of around 2,000 metric tons CO_2 at Garpenberg and approximately 1,000 metric tons CO_2 at Kankberg.

Underground mine electrification – a great opportunity

Underground mines are more difficult to electrify than open pit mines due to the need to combine trolley and battery solutions.

ELECTRIFICATION OF MINING ACTIVITIES

The majority of mine emissions originate from the use of truck diesel. In recent years, Boliden has been involved in the development and testing of electric trolley trucks, and has itself actively developed overhead power line, pole and foundation solutions. Boliden has the policy of sharing all its knowledge and solutions with other mining companies, seeing that the more companies are involved in mine electrification, the more affordable solutions will become and the greater the overall societal benefit will be.

In 2019, the Boliden Board approved funding of 300 million SEK to build trolley power lines at its large open pit mines Aitik (Sweden) and Kevitsa (Finland). This is expected to lower the CO_2-emissions with around 300 000 metric tons throughout the mines' lifespan. Potential savings may be even greater if additional trolley investments are made in the future.

However, the potential for electrification is huge since avoiding underground diesel use will not only reduce vehicle emissions, but will also significantly decrease the need to ventilate diesel fumes from mines. Boliden expects to trial its first trolley and battery hybrid solution in 2022, which will draw experience from the lessons and failures from previous projects by other mining companies. Potentially, profitability will also be boosted by higher diesel prices.

Boliden produces metals with relatively low CO_2 emissions compared to the average metal producer, and continuously strives to improve its processes. The Business Area Smelters invests in technology and solutions that further reduce the carbon footprint and optimize the profitability of its smelters.

Action Programs

Boliden aims to identify multiple pathways toward low carbon smelting and refining. Different technology options for decarbonization have been identified in close cooperation with production experts at the smelters´. Specific innovation support is managed in partnership with research institutes to support the scaling up of R&D to pilot and demonstration plants.

The Business Area Smelters R&D department has several ongoing projects to evaluate various innovative technologies that have the potential to decrease CO_2 emissions and reduce financial costs. Examples include:

- Evaluation of hydrogen and bio-based alternatives as decarbonization options.
- Switching to biofuel oil for process heating
- Investigation of carbon capture and utilization or storage.
- Project with Vattenfall to evaluate renewable energy technologies.

Overcoming major challenges

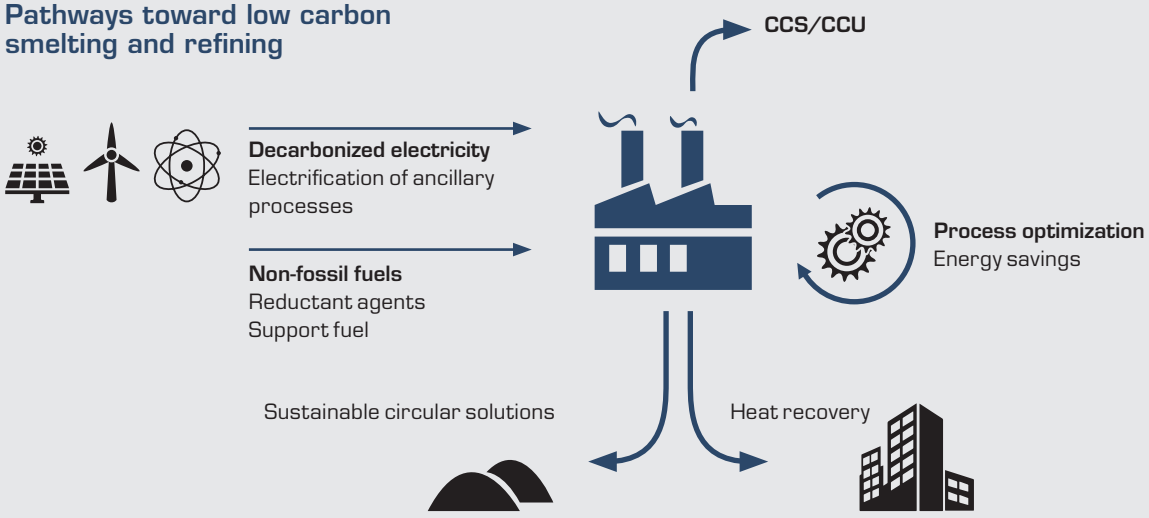
Major challenges include decarbonizing Boliden's smelter processes by finding alternatives to the fossil fuel reducing agents currently used by smelters throughout the Smelter Business Area. To meet Boliden's climate objectives, alternative low-carbon processes are required, which would require significant innovation and investment, as this report highlights, Boliden has both the R&D capacity to develop the innovative solutions required, and the willingness of the company's management to invest in low-carbon solutions that make long-term financial sense.

This approach to difficult challenges ensures that Boliden is well-positioned to achieve its objective of becoming the preferred supplier of metals for a sustainable society – with all the business and societal benefits this entails.

PLASTIC RECOVERY REDUCES EMISSIONS

Boliden's Bergsöe lead smelter, which is one of the largest recyclers of used lead-acid car batteries in Europe, has been upgraded to recycle plastic battery casings – to reduce CO_2 emissions and generate additional value from waste. The plant came into operation in September 2019 and reduces Bergsöe's overall CO_2 emissions by around 10,000 metric tons CO_2, equivalent to over 20% of its total emissions. The plastic separator may also position Bergsöe favorably against future legislative demands, as plastic separation may well become mandatory according to the Best Available Techniques (BAT) EU Emissions directive in the coming years.

Pathways toward low carbon smelting and refining



SUSTAINABILITY TOPIC: WATER

303–1 Interaction with water as a shared resource

All Boliden's units shall have a Water Management Plan. Water conservation is an important part of Boliden's policy. Water management plans consider many critical operational aspects such as water scarcity, pollution and flooding. It is important to have a good understanding of current and future water use. Water risk assessments shall be undertaken regulary to evaluate potential impact on the business, operations, revenues or expenditures.

303–2 Management of water discharge-related impacts

In mining, water is typically used in mineral processing and slurry transport, while in smelting, it is used for cooling and gas cleaning purposes. Boliden's operations do not re-use water from other organizations, but in Harjavalta and Kokkola, waste water from adjacent operations is ducted into Boliden's waste water treatment plants for treatment before being discharged to recipients. These volumes are included in the reported data from the units. All water volumes are based on data from flow meters.

Water recycled and reused (million m³)	2017[1)]	2018[1)]	2019
Recycled volume	115	116	114
Percentage of water recycled	79%	81%	86%

1) Corrected calculations

303–3 Water withdrawal

The water volumes are measured and/or calculated for each site by the use of flow meters and/or the monitoring of pump operating data.

Total water withdrawal by source (million m³)	2017	2018	2019
Surface water (sea)	81	80	74
Surface water (inland)	44	46	40
Ground water	17	16	15
Collected rain water	1	1	1
Municipal water	2	2	2
Total water withdrawal	**145**	**145**	**132**

303–4 Water discharge

Discharges to water derive from dams and tailings ponds at the mines, and from water treatment plants and collection of surface water at smelters and mines. Boliden's smelters account for approximately 80% of metal discharges to water. Boliden's mines account for approximately 80% of the Group's nitrogen discharges with the nitrogen generated mainly from the use of explosives and their handling.

Ensuring efficient and stable operations at water treatment plants and recirculating the process water as much as possible are important parts of reducing discharges to water. Boliden's operations include purifying process water as well as a significant amount of the rainwater that falls within the industrial areas.

Once the water-treatment processes are completed, the smelters discharge their water to the sea while the mines discharge the water into rivers and lakes. The water discharged to recipients is monitored to ensure that levels of pollutants are within the quality standards stipulated in the environmental permit. Accredited laboratories, both internal and external, are used for analyses of samples taken on site.

Water discharge	2017[1)]	2018[1)]	2019
Metal discharges to water, metric tons (me-eq)	74	61	51
Metal discharges to water, metric tons (mass)	15	14	15
Nitrogen /N-tot/ to water metric tons (mass)	236	240	228

1) Updated model for calculation of metal equivalents, based on the framework for Natural Capital Protocol

Discharged water volume (million m³)	2017	2018	2019
To wetland	0	0	0
To inland surface water	57	55	43
To sea surface water	71	78	66
To municipal treatment plants	0.03	0.03	0.03
Total	**128**	**133**	**109**

303–5 Water consumption

The water consumption of Boliden is calculated from the difference between the total water withdrawal and the discharged water volume of Boliden's sites.

Water consumption (million m³)	2017	2018	2019
Total water withdrawal	145	145	132
Discharged water volume	128	133	109
Water consumption	17	12	23

SUSTAINABILITY TOPIC: BIODIVERSITY

304–1 Operational sites in, or adjacent to, protected areas and areas of high biodiversity values

Sites located in or adjacent to protected area can be found in the table below.

Sites	Operation	Country	Size, ha	Protected areas
Aitik	Mine	Sweden	7,498	Yes[1) 2)]
Bergsöe	Smelter	Sweden	13	Yes[2)]
Boliden Area	Mine	Sweden	5,425	Yes[2)]
Garpenberg	Mine	Sweden	1,447	No
Harjavalta	Smelter	Finland	452	Yes[2)]
Kevitsa	Mine	Finland	1,420	Yes[1) 2)]
Kokkola	Smelter	Finland	340	Yes[2)]
Kylylahti	Mine	Finland	654	Yes[1) 2)]
Odda	Smelter	Norway	40	No
Rönnskär	Smelter	Sweden	153	Yes[2)]
Tara	Mine	Ireland	885	Yes[2)]
Old mining areas and forests	–	Sweden	5,281	Yes[1) 2) 3)]

1) In the area
2) Adjacent to (closer than 5 km)
3) Containing portions of area

304–2 Significant impacts of activities, products, and services on biodiversity

Boliden's impacts on biodiversity are above all related to land use in current or abandoned operations. As of 31 December 2019, Boliden owned or controlled 23,600 (23,000) ha of land in connection with existing operations, in areas adjacent to existing or former operations, or in other areas of interest for exploration.

Most operations are located in areas where mining or smelting activities have been carried out for anything between several decades and several hundred years. Some of the older mining and industrial areas are from a time when environmental legislation did not exist and knowledge levels were much less developed than is currently the case, and it is consequently not only impossible to determine an original baseline, but difficult to quantify the precise long-term impact of the activities. For every operation there is a permit process. During the environmental permitting process, it is necessary to define the location related to conservation areas and to assess the possible impacts on biodiversity. After closing the operation, the land area has to been restored to base state. Boliden always ensures that the areas occupied by smelters can be reclaimed after the operation's closure.

Closure and remediation plans, including biodiversity aspects, are a mandatory part of the environmental permit issued to operate a smelter. For time-limited operations, such as mines, Boliden always ensures that the areas can be reclaimed after mine closure. Strategies are constantly being developed for the definition of proper compensation measures for application when utilizing land and thus causing a loss of biodiversity. Closure and remediation plans, including biodiversity aspects, are a mandatory part of the environmental permit issued to operate a mine.

304–3 Habitats protected and restored

All land and forests owned or leased are managed in forest management plans for each site. Each forest management plan has a register divided into separate areas and linked to maps showing them. Protected areas and discoveries of protected and listed species are registered and described as well as areas with high value forest for future development to raise the values. None of the operational sites, including the protected areas, are considered to be in high biodiversity areas.

For new mining projects a specific inventory of natural values is always carried out early on in the project to enable development of the project according to the mitigation hierarchy.

All inventories and how the project development has proceeded according to the mitigation hierarchy is described in the application for an environmental permit.

Boliden has also initiated one of Sweden's most comprehensive research projects investigating ecological compensation in collaboration with the Swedish University of Agricultural Sciences (SLU).

The abandoned mining site of Näsliden, where after-treatment has been carried out in consultation with local residents to create ecological and social added value is, another example of Boliden's approach.

304–4 IUCN Red List species and national conservation list species with habitats in areas affected by operations

Boliden continues to monitor and manage the areas that have been reclaimed for an indeterminate period of time, and this may, if necessary, entail implementing additional measures in already reclaimed areas. Where appropriate, reclamation is done in partnership with affected land owners.

There are various types of protected areas in the vicinity of the majority of Boliden's mining operations, such as wildlife and plant sanctuaries, key biotopes, protected watercourses of national interest, nature reserves, and Natura 2000 areas.

A list of prioritized reclamation objects has been been prepared which is updated on the basis of the results of studies showing changes in the status of the respective objects. An object may be anything from measures designed to improve dam safety, or large-scale ground installation projects, to out-and-out nature conservation in the form of water treatment, planting, or the installation of nesting boxes for birds. Boliden's interventions in older abandoned mining areas are often aimed at complementing the old techniques with new and improved methods.

Habitats restored	Type of activity	Size, ha	Start	End
Rävlidmyran	Reclamation work	1	2017	2018
Långdal	Reclamation work	1	2019	2019
Långsele	Reclamation work	5,5	2018	2019
Gillervattnet	Reclamation work	300	2014	2019-21
Näsliden	Reclamation work	7	2015	2018
Holmtjärn	Reclamation work	3	2018	2019
Old Forests Aitik	Ecological compensation	837	2017	2022

Ecological compensation work has been ongoing at Boliden Aitik since 2017. Two areas totalling 837 hectares were selected for the compensation work. The goal is to maintain the value and, in parallel therewith, increase natural values in the near vicinity of the Aitik mine. The compensation plan includes both protection of selected areas and more active measures such as relocation of dead wood and biologically important species such as insects in hibernation and wood mushrooms. Boliden has also identified an opportunity for improving the prospects of recreational and adventure tourism. During 2019 additional dead wood has been tranported to the compensation areas. Dead wood has also been created at site and a trail has been marked and prepared for recreation.

MM1 Amount of land disturbed or rehabilitated

Mining companies can often own or hold licenses over very large areas of land. The extraction sites, infrastructure, or other production activities will often disturb a small proportion of that land holding.

Soil conservation and the reclamation of mining areas which have reached the end of their productive lifespans are part of Boliden's operations and responsibility. The reclamation programs are designed to reduce the impact on surrounding areas of land and local biological diversity. Boliden has made ongoing provisions of funds for future rehabilitation. At the end of 2019, a total of SEK 5,086 (4,016) million had been allocated for future reclamation of mining areas and smelters.

Land management (ha)	2017	2018	2019
Total land holding	23,000	23,100	23, 600
Disturbed and not yet rehabilitated (opening balance)	6,805	6,881	7, 050
Disturbed in the reporting period	78	217	168
Rehabilitated in the reporting period	2	48	1
Disturbed and not yet rehabilitated (closing balance)	6,881	7,050	7, 217

New mines and the expansion of existing businesses

The establishment of new mines and the expansion of existing businesses require land utilization. The aim is to have minimum possible impact on biodiversity. Boliden's operations shall be sustainable throughout the chain from prospecting and production to post-processing, and in the long-term. Boliden takes responsibility for the impact of its business operations and works proactively on loss of biodiversity and ecosystem services. In practice, this means that Boliden not only avoids or minimizes the negative impact, but also adds or creates new values. The work is based on the four steps of the so-called harmless hierarchy; avoidance, minimization, restoration and offsets.

All of the relevant areas' natural and cultural values are inventoried in an EIA, (Environmental Impact Assessment). The EIA makes it possible to measure the effects on the flora and fauna before, during, and after any operation is carried out. This inventory, or baseline, can be used as a reference when planning and utilizing the remediation actions. EIAs are also carried out and a current baseline established in conjunction with changes to existing operations.

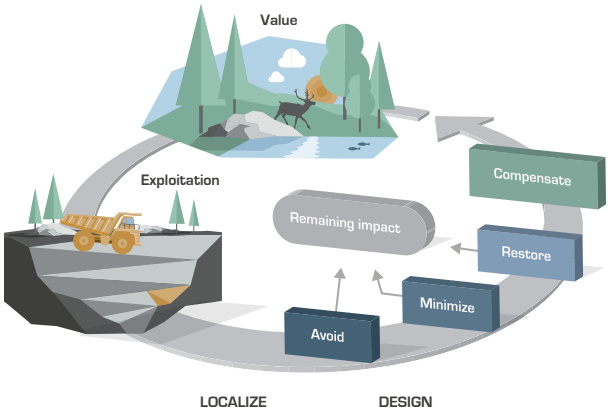
During operations, different types of monitoring programs are set up, both according to permits and voluntary. The programs involve evaluation , for example of fish, algae in water and mosses, berries, fungi, reindeer grazing species, moor frogs, smews and tufted ducks. Ecological rehabilitation and compensation is continuously ongoing in several operations.

The majority of Boliden's acreage in northern Scandinavia is adjacent to reindeer grazing land and Boliden prioritizes in-depth dialogues with representatives of the reindeer industry to ensure the optimum protection of their interests. This may, for example, entail ensuring that the reindeer herds can roam freely between grazing areas, or that grazing land is, as far as possible, maintained in an undisturbed condition and that the lichen and plants on which the reindeer feed are included in the flora planted when areas are reclaimed.

Boliden owns 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 has assigned approximately 10% of its productive forested land for nature conservation. This area is partly protected through the establishment of nature conservation land, key habitats and habitat-protected areas, and partly managed to promote nature-conservation interests. The areas protected by Boliden mainly comprise older forests, wetland, and areas dominated by deciduous forest. Over time, some of the older forests are becoming more and more primeval. In areas dominated by deciduous forest, forestry is conducted in a way that prioritizes deciduous tree species. On the productive forested land, Boliden manages the forestry from a landscape ecology perspective.

In previous years, the Group's forestry management in these areas has included prescribed felling, which is intended to benefit deciduous wooded pastures, and controlled burning in order to promote certain species and biological diversity. By adapting forest management in areas used for outdoor recreation, social values are created and maintained. Boliden's ambition is for the wildlife on Boliden's land to be in harmony with forestry, hunting, and other public interests. Current long-term plans extend for at least ten years and include remediation, planned measures, and allocated funding for a number of abandoned pit mines. Boliden is constantly working to develop new options for restoring impacted ecosystems and to identify opportunities to compensate for impact through offsets.

Boliden's operations take advantage of exploration, mining, enrichment and transport. Boliden consequently conducts ongoing work designed to minimize the social and environmental impact.



SUSTAINABILITY TOPIC: AIR POLLUTION EMISSIONS

305–7 Significant air emissions

Other significant air emissions deriving from Boliden's operations are nitrogen oxides (NO_X), sulphur oxides (SO_X), metals, and dust. The most common of the sulphur oxides (SO_X/SO_2) is sulphur dioxide, and Boliden generally uses the expression 'sulphur dioxide' to describe this emission. The figures for sulphur dioxide and NO_X disclosed in the table are the direct measured emissions from sources at Boliden's smelters. The figures for metals and dust include direct-measured emissions from smelter stacks, but exclude diffuse emissions.

Diffuse emissions are generated at both mines and smelters and the environmental impact is due to dust particles containing metals being dispersed by the wind. All operations are working systematically to reduce particle emissions to air, e.g. by enclosure of dust-generating equipment and by salting and watering roads. The diffuse emissions are monitored, but are difficult to quantify in an aggregated manner.

Emission Reduction Efforts

Boliden's efforts to reduce emissions are based on an overall analysis of the environmental impact. The impact and risk assessments are revised on a regular basis, as are the measures to be taken. The work is controlled and conducted by each individual business unit, as local circumstances may differ. Follow-up at the Group level is conducted on a monthly basis.

Sulphur dioxide emissions to air are mainly attributable to gases generated during the smelting processes at the Harjavalta and Rönnskär copper smelters. The amount of sulphur dioxide emitted during the process depends on factors such as process stability, the efficiency of gas cleaning systems, and the amount of sulphur in raw materials. Thus, one way of reducing emissions is to maintain a stable smelting process and to conduct ongoing, effective maintenance work and process control. The monitoring and control of abatement systems for effective gas cleaning is important work and is carried out continuously.

The SO_2 emissions to air decreased in 2019 following investments and improvements of sulfuric acid facilities at Boliden Smelters previous year. Increased metal emissions to air mainly derive from diffusive emissions of zinc in the Kokkola smelters.

Emissions to air are mainly based on periodic monitoring in accordance with applicable national standards. Emissions from fuel are calculated using the fuel properties data provided by the supplier. Accredited laboratories, both internal and external, are used for the analyses of samples taken on site.

Emissions to air (metric tons)	2017[1)]	2018[1)]	2019
NO_X	450	450	450
SO_2	7,360	7,720	6,240
Particulate matter	193	181	164
Metal emissions to air (me-eq)	99	74	69
Metal emissions [1)] to air (mass)	21	19	26

1) Updated model for calculation of metal equivalents, based on the framework for Natural Capital Protocol

SUSTAINABILITY TOPIC: SUSTAINABLE RESOURCE USAGE AND WASTE

306–2 Waste by type and disposal method

Boliden has developed processes to extract as much value as possible from the material streams at mines and smelters. Some hazardous waste is sent for disposal or stabilization, in some cases to landfill and deep repository.

Correctly processed waste can be turned into valuable products. Approximately 45% of the process residues generated are sent to another Boliden site for metals recovery or final deposition. What is considered waste for one operation can often constitute a raw material for another. Appropriately handled, the trade in waste and by-products can be of benefit to society by increasing overall resource efficiency. Boliden works continuously to identify internal and external recycling or landfill solutions for any process wastes generated. Boliden receives significant amounts of waste from external parties for recycling, construction purposes or safe deposition in landfills.

The export of waste to landfill or for recycling is extensively regulated. Boliden has also developed procedures for monitoring and following up on the receiving party's processing operations to ensure that their waste processing is acceptable from a health and environmental viewpoint.

The secondary raw materials for Boliden smelters, i.e. electronic scrap and waste batteries, contain plastics that are incinerated in the process. The incineration of the plastics serves as a reducing agent in the metal production. The excess heat from the process is used for district heating.

Waste by type and disposal method (metric tons)	2017	2018	2019
Hazardous waste, total	**865,000**	**869,000**	**886,000**
Landfill (storage)			
Internal	839,000	843,000	861,000
External	400	1,800	2,600
Recycling	26,000	24,000	22,000
Non-hazardous waste, total	**332,000**	**279,000**	**249,000**
Landfill (storage)			
Internal	278,000	222,000	175,000
External	1,600	2,200	2,200
Recycling	52,000	55,000	72,000

MM3 Waste types and disposal methods including overburden, rock, tailings and sludge, and their associated risks

Boliden processes a number of different metals and substances that are both toxic and environmentally harmful. The mining and smelting operations generate residual waste consisting of waste rock, tailings, slag, sludge, and dust. There is considerable awareness of the importance of waste issues within the Boliden Group, e.g. waste sorting, significant recycling of process residues and scrap, good reporting procedures and ongoing waste projects. Boliden's wastes are managed in accordance with the EU Directive on the Landfill of Waste and the Mining Waste Directive. Waste rock dumps are covered continuously, in order to prevent weathering and leaching. Boliden's mine waste is handled in accordance with applicable environmental permits that specify how and where it may be stored and how it shall be covered and reclaimed.

Extensive monitoring programs are in place to ensure a high level of dam safety and several measures to increase dam safety have been finalized or are in progress. Boliden is responsible for around 40 dam facilities in Sweden, Norway, Finland, Ireland, and Canada. They are used, or have been used to deposit tailings or for other water management. This figure includes both operational and decommissioned facilities. Dam facilities are managed according to mining industry guidelines for dam safety.

Waste rock tonnage is based on calculations of volume and density. Tailings are based on calculations of tonnage of ore minus tonnage of concentrate output.

Waste from extractive industries (metric tons)	2017	2018	2019
Reuse (backfilling)			
Waste rock	5,417,000	8,892,000	8,887,000
Tailings	2,729,000	3,182,000	3,174,000
Waste rock (dumps)	35,485,000	49,619,000	50,180,000
Sold waste rock	404,000	5,400	5,900
Tailings management facility	44,191,000	48,844,000	51,677,000

Waste rock from underground mines that goes directly to backfilling is not considered as waste and should not be reported as waste.

There are no statistics available for overburden as it is seldom that any overburden exists. Sludge that is not reused in the process accounts for an insignificant percentage of either hazardous waste or non-hazardous waste, depending on its properties.

Tailings are from underground mining operations, i. e. from the concentrator and, are, to a certain extent, used as back-fill, both as reinforcement and to reduce the amount of tailings above ground. Some waste is sent for final storage in underground facilities.

In 2019, the constrcution project of the 750 m SEK investment in a new leaching plant at the Rönnskär site was started. This will enable waste material that has been stored at the site since 1975 to be reprocessed. The 460k metric tons of waste material currently held will decrease to 220k metric tons. The remaining 220k metric tons will be stored in a deep underground repository, located under the Rönnskär smelter plant. The deposition of waste material in the repository will commence in 2020. This is a globally unique solution. It is the only place in the world where a deep underground repository shares a site with a smelter. Boliden has no organic waste material other than small amounts from canteens, which are sent for municipal treatment.

Boliden does not practice deep well injection or waste incineration.

306–3 Significant spills

A total of 37 (36) moderate (more than 150 liters) oil and/or diesel spills, were reported from Aitik, Boliden Area, Garpenberg, Kevitsa and Rönnskär. All spills occurred within the site area. All spills were immediately sanitized and any contaminated soil was excavated. These events have not entailed any significant environmental impact or caused lasting harm to the surroundings. Investigations have been conducted in conjunction with all of the incidents in order to ascertain the causes of the spills and, wherever possible, to institute measures that will prevent any repeats.

During Q3 there was an increased discharge of metals to water at the Rönnskär smelter.

306–4 Transport of hazardous waste

Processing of intermediate and waste products is a natural part of Boliden's value chain in order to maximize metal recovery levels. In some cases, however, hazardous waste is sent for disposal or stabilization, and/or to external landfill and deep repository. During 2019 6,500 (7,300) metric tons were sent for external use, treatment, or recovery and 2,600 (1,850) metric tons were sent for external disposal.

SUSTAINABILITY TOPIC: ENVIRONMENTAL COMPLIANCE

307–1 Non-compliance with environmental laws and regulations

Boliden was not hit by any significant corporate environmental fines in 2019.

Due to a discharge of metals to water in the Rönnskär smelter during Q3 in 2019 Boliden may receive a fine in 2020-2021. The fine for the discharge is expected to be minor.

SUSTAINABILITY TOPIC: BUSINESS PARTNER ENVIRONMENTAL ASSESSMENT

308–1 Percentage of new suppliers that were screened using environmental criteria

Boliden has identified both environmental and social topics as material sustainability topics. The integrated handling of these in Boliden's Evaluation of Business Partners processes is further explained in the GRI 414 section of this report.

ENVIRONMENT – PART OF UN GLOBAL COMPACT

Principle 7: Boliden should support a precautionary approach to environmental challenges.

Boliden's environmental commitments are based on the company's values and driven by the need to reduce environmental impact. Boliden strives to maximize the environmental benefit in relation to the resources invested. Legal requirements and Boliden's commitments shall always be met.

Principle 8: Boliden should undertake initiatives to promote greater environmental responsibility.

Boliden provides metals and related products to achieve the environmental goals of the modern society, including climate actions and efficient energy use. Boliden strives to minimize the use of resources such as land, water and energy. Boliden operates in a manner that reduces the impact on the surrounding communities from active and closed operations. Performance and examples are presented in the Annual and Sustainability Reports as well as in this Sustainability index.

Principle 9: Boliden should encourage the development and diffusion of environmentally friendly technologies.

Boliden systematically works with continuous improvements and innovations and our operations shall implement and maintain environmental management systems according to ISO 14001.

Boliden strives to effectively reuse and recycle Materials and develop solutions for valuable Materials to find their way back into the economy.

Social

In order for Boliden to have top-quality operations, processes and products, it is crucial to have employees who are skilled, committed, and who take personal responsibility. In return, Boliden offers its employees a safe and inspiring work environment. Boliden follows up on its social performance through a range of performance indicators on a regular basis.

SOCIAL TARGETS 2019

Occupational health and safety	Zero accidents (LTI)
Gender equality	Target 2020: at least 20% proportion of females in total work force
Sick leave	Sick leave rate below 4.0%

The performance is presented in the Annual and Sustainability Reports.

SOCIAL TARGET 2020 AND BEYOND

Occupational health and safety	Zero accidents resulting in absence from work
Proactive approach to safety	Proactivity Index higher than 5.0 Employee engagement in safety to be at 100% Continuously improvement on Risk Class 3 Ratio (RC3F)
Sick leave	Sick leave rate not exceeding 4.0%
Talent management	The workforce shall comprise at least 20% women
People management	Staff turnover not to exceed 6.0%

The table shows part of Boliden's environmental performance indicators that are followed up on monthly, quarterly or annual basis.

401–103 MANAGEMENT APPROACH SOCIAL

Employment and labor principles

Boliden considers the ability to recruit, develop, and retain competent employees as a prerequisite for its success. It is important to achieve a balance between the company's capabilities and commitments. This means having the right skills in the right place, at the right time. The employees are our best ambassadors when it comes to attracting new employees to join the company. Another prerequisite for successfully attracting and retaining good employees is that Boliden offers a work environment that balances work and leisure time. Good health is not only positive for the individual but also for Boliden's success.

The company's talent pool, and the skills and knowledge possessed by Boliden's employees are vital if Boliden is to achieve its strategic and operational objectives. By identifying important future competence challenges, employees and managers are afforded the opportunity to develop skills in line with Boliden's strategic goals.

Work on competence development and recruitment is also based on the Group's strategic goals of contributing to diversity and increased equality. Operating in a male-dominated industry, in regions with limited recruitment bases and keen competition for engineers with specialist training is a challenge.

All Boliden employees are covered by collective bargaining agreements.

Health and Safety

Occupational health & safety is Boliden's most important issue as it involves the wellbeing and, ultimately, the lives of Boliden's employees and contractors. A more coaching leadership with a focus on creating a personal willingness among employees to work safely; proactive metrics and the inclusion of psychosocial work environment issues are all important parts of Boliden's health & safety work. Every year, a large number of workplace visits and trainings are conducted focusing on improving the safety culture.

Boliden faces major retirements, competes for a scarce supply of relevant competences, and is located in rural areas – the ability to offer a work environment dominated by foresight, development, and employee care is crucial to the business. Supplier assessment for sound and safe labor practices is vital for Boliden's ambition to be the sustainable first link in metal value chains.

Training and education

Keeping all employees updated with regard to technological, functional, and leadership skills is essential to Boliden's performance. Every employee should be able to influence his or her own development and Boliden should provide resources and opportunities to make sure that employees have the right skills to perform their assignments safely and efficientlyat all times. Boliden has a number of internal programs for career and skill development.

Diversity and equal opportunity

Boliden believes that diversity leads to dynamism, creativity, and, ultimately, to greater profitability and that it is a resource for achieving its company goals. Boliden's commitment to diversity is clearly stated in its Code of Conduct and in the Diversity Policy, which have been approved by the CEO. Boliden and its employees shall:

- Refrain from all forms of discrimination and harassment on the basis of gender, ethnicity, age, disability, religion, sexual orientation, or any other factor.
- Always focus on the person's competence, and disregard topics such as gender, ethnicity, age, disability, sexual orientation, or other circumstances.
- Strive to ensure that Boliden is perceived as an equal opportunity employer in every respect described above.
- Support employees in their ambition to achieve a healthy work-life balance.
- Forcefully act against and counter any incidences of discrimination or harassment.

Non-discrimination

Boliden does not accept any form of harassment, discrimination or other behavior that may be regarded by colleagues or close relatives as abusive or degrading. It is the responsibility of all Boliden employees to comply with the guidelines set out in Boliden's anti-victimization policy and instruction.

Rights of indigenous peoples

Operations in northern Sweden and northern Finland are located in the reindeer-herding areas. Boliden promotes open dialogues and long-term cooperation with Sami communities in order to mitigate the negative impacts of its mining activities on local people and the environment.

Resettlement and closure planning

Boliden's operations involve land use for mining, industrial areas, and ponds for use as tailings and clarification ponds. Thus conservation and reclamation of mining areas which reach the end of their production lifespans form part of Boliden's operations and responsibilities. The goal is to use the best available technology, complemented by ongoing monitoring of work that has been carried out.

Society

Boliden's business is based on the strategy of responsible mining and minimizing impact on other interests, the environment, society, reindeer herding etc. The strategy for society is proactive and continuous dialogues, as well as voluntary commitments and business agreements with stakeholders. Boliden strives to reach agreements through good cooperation – based on respect and understanding of other interests and stakeholders.

The topics focused on are local communities, anti-corruption, anti-competitive behavior, compliance, and resettlement.

Social Grievance Mechanisms

Effective grievance mechanisms play an important role in remediating impacts for labor practices. All Boliden employees can file grievances via managers, HR functions or union representatives. Anonymous grievances can also be filed via Boliden's whistleblower function; for more information see section 103-1.

Boliden's business partner management program

Boliden sources raw materials, energy, services and equipment from various external suppliers around the world. Boliden also sells its products to an international market. Operating in a global market with varied legislation, labour and environmental standards, and business ethics requires a comprehensive approach to risk management throughout the value chain. Boliden is aware of the importance of its suppliers and customers working as responsibly as its own organization. Therefore, Boliden's Business Partner Code of Conduct reflects the same high standards required by its own organization. The business partner management program is decribed in Boliden's Annual and Sustainability Report .

Working with suppliers to improve Boliden's value chain

BecauseBoliden believes in supporting its business partners to improve its corporate responsibility efforts, deviations from the Business Partner Code of Conduct are primarily handled by agreeing on a corrective action plan together with the business partner.

Boliden works actively to promote best practices among its supplier and customer base in order to work beyond compliance and further improve its value chain. For example, Boliden encourages its business partners to push for the same high level of standards as those set out in the Code in their own supply chain. Boliden is also a member of networks ffor sharing best practice experience, such as the Swedish Network for Business & Human Rights. Working together with business partners is a reciprocal process where all parties learn from each other and improve over time.

Boliden's Business Partner Code of Conduct is available on the Boliden website.

Management of Hazardous waste and Conflict Minerals

Boliden complies with all national legislation and international guidelines such as the OECD guidelines for the trade in material and waste. When dealing with hazardous waste, Boliden applies a policy that means that no payment is made until the material has been properly handled by the business partner. Visits and audits are carried out to ensure that the waste is handled correctly and that the policy is complied with. The process also ensures that secondary and primary raw material suppliers do not come from conflict areas by, among other things, by requiring origin documentation for all raw materials purchased.

Boliden's policy states that no concentrates or secondary raw materials may be acquired from areas with armed conflict. Boliden's business partner management program promotes transparency throughout the supply chain, especially for raw materials where country-of-origin documentation shall be provided for all raw materials so that Boliden can verify that the material does not originate from conflict regions. Boliden's ESG Evaluation of Business Partners helps to verify that its secondary and primary raw materials suppliers do not source conflict minerals.

SUSTAINABILITY TOPIC: EMPLOYMENT

401–1 New employee hires and employee turnover

Boliden aims to have a diverse workforce in all of its operations. Boliden has instituted a policy aimed at facilitating its goal of female employees constituting 20% of the total workforce by 2020.

Total number and rate of new permanent employee hires by age group, gender and region

	2017		2018		2019	
	Number	%	Number	%	Number	%
Group Total	**449**	**8**	**483**	**8**	**537**	**9**
<30 years	163	36	181	37	211	39
30–50 years	238	53	260	54	271	51
>50 years	48	11	42	9	55	10
Men	333	74	376	78	399	74
Women	116	26	107	22	138	26
Sweden	312	69	284	59	364	68
Norway	13	3	20	4	34	6
Finland	113	25	162	34	127	24
Ireland	10	2	16	3	12	2
Other countries	1	0.2	1	0.2	0	0

Total number and rate of employee turnover by age group, gender and region

	2017		2018		2019	
	Number	%	Number	%	Number	%
Group Total	**323**	**6**	**381**	**7**	**376**	**6**
<30 years	39	12	45	12	53	14
30–50 years	119	37	171	45	144	38
>50 years	165	51	165	43	179	48
Men	268	83	307	81	296	79
Women	55	17	74	19	80	21
Sweden	185	6	245	8	215	6
Norway	14	5	14	5	24	8
Finland	108	7	97	6	104	6
Ireland	15	3	24	4	33	6
Other countries	1	8	1	9	0	0

401–2 Benefits provided to full-time employees that are not provided to temporary or part-time employees

Boliden offers a comprehensive and competitive package of market-rate salaries, benefits, and bonuses.

Profit-sharing program

The profit-sharing program for all employees: a profit share is payable when the return on capital employed reaches 8%. The maximum profit share of SEK 30,000/full-time employee is payable when the return on capital employed reaches 18%.

Significant locations of operations

While the benefits offered by Boliden are similar at all Boliden operations, they are not identical due to legislative differences between the different countries. Examples of these differences include parental leave, parental pay, and opportunities for working shorter hours during the early childhood years. In Sweden, Ireland, and Norway, for example, Boliden provides compensation for employees on parental leave as a complement to the compensation from the social security systems in these countries. In Finland, all compensation for employees on parental leave is paid exclusively by the social security system.

Below is a description of the benefits offered to our employees by significant locations of operations, defined as the countries where our production facilities are located.

Finland

Boliden's employees in Finland have valid contracts of employment regulating their salaries and other general working conditions. Furthermore, all employees, including temporary workers and those working part time, receive benefits in addition to those included in the collective agreements and individual employment contracts. These benefits are health care, employers' liability insurance (statutory), travel insurance (only for working trips), leisure time accident insurance, sports insurance (in special cases), insurance against treatment injury (statutory), group life assurance (statutory), employment pension insurance (statutory), workmen's compensation insurance, and maternity/paternity leave. All employees benefit from the various leisure and healthcare activities provided by the company.

Ireland

Boliden's employees in Ireland are paid salaries and allowances as well as shift premiums as outlined in collective agreements and/or individual employment contracts. Employees are, furthermore, entitled to the following benefits: life assurance, health insurance (subsidized or fully paid), access to company healthcare, disability coverage (white-collar employees only), pension, bonuses, retirement provision, maternity/paternity leave, annual leave and public holidays, and the reimbursement of travel and other work-related expenses.

These benefits are provided to all full-time and part-time employees (sometimes proportionately) as well as to employees who are on a fixed-term contract. Summer students and temporary employees on very short-term contracts, however, are not entitled to all of the above benefits.

Norway

Boliden's employees in Norway have valid contracts of employment regulating their salaries and other general working conditions. Employees are, furthermore, entitled to the following benefits: life assurance, travel insurance (official company journeys), health insurance (fully paid), disability coverage, defined contribution of 5 or 8% from base salary, and a defined benefit of 70% (incl. state pension) of salary between 62 and 67 years of age, optional loans for consumer goods (max. NOK 30,000), maternity/paternity leave (10% paid by company), annual leave and public holidays, and reimbursement of travel and other related expenses.

The benefits do not differ between full-time and part-time employees. Temporary workers, however, are not entitled to consumer-goods loans or to company pensions. Temporary workers on short-term contracts (e.g. summer students) are only entitled to life assurance, travel insurance (official company journeys), and disability coverage.

Sweden

Boliden's employees in Sweden have valid contracts of employment regulating their salaries and other general working conditions.

All employees, including temporary workers and part-time workers, also have benefits in addition to those included in the collective agreements and individual employment contracts. All permanent employees in Sweden (including part-time workers) are entitled to the following benefits: life assurance, health insurance and disability/invalidity coverage, healthcare fund, dental care, parental-leave agreements, retirement provision, company profit-sharing scheme, and company bonus schemes. All employees are, furthermore, included in the various leisure and healthcare activities arranged at the different units.

Temporary workers receive the following benefits: life insurance, health insurance, and disability/invalidity coverage. The level of all these benefits is higher than that stipulated in national legislation.

In addition, Boliden offers one free counselling session before retirement to all white-collar employees in Sweden.

MM4 Number of strikes and lockouts exceeding one week's duration, by country

During 2019 Boliden experienced a strike in Finland exceeding one week's duration. The Electricity Union strike began on December 5 and continued uninterrupted until the end of 2019. The strike covered 28 people in Boliden Kokkola. Due to the strike, we had to restrict production. Boliden enjoys good relations with the different unions and there is, from Boliden's perspective, a mutual trust. Boliden supports active cooperation between employers and employees and their respective representatives in every area of shared interest. For a number of years now, the Group has had an agreement with trade union organizations with regard to union-related cooperation at all levels within the Group.

The employees have three representatives on Boliden's Board of Directors. Boliden also has a Works Council comprising employee representatives from all of the countries in which Boliden operates. At a local level, employee representatives/union representatives sit on a number of different councils relating to employee management, production planning, and health and safety, etc.

The frequency of dialogue ensures a constant flow of relevant information, enabling the unions to understand how Boliden is performing and promoting a two-way dialogue on strategic matters.

SUSTAINABILITY TOPIC: OCCUPATIONAL HEALTH AND SAFETY

403–1 Occupational health and safety management system

All Boliden units have occupational health&safety management systems in line with OHSAS 18001:2007, which is currently being upgraded to ISO 45001:2018.

403–2 Hazard identification, risk assessment, and incident investigation

All units have procedures for risk assessments, hazard identification, incident reporting, and safety inspections. Boliden also promotes initiatives designed to involve employees on a more informal basis by encouraging them to submit suggestions for health and safety improvements. Risk assessment is a requirement of ISO 45001:2018 and the certified Boliden units are consequently audited internally and externally on their risk assessments processes and performance.

Some parts of Boliden's workplaces involve a risk of exposure to lead which could lead to lead poisoning. Illness is preventable by avoiding exposure to lead and Boliden constantly measures its employees' lead levels in order to assure their health. Internal exposure requirements are set higher than legal.

403–3 Occupational health services

All Boliden employees have access to occupational health services in the form of internal and external facilities.

Workplaces are regularly checked with regard to exposure, ergonomics, air quality, noise, and vibrations as part of Boliden's occupational hygiene monitoring programs. The results are analysed, actions taken when called for, and reported to the authorities. Employees are screened regularly via the occupational health services provided at the workplace to ensure that each individual is fit to perform his or her assigned duties. Any sign of illness that could be associated with work is documented and reported.

403–4 Worker participation, consultation and communication on occupational health and safety

Boliden's Top Management meets with union representatives four times per year inline with the European Workers' Council Directive. Worker participation, consultation and communication on occupational health and safety is also a requirement of ISO 45001:2018, which Boliden follows.

Boliden has also developed additional Group Safety Standards which emphasize daily H&S pulse meetings with worker participation. Boliden has health and safety committees at all workplaces where more than fifty employees are working on a regular basis. More than 95% of the workforce is represented by health and safety committees. The health and safety committees identify potential hazards, evaluate these potential hazards, recommend corrective actions, and follow up on implemented recommendations. The health and safety committees hold regular meetings and carry out workplace inspections. The committee members are also available to receive worker concerns and recommendations, to discuss problems, and to provide input into existing and proposed health and safety programs.

Boliden conducts biannual safety culture surveys where all employees are provided with an opportunity to assess both leadership and colleagues safety priority. This is a key activity as part of the workers' participation program designed to improve H&S even further.

403–5 Worker training on occupational health and safety

Worker training in occupational health and safety is a requirement of ISO 45001:2018. Boliden holds annual BeSafe days where all workers are given an opportunity to participate in various form of H&S training. There are also many formal H&S training courses conducted yearly on such subjects as evacuation, fire prevention, first aid and working at height. All operations also regularly provide health & safety training for employees and contractors, to improve knowledge and create a personal commitment to work and act safe at the workplace. More than 200 of Boliden's leaders participated in a Masterclass Safety Leadership Training during the period 2018-2019. A program to train informal leaders to safety ambassadors (Safety Savvy) has also begun at a number of production units.

403–6 Promotion of worker health

Boliden has a zero-harm philosophy with regards to accidents at work. The goal for each unit is zero accidents every month. Low absentee rates and low injury rates can generally be linked to positive trends in staff morale and productivity. Boliden has a responsibility to create structures, procedures, and other conditions for a safe working environment. Equipment, instructions, risk assessments, incident reporting, safety audits, and inspections all help safeguard the individual's safety. Boliden continuously invests in safer machinery and equipment. Whatever the efforts that are put into systems and techniques, however, they will not be sufficient without decisive action on the part of each individual in the form of his or her own behavior. Every individual shall be personally willing to act safely. The principle of 'production is important but your health and safety is more important" must be clearly established in every employee's mind. This message is communicated clearly during the annual BeSAfe Days.

The number of lost time injuries among decreased during 2019 from 77 to 69. The overall reduction of LTI frequency was 14% compared to 2018. The level of contractor accidents reached an all-time low level.

This is due to the continued focus on leadership commitment, preventive risk management, and increased involvement in health & safety-related activities. Other important activities which have contributed to the positive results are increased knowledge of how to handle organizational and social work-environment challenges such as stress, unhealthy workloads, and the need for a good work-life balance.

The sick leave rate was stable 2019. The focus has been on increasing managers' involvement in the prevention and rehabilitation of ill health during the year. Boliden is reviewing both its rehabilitation work and the potential for finding alternative work that can be performed by employees who are partly injured or have temporarily impaired health. Short and long-term absence has been monitored, as of 2015, in order to identify the reasons for variations in sick leave between operations. Every operation has an activity program designed to promote employee health. Boliden's systematic health and wellness work is based on prevention as well as rehabilitation. A large number of the preventative activities managed by the units focus on identifying lifestyle and environmental factors that may have a negative impact on the level of diseases for some employees. Employees are encouraged to keep fit and to participate in various sporting activities. Anti-smoking and healthy eating campaigns are carried out on an ongoing basis.

403–7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships

Prevention and mitigation of occupational health and safety impacts directly linked by business relationships is a requirement of ISO 45001:2018. Boliden has well-established routines to engage suppliers and contractors in the H&S work, whereby contractors are encouraged to participate in daily pulse meetings covering H&S.

403–8 Workers covered by an occupational health and safety management system

All employees and contractors working in Boliden's 11 units.

403–9 Work-related injuries

The number of accidents leading to absence from work (LTI) decreased by 14% in 2019 from 5.1 to 4.4 per one million hours worked. In 2019, 40 (30) accidents resulting in absence from work were reported at Boliden's units by Boliden employees. The most common form of accidents are slip, trip and falls and finger/hand injuries during work with hand tools. Most of the injured persons are back at work after 1-3 days of absence. More than 80 % of the LTI´s are not regarded to be serious accidents . The number of accidents resulting in absence from work, including contractors, was 69 (77). The number of work days of absence due to accidents among Boliden's employees was 485 (475). Focus is to detect and mitigate serious hazards and risks (RC3) before it becomes accidents. RC3 cases are always followed up with a Root Cause Analysis (RCA).

LTI Frequency[1] Boliden employees

	2017	2018	2019
Sweden	3.5	3.3	3.4
Norway	2.0	0.0	7.3
Finland	8.5	3.5	5.1
Ireland	4.8	2.8	2.7
Group	**5.0**	**3.1**	**4.0**

LTI Frequency[1] Boliden contractors

	2017	2018	2019
Sweden	9.0	7.3	5.8
Norway	0.0	0.0	0.0
Finland	10.9	11.7	5.7
Ireland	2.4	8.3	2.0
Group	**8.7**	**8.6**	**5.2**

LTI Frequency[1] employees and contractors

	2017	2018	2019
Sweden	5.5	4.7	4.2
Norway	1.3	0.0	5.2
Finland	9.5	6.7	5.3
Ireland	4.1	4.5	2.5
Group	**6.3**	**5.1**	**4.4**

Lost day rate[1] Boliden employees

Lost days due to injury per 1,000,000 working hours

Work days	2017	2018	2019
Sweden	51	28	31
Norway	253	0	213
Finland	237	53	63
Ireland	226	163	19
Group	**135**	**49**	**49**

Sick leave rate[1] Boliden employees

Percentage	2017	2018	2019
Sweden	4.5	4.3	3.9
Norway	7.5	7.2	6.6
Finland	4.6	4.5	4.8
Ireland	3.5	4.2	4.1
Group	**4.5**	**4.5**	**4.3**

Work-related fatalities employees and contractors

Percentage	2017	2018	2019
Employees	0	0	0
Contractors	0	0	0
Total	**0**	**0**	**0**

Work-related fatalities are very rare within Boliden. No work-related fatality on Boliden's workplaces during the last 10 years of operation.

403–10 Work-related ill health

Work-related ill health can include acute, recurring, and chronic health problems caused or aggravated by work conditions or practices. This data is mostly followed up on unit level with the local health service providers. The information is partly confidential and is therefore not always possible to share or analyse on higher level. The number of reported occupational diseases or data on absenteeism connected to occupational diseases is not included in our reporting since it can take several years before a reported occupational disease is finally accepted or not accepted as an occupational disease by the authorities. The absence is, however, included in the ordinary sick leave percentage and divided into short and long-term absence.

1) The LTI frequency is calculated per one million working hours and includes all injuries that have caused one day's absence or more from work after the day of the injury. To calculate the injury rate (IR) and lost day rate according to GRI, divide the frequency/rate stated above by five. The number of days' absence for contractors is not reported as there are no reliable data available. The sick leave rate is the total number of hours' absence due to injury or disease divided by the total number of scheduled working hours. Boliden currently lacks the ability to monitor sick leave for contractors working for several clients (other than Boliden)

SUSTAINABILITY TOPIC: TRAINING AND EDUCATION

404–1 Average hours of training per employee

Boliden's approach is to facilitate skill development during regular working hours. The responsibility for the organization and following up on-the-job training resides with the line management. Boliden has not set a target for the average number of training hours for different job categories – individual needs determine the methods and extent of training activities.

Average hours of training per employee by gender and by employer category

Category	2017	2018	2019
Men	17.8	19.6	21.1
Women	16.9	20.6	22.2
White-collar	23.2	21.5	23.9
Blue -collar	14.8	18.6	19.9
Total	**17.7**	**19.6**	**21.3**

404–2 Programs for upgrading employee skills and transition

Additional to several types of health and safety training programs, Boliden employees are offered different kinds of skills upgrading. Development programs are run annually on local sites or coordinated by Business Area HR Mines/Smelters. Various corporate training programs for participants from all countries/sites and competencies are coordinated annually by Boliden Group HR. Transition assistance program can in some cases be provided locally . There is no coordination on Group level.

Examples on training provided by Boliden Group HR in 2019:

- Young Professionals Program: Onboarding and personal development program for all young academics in Boliden. 23 participants in 2019 (356 participants since the program started in 2005)
- High Potentials Program: Assesment program for future top leaders in Boliden. 12 participants in 2019 (85 participants since program start in 2008)
- Senior Middle Management Program: Improve leadership skills amoung Bolidens senior middle management Leaders. 15 participants in 2019 (112 participants since program start in 2016)
- Women at Work: Development program for all female employees in Boliden to improve career opportunieies. 22 participants in 2019 (222 participants since program start in 2010)

404–3 Percentage of employees receiving a regular performance and career development reviews

Boliden's target is for 100% of its employees to receive an annual performance appraisal and career-development review.

Boliden has a competence and personnel-planning tool in order to attract new qualified personnel, to develop and integrate new personnel, and to develop and retain those currently employed. The tool is used across the Group to improve the development of performance management, competence planning, and succession planning. One of the purposes of the tool is to improve the quality of follow-up work on the development reviews and to expand the potential for such work, as the tool enables managers and employees to document development reviews and to follow up on goals and development plans, and it also highlights their competence and expresses their desire to advance.

In 2014, a recruitment module was introduced in the tool. It provides managers with support for compiling recruitment profiles, ranking applicants by qualification, documenting interviews, compiling assessments, and ensuring that every new employee is given a good introduction.

As of 2019, the system is used for performance reviews for all white-collar employees in the Boliden Group. The system is not used for the Performance reviews carried out for blue-collar employees.

Percentage of employees receiving regular performance and career development reviews by gender and employee category

	2017	2018	2019
Group Total	82	81	77
Men	81	80	74
Women	87	86	88
White-collar	87	83	85
Blue -collar	75	75	68

New HR masterdata system

In 2019 a pre-study was conducted with the aim of investigating the need for a common HR masterdata system for the Boliden Group. Such a system would enable a secure, common and efficient management of data regarding organization, processes, employees and their competences development. The prestudy resulted in a decision on investing in a new modern HR masterdata system.

The implementation of the system will start in 2020. The aim is to deliver a professional HR master data system to support the organization, enabeling higher quality related to measuring, follow-up and analyse as well as increase predictability and strategic planning in clompliance with GDPR.

SUSTAINABILITY TOPIC: DIVERSITY AND EQUAL OPPORTUNITY

405–1 Diversity of governance bodies and employees

Diversity contributes to sustainability, dynamics, creativity and better results. Boliden strives to have employees with different backgrounds, age and experience. One challenge is to attract female employees into a traditional male-dominated industry.

Boliden's goal is for 20 % of all employees to be women by the end of 2020 calculated as FTE. In 2019, the share was 19.2% (18.2). Notably, the proportion of women at management level, among Boliden's so-called top-100, was 28% (24). 3 (3) of Boliden's 11 mines and smelters are led by women.

Percentage of individuals within the organization's governance bodies in the diversity categories, gender and age group

	2017			2018			2019		
	Board of Directors	Group Management	Supervisors	Board of Directors	Group Management	Supervisors	Board of Directors	Group Management	Supervisors
Total number	**11**	**5**	**588**	**10**	**5**	**599**	**10**	**5**	**648**
Women, %	36	20	15	50	20	14	50	20	17
Men, %	64	80	85	50	80	86	50	80	83
<30 years, %	0	0	4	0	0	4	0	0	5
30–50 years, %	9	40	59	20	0	59	20	20	61
>50 years, %	91	60	37	80	100	37	80	80	34

Percentage of total number of employees per employee category and diversity categories, gender and age

Employees	2017	2018	2019
Total number	**5,921**	**6,029**	**6,207**
Blue-collar, %	66	65	65
White-collar, %	34	35	35
Women, %	18	19	20
Men, %	82	81	80
<30 years, %	16	16	16
30–50 years, %	51	51	52
>50 years, %	33	33	32

Diversity contributes to dynamism, creativity, and ultimately better results. Boliden strives to have employees with different backgrounds, ages, and experiences. Boliden does have employees who come from minority groups, but does not register this out of concern for individual privacy.

SUSTAINABILITY TOPIC: NON-DISCRIMINATION

406–1 Incidents of discrimination and corrective actions taken

Boliden's Diversity Policy states that if an incident of discrimination should occur, the employee affected shall initially raise the matter with his or her manager and then with the company's HR function, or through the whistleblower reporting system (accessible via the intranet and Boliden's external website).

Six incidents of discrimination were reported to Boliden during 2019 through the formal grievance mechanisms. All incidents were addressed during the reporting period, whereof 2 incidents resulted in corrective actions during the reporting period.

SUSTAINABILITY TOPIC: RIGHTS OF INDIGENOUS PEOPLE

411–1 Incidents of violations involving rights of indigenous people

A successful business has to be based on local support and understanding. Boliden has a long history in the areas in which it operates. The strategy is to act responsibly and to build trust with local stakeholders to get the social license to continue operations. With an open dialogue and cooperation with local communities, the company is able to find solutions that are beneficial to both sides and mitigate negative consequences. Since different types of interest overlap we have to respect different opinions, but Boliden has been able to avoid significant disputes.

Operation in or adjacent to indigenous peoples' territories

In northern Scandinavia the Sami, as an indigenous people, have a traditional land use right over large areas – Sapmi. All types of operations that use land in these areas – from exploration to rehabilitation – are accordingly places where Boliden's interests overlap with those of the Sami. Boliden conducts exploration work in these areas.

Three of Boliden's mining areas (27%) (the Boliden Area, the Aitik mine, and the Kevitsa mine) are also located in Sapmi. Consultations are continuous and ongoing with the affected Sami villages regarding exploration, operations, project development and rehabilitation. Agreements on cooperation, development and compensation are generally in place between Boliden and the Sami villages.

Examples of development projects together with the Sami:

- "Porokello" – a warning system for traffic to avoid accidents, used in Finland and at the Kevitsa mine. Boliden, the Sami villages in the Boliden Area, and the local contractor, Renfors Åkeri, have jointly agreed to trial the system. The target is to reduce the number of accidents and improve safety for drivers, reindeer herders and, of course, the reindeer. Another project involves the re-establisment of lichens – Pilot tests have been set up in Boliden and Aitik in partnership with the Swedish University of Agricultural Sciences. Consequences for the Sami and reindeer from mining projects are difficult to evaluate since there is very limited research in this field. Boliden has therefore initiated a project with global positioning collars on reindeer to find better ways to evaluate for exemple disturbance zones. This project is conducted together with three different Sami villages at Boliden sites and also together with researchers from the university of agricultural sciences.

The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities, and indigenous peoples

Different types of grievance mechanisms are used in different stages from exploration through project development, permitting, operations into the long term phase. Before any exploration is conducted a working plan is sent to all stakeholders with information about the date and type of work being planned, and a description of any consequences. Details of the contact at Boliden and at the supervising authority Bergsstaten are provided in the plan to facilitate contacts and changes to the planned work. During project development and permitting, hearings are held with stakeholders to enable feedback directly to Boliden or the authorities. Also, annual meetings are usually held with all stakeholders during operations, as well as during the long-term rehabilitation planning process.. The extent of the hearings and meetings is planned based on need, and may consist of anything from single meetings to extensive citizens dialogues.

SUSTAINABILITY TOPIC: LOCAL COMMUNITIES

413–1 Operations with local community engagement, impact assessments, and development programs.

Good social relations are important to Boliden, both for the current business operations and for our new projects – everything from prospecting to finishing. Boliden maintains a continuous dialogue with stakeholders and conducts several consultation processes each year where the public and various business owners are invited to attend and submit their views. Ensuring that the consultation process works well is essential for designing activities and projects in the best possible way and giving everyone the opportunity to express their views. As part of this, Boliden is working on developing the process and introducing new ways of working such as a careful analysis of those involved, and the consultations are then adapted to best capture individual groups' views and ideas. Active and interactive ways of working also capture the interest in a better way. The civil dialogue regarding Gillervattnet and the Boliden Area's original breakthrough is one example of a developed consultation process.

In addition to consultation processes, constant dialogue and interaction with stakeholders and the local community take place through different types of activities. These may involve event weeks, with visits from schools, business and municipalities, collaboration and sponsorship of local associations and sports teams, cultural activities and cooperation with hometown associations, etc.

Local involvement in the form of support for and partnerships with voluntary organizations and associations are other ways in which Boliden can make a positive contribution to the areas in which the company operates. Boliden's support focuses primarily on local sporting and cultural events, schools, and hospitals, often linked to children and young people. In 2019, Boliden's units sponsored 413 (347) local activities to the tune of approximately SEK 10.5 (10.7) million.

Keeping the interests of the local community high on the agenda when planning and executing mining and smelting operations is vital to maintaining good relations with the employees, their families, and their neighbors, and is an essential part of being a responsible corporate citizen. Failing to maintain these good relations would be a threat to the operation, as it would hamper the ability to attract a competent workforce and jeopardize any potential expansion.

Stakeholder analysis and social impact assessments

Stakeholder identification is also something that Boliden has identified as key to getting the Social Licence to Operate. Stakeholders are identified in the first exploration works and contacted through telephone calls, working plans for exploration or public meetings if the company enters an area of low experience of exploration and mining. Stakeholder management is also a central part of project development, application processes for permits as well as on an ongoing basis during operation and rehabilitation into the long term phase. Stakeholders are contacted and involved in different ways. Social impact assesments have been completed in several projects. Boliden has developed a toolbox for different types of stakeholder involvement.

413–2 Operations with significant actual and potential negative impact on local communities

Social-impact assessments are made in conjunction with closure of an operation, in order to assess any consequences to the community and in an effort to mitigate, as far as possible, any negative effects. Measurements are carried out continuously to monitor any impact on the local community's environment in the form of dust, noise, vibrations, and shockwaves from blasting, for example. Methods have also been put in place for assessing impact, e.g. through changes to traffic, the landscape, water access, and land access.

The Group's operations not only have a substantial impact on job opportunities but also affect suppliers' purchasing power elsewhere in the local business sector, which, in the long term, impacts the development of the communities' service sectors. Boliden estimates that for each Boliden employee, another three to five local job opportunities are, on average, created.

SUSTAINABILITY TOPIC: BUSINESS PARTNERS SOCIAL AND ENVIRONMENTAL ASSESSMENT

102-10 & 308-1 & 414–1 New suppliers screened using social criteria

Boliden's significant ESG risks in the supply chain are identified in our raw materials supply. There were no significant changes to the organization or its supply chain in 2019. In total, 71% of all new raw materials suppliers and customers managed by Boliden Smelters were evaluated during 2019.

In the fields of logistics, products and services, 79% of new contracted suppliers with a spend over SEK 1 million were evaluated during 2019.

SUSTAINABILITY TOPIC: RESETTLEMENT AND CLOSURE PLANNING

MM9 Sites where resettlements took place

The closest settlements to the Aitik mine are the villages Sakajärvi and Liikavaara, located at 1.5 and 3 km respectively to the north east of the Aitik pit. Laurajärvi village is located about 5 km east of the mining area.

The Liikavaara expansion project, which is currently undergoing a pre-feasibility study, is located close to the village of Liikavaara and about 1.5 km from both Sakajärvi and Laurajärvi. The Liikavaara project forms part of Aitik's strategic plan.

Evaluations of safety zones and disturbance zones for vibrations, falling rocks, air impacts, dust and noise have been conducted. The studies concluded that the housing and living environments in Sakajärvi, Liikavaara and parts of Laurajärvi are unacceptable due to the operations in Aitik and the planned Liikavaara project. As a result, around 50 permanent residents of the villages will have to move.

In 2017, dialogues were begun with the people living in the villages and compensation offers with two options was presented. The first option entails Boliden offering a replacement plot and a new house with similar functionality, while the second entails Boliden purchasing the property, valuing it as if the house were located near to Gällivare, with a 25% bonus. The target is to reach an agreement with all the affected residents in order for them to feel they have been compensated in full financially. Residents with family properties and a strong connection to the area will probably not feel fully compensated. During 2019, agreements were reached with 60% of the residents; efforts will continue during 2020.

MM10 Number and percentage of operations with closure plans

All of Boliden's present operations, both mines and smelters, have environmental closure plans which have been approved by the authorities. In 2019, Boliden worked actively on the reclamation of former mine sites. At the end of 2019, a total of SEK 5,086 (4,016) m was set aside for the reclamation of mining areas and smelters. Additions to existing provisions during the reporting year are primarily attributable to the new environmental permit at Aitik, and the effects of the application of the EU Water Framework Directive to the Boliden units in Finland.

Emergency Preparedness – Sector-specific disclosure

Communities adjacent to mining operations will be concerned about the hazards and risks that the operations generate. For Boliden, effective emergency management is essential to protect people, the environment, and the operations. Every business unit has its own local emergency management plan, including routines for crisis management, which is reviewed and practised regularly. Boliden's emergency preparedness procedures have worked satisfactorily and led to the minimization of damage to people, property, and the environment.

SUSTAINABILITY TOPIC: SOCIO-ECONOMIC COMPLIANCE

419-1 In the social and economic area

Socio-economic compliance is a precondition for successful mining and smelting operations. Legal requirements shall always be met.

No significant fines or non-monetary sanctions regarding social performance have come to Boliden's attention during 2019.

Legislative compliance is important to Boliden since it ensures our business legitimacy.

For monetary value of significant fines for non-compliance with environmental laws and regulations, see 307-1.

GRI SOCIAL TOPIC: PUBLIC POLICY

415-1 Political contributions

No form of bribery or corruption is acceptable, and conflicts of interest shall be reported and addressed. Boliden's anti-corruption program applies to individuals acting in Boliden's name or on Boliden's behalf including employees, management, Board Members, consultants and agents of the Boliden Group.

The anti-corruption policy also applies to companies and joint ventures in which Boliden has an interest, and to third parties who act for or on behalf of Boliden. The program states that it is always forbidden to give or accept political contributions or charity donations.

THE TEN PRINCIPLES OF UN GLOBAL IMPACT AND OTHER GRI SOCIAL TOPICS

Principle 1 (GRI 412): Boliden supports and respects the protection of internationally proclaimed human rights
Boliden's own operations are located in countries where the risks of human rights violations are generally low. There are, however, material topics to consider, such as non-discrimination, indigenous rights, and supply chain risks. Boliden has a business partner management program that focuses on human-rights risks in the supply chain. The ESG business partner evaluations specifically focuses on freedom of association & collective bargaining, child labor, forced and compulsory labor, among other topics.

There is a Human Rights Grievance Mechanism that covers Boliden's own operations, as well as those of our suppliers. Please see the General Disclosure and Management Approach part of this report to learn about how Boliden manages performance within these aspects.

Boliden Commercial is also included on The London Bullion Market Association's (LBMA) list of recommended gold producers, the Good Delivery List, which requires the company to comply with a set of standards and to have this compliance certified by the LBMA. This guidance aims "to help companies respect human rights and avoid contributing to conflict through their mineral sourcing practices." Companies included on the list have implemented routines to ensure that the raw Sustainability supply chain complies with a set of ethical criteria.

More information can be found in GRI disclosure 308-1 and 414-1.

Principle 2 (GRI 412): Boliden's code of conduct is designed to support the UN Declaration on Human Rights and ILO fundamental conventions
Boliden adheres to the UN Declaration of Human Rights and ILO's fundamental conventions. If human rights are violated in connection with Boliden's business, any stakeholder is welcome to contact either the local managers or any of the company functions by a variety of channels; e.g. phone, e-mail, and written correspondence. Anonymous reporting can be done through Boliden's whistleblower function.

LABOUR – PART OF THE TEN PRINCIPLES OF UN GLOBAL IMPACT

Principle 3 (GRI 407): Boliden should uphold the freedom of association and the effective recognition of the right to collective bargaining
All of Boliden's employees are covered by collective bargaining agreements.

More information can be found in GRI disclosure 103-2&3.

Principle 4 (GRI 409): Boliden should uphold the elimination of all forms of forced and compulsory labor
Under no circumstances may forced and compulsory labour be employed or used in our operations, directly or indirectly through business partners.

More information can be found in GRI disclosure 103-2&3.

Principle 5 (GRI 408): Boliden should uphold the effective abolition of child labour
Under no circumstances may child labour be employed or used in Boliden's operations, directly or indirectly through business partners. All business partners must comply with this by agreeing to Boliden's Business Partner Code of Conduct. Any business partner may be subject to visits or third party audits at the business partner sites to ensure compliance.

More information can be found in GRI disclosure 103-2&3.

Principle 6: Boliden should uphold the elimination of discrimination in respect of employment and occupation
Boliden does not accept any form of harassment, discrimination or other behavior that may be regarded by colleagues or close relatives as abusive or degrading. Boliden and its employees shall refrain from all forms of discrimination and harassment on the basis of gender, ethnicity, age, disability, religion, sexual orientation, or any other factor.

More information can be found in GRI disclosure 103-2&3.

Content Indexes

GRI CONTENT INDEX

GRI General Disclosures		Omissions	Reference
GRI 102: General Disclosures			
Organizational profile			
102-1	Name of the organization		Boliden AB (publ)
102-2	Activities, brands, products, and services		ASR 12-14, 18-26
102-3	Location of headquarters		GRI back cover
102-4	Location of operations		ASR 19
102-5	Ownership and legal form		ASR 54, 60-62, 90
102-6	Markets served		ASR 10-17
102-7	Scale of the organization		ASR 111-117, GRI 5
102-8	Information on employees and other workers		ASR 111, GRI 5, 36
102-9	Supply chain		ASR 38-39, 11, 35, 47
102-10	Significant changes to the organization and its supply chain		GRI 7
102-11	Precautionary Principle or approach		ASR 56-59, 66, GRI 11
102-12	External initiatives		ASR 40, GRI 6
102-13	Membership of associations		GRI 6
Strategy			
102-14--15	CEO statement (Statement from senior decision-maker)		ASR 2
Ethics and integrity			
102-16--17	Values, principles, standards, and norms of behavior		ASR 32, 38-39, 40, 60-65, GRI 6
Governance			
102-18--39	Governance structure		ASR 60-69, GRI 8
Stakeholder engagement			
102-40	List of stakeholder groups		ASR 30, GRI 6
102-41	Collective bargaining agreements		GRI 6
102-42	Identifying and selecting stakeholders		ASR 30, GRI 7
102-43	Approach to stakeholder engagement		GRI 7
102-44	Key topics and concerns raised		GRI 7
Reporting practice			
102-45	Entities included in the consolidated financial statements		ASR 90
102-46	Defining report content and topic boundaries		GRI 7
102-47	List of sustainability topics		ASR 30, GRI 9
102-48	Restatement of information		Presented in connection to the data
102-49	Changes in reporting		No
102-50	Reporting period		Calendar year
102-51	Date of most recent report		March 2020
102-52	Reporting cycle		Annually
102-53	Contact point for questions regarding the report		GRI back cover
102-54	Claims of reporting in accordance with the GRI Standards		GRI 2,4
102-55	GRI content index		GRI 48-52
102-56	External Assurance		GRI 7, 53
GRI 103: Management Approach			
103-1	Explanation of the Sustainability topic and its boundary		GRI 10
103-2	The management approach and its components		GRI 10
103-3	Evaluation of the management approach		GRI 10

GRI Sustainability Topics		Omissions	Reference
GRI 200: Economic standard series			
Management approach – Economic			
201-103	Management approach – Economic		GRI 14-15
Economic performance			
201-1	Direct economic value generated and distributed		ASR 1, GRI 15
201-2	Financial implications and other risks and opportunities for the organization's activities due to climate change		ASR 2, 34, GRI 15
201-3	Defined benefit plan obligations and other retirement plans		
Market presence			
202-2	Proportion of senior management hired from the local community		GRI 16
Indirect economic impacts			
203-2	Significant indirect economic impacts, including the extent of impacts		ASR 40, GRI 16
Anti-corruption			
205-1	Operations assessed for risks related to corruption		ASR 38-39, GRI 17
205-2	Communication and training on anti-corruption policies and procedures		ASR 38-39, GRI 17
205-3	Confirmed incidents of corruption and actions taken		ASR 38-39, GRI 17
Anti-competitive behavior			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices		ASR 38-39, GRI 17
GRI 300: Environmental standard series			
Management approach – Environment			
301-103	Management approach – Environment		GRI 19-20
Materials			
301-1	Materials used by weight or volume		GRI 20
301-2	Recycled input Materials used		GRI 20-21
Energy			
302-1	Energy consumption within the organization		ASR 34-35, 111, GRI 22
302-3	Energy intensity		ASR 34-35, GRI 22
302-4	Reduction of energy consumption		ASR 34-35, GRI 22
Water and Effluents (GRI indicators are from 2018)			
303-1	Interactions with water as a shared resource		GRI 29
303-2	Management of water discharge-related impacts		ASR 34-35, GRI 29
303-3	Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas		GRI 29
303-4	Habitats protected or restored		ASR 34, GRI 29
303-5	Amount of land disturbed or rehabilitated		GRI 29
Biodiversity			
304-1	Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas		GRI 30
304-2	Significant impact of activities on biodiversity		GRI 30
304-3	Habitats protected or restored		ASR 30, 34, GRI 30
304-4	IUCN Red list species and national conservation list species with habitats in the area affected by operation.		GRI 30
MM1	Amount of land disturbed or rehabilitated		GRI 31
Emissions			
305-1	Direct (Scope 1) GHG emissions		ASR 35, 111, GRI 25
305-2	Energy indirect (Scope 2) GHG emissions		ASR 35, 111, GRI 25
305-4	GHG emissions intensity		ASR 35, 111, GRI 26
305-5	Reduction of GHG emissions		ASR 35-37, 111, GRI 27
305-7	Nitrogen oxides (NOX), sulphur oxides (SOX), and other significant air emissions		ASR 35, 111, GRI 32

GRI Sustainability Topics continued		Omissions	Reference
Waste			
306-1	Total water discharge by quality and destination		ASR 13, 32-33, GRI 32
306-2	Waste by type and disposal method		ASR 13, 32-33, GRI 32
306-3	Significant spills		ASR 13, 58, GRI 33
306-4	Transport of hazardous waste		ASR 13, 58, GRI 33
MM3	Total amount of overburden, rock, tailings, etc.		GRI 33
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations		GRI 33
Business Partner Social and Environmental Assessment			
308-1	New suppliers screened using environmental criteria		ASR 40-41, GRI 34
GRI 400: Social standards series			
Management approach – Social			
401-103	Management approach – Social		GRI 35
Employment			
401-1	New employee hires and employee turnover		ASR 32, 111 GRI 37
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees		GRI 38
MM4	Strikes and lock-outs exceeding one week		GRI 39
Occupational Health and Safety (GRI indicators are from 2018)			
403-1	Occupational health and safety management system		GRI 39
403-2	Hazard identification, risk assessment, and incident investigation		GRI 39
403-3	Occupational health services		GRI 39
403-4	Worker participation, consultation, and communication on occupational health and safety		GRI 39
403-5	Worker training on occupational health and safety		GRI 39
403-6	Promotion of worker health		GRI 40
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships		GRI 40
403-8	Workers covered by an occupational health and safety management system		GRI 40
403-9	Work-related injuries		GRI 40
403-10	Work-related ill health		GRI 41
Training and Education			
404-1	Average hours of training per year per employee		GRI 42
404-2	Programs for upgrading employee skills and transition		ASR 32, GRI 42
404-3	Percentage of employees receiving regular performance and career development reviews		ASR 32, GRI 42
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees		GRI 43
Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken		GRI 43
Rights of Indigenous Peoples			
411-1	Incidents of violations involving rights of indigenous people		GRI 43
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs		GRI 45
413-2	Operations with significant actual and potential negative impact on local communities		GRI 45
Resettlement and Closure Planning			
MM9	Sites where resettlements took place		GRI 46
MM10	Number and percentage of operations with closure plans		GRI 46
Business Partner Social and Environmental Assessment			
414-1	New suppliers screened using social criteria		ASR 38-39, GRI 45
Public policy			
415-1	Political contributions		ASR 60-65
Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area		ASR 60-65, GRI 46

1) All GRI indicators are from 2016, with the exception of GRI 303 and 403, which are from 2018.

THE TEN PRINCIPLES OF UN GLOBAL COMPACT CONTENT INDEX

Principle	Reference
Human Rights	
Principle 1: Business should support and respect the protection of internationally proclaimed human rights; and	ASR 38-39, GRI 47
Principle 2: make sure that they are not complicit in human rights abuses.	ASR 38-39, GRI 47
Labour	GRI 47
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	ASR 38, GRI 47
Principle 4: the elimination of all forms of forced and compulsory labour;	ASR 38-39, GRI 47
Principle 5: the effective abolition of child labour, and	ASR 38-39, GRI 47
Principle 6: the elimination of discrimination in respect of employment and occupation.	ASR 38-39, GRI 47
Environment	
Principle 7: Business should support a precautionary approach to environmental challenges,	ASR 42-43, GRI 34
Principle 8: undertake initiatives to promote greater environmental responsibility, and	ASR 14, 37, GRI 34
Principle 9: encourage the development and diffusion of environmentally friendly technologies.	ASR 4, 18-30, 60-65, GRI 34
Anti-corruption	
Principle 10: Business should work against corruption in all its forms, including extortion and bribery.	ASR 38, 60-65, GRI 17

Note: The assessment, policies and goals of the UN Global Compact principles are reflected under the GRI Standard disclosures for each Standard Performance and Management approach (103-2, 103-3, 201-103, 301-103, 401-103). Separate comments on the ten principles are provided after each GRI standard series.

BOLIDEN'S CLIMATE DISCLOSURE USING TCFD STRUCTURE

Principle	Reference
Governance	
Disclose the organizations governance	
The board's oversight of climate-related risks and opportunities	ASR 34-37, GRI 23
Management's role in assessing and managing climate-related risks and opportunities	ASR 34-37, GRI 23
Strategy	
Disclose impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning	
Actual and potential impacts of climate-related risks and opportunities, identified so far, on the organization's business, strategy and financial planning	ASR 34-37, GRI 23
Describe the climate-related risks and opportunities the organization has identified	ASR 34-37, GRI 23
Risk management	
Disclose how the organization identifies, assesses, and manages climate-related risks	
Describe the organization's processes for identifying and assessing climate-related risks	ASR 34-37, GRI 24
Describe the organization's processes for managing climate-related risks	ASR 34-37, GRI 24
Climate-related risks and opportunities are integrated into current decisions making and strategy formulation	ASR 34-37, GRI 24
Metrics and targets	
Disclose the metrics and targets used to manage climate-related risks and opportunities	
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	ASR 34-37, GRI 25
Disclose greenhouse gas (GHG) emissions	ASR 34-37, GRI 25
Describe the plannes used by the organization to manage climate-related risks and opportunities and performances against targets	ASR 34-37, GRI 27

Auditor's Limited Assurance Report on Boliden AB's Sustainability Report

This is the translation of the auditor's report in Swedish.

To Boliden AB, corporate identity number 556051-4142

Introduction

We have been engaged by the Board of Directors of Boliden AB to undertake a limited assurance engagement of Boliden AB Sustainability Report for the year 2019. The Company has defined the scope of the Sustainability Report on pages 48-52 in the Boliden Sustainability Index.

Responsibilities of the Board of Directors and the Executive Management for the Sustainability Report

The Board of Directors and the Executive Management are responsible for the preparation of the Sustainability Report in accordance with the applicable criteria, as explained on page 2 in the Sustainability Report, and are the parts of the Sustainability Reporting Guidelines published by GRI (Global Reporting Initiative) which are applicable to the Sustainability Report, as well as the accounting and calculation principles that the Company has developed. This responsibility also includes the internal control relevant to the preparation of a Sustainability Report that is free from material misstatements, whether due to fraud or error.

Responsibilities of the auditor

Our responsibility is to express a conclusion on the Sustainability Report based on the limited assurance procedures we have performed. Our engagement is limited to historical information presented and does therefore not cover future-oriented information.

We conducted our limited assurance engagement in accordance with ISAE 3000 Assurance Engagements Other than Audits or Reviews of Historical Financial Information. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Sustainability Report, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with International Standards on Auditing and other generally accepted auditing standards in Sweden.

The firm applies ISQC 1 (International Standard on Quality Control) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We are independent of Boliden AB in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

The procedures performed consequently do not enable us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement.

Accordingly, the conclusion of the procedures performed do not express a reasonable assurance conclusion.

Our procedures are based on the criteria defined by the Board of Directors and the Executive Management as described above. We consider these criteria suitable for the preparation of the Sustainability Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion below.

Conclusion

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Sustainability Report, is not prepared, in all material respects, in accordance with the criteria defined by the Board of Directors and Executive Management.

Stockholm 13 February 2020

Deloitte AB

Jan Berntsson
Authorized Public Accountant

Lennart Nordqvist
Expert Member of FAR