

METALS FOR SUSTAINABLE SOCIETY

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Sustainability Index 2018

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Read more at
www.boliden.com

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 UN Global Compact's ten principles. The 2018 Sustainability Index comprises references to the Boliden 2018 Annual and Sustainability Report that discloses the Group's value creation, operations, and risk assessment, including the sustainability perspective.

Boliden adheres to the following internationally recognized, voluntary standards and principles:

- UN Global Compact.
Boliden has been a signatory to the UN 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, environment and anticorruption.

- The Global Reporting Initiative's (GRI) Standards. The 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.

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.

Key performance data

Data available in the Annual and Sustainability report 2018.

Categories

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

GRI 200 page **16**

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

GRI 300 page **22**

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

GRI 400 page **34**

About Boliden

About Boliden

Boliden is a metals producer with focus on sustainable development. Our roots are Nordic, but our business is global. 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 materiality 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 and strives to be as transparent as possible, partaking in ranking and ratings, sharing information that is relevant to the business.



GRI and Global Compact Content Index

Global Reporting initiative (GRI) Content Index

Boliden's Sustainability Index 2018 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.

The Index enables a navigation of the disclosure of organizational profiles and governance, strategies, report parameters, material

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 material topic, the reasons for the omissions are provided either directly in the Index or in connection with the disclosure of the topic.

The ten principles of UN Global Compact Index

Boliden's Sustainability Index 2018 includes the Communication on Progress (COP) with references to Boliden performance in relation to the UN Global Compacts' ten principles


GRI Content Index


GRI & GC = Sustainability index 2018

ASR = Annual Sustainability Report 2018

◐ = Partially reported

GRI Standard Disclosures ¹⁾		Omissions	Reference
GRI 101: Foundation			
General Disclosures			
GRI 102: General Disclosures			
Organizational profile			
102-1	Name of the organization		Boliden AB (publ)
102-2	Activities, brands, products, and services		ASR 12-13, 16-19, 23
102-3	Location of headquarters		GRI back cover
102-4	Location of operations		ASR 24-25
102-5	Ownership and legal form		ASR 55, 60-65
102-6	Markets served		ASR 14-16, 20-22
102-7	Scale of the organization		ASR 24, 72, 83-85, GRI 8
102-8	Information on employees and other workers		GRI 8, 40-41
102-9	Supply chain		ASR 38-39, 45, 48-53
102-10	Significant changes to the organization and its supply chain		GRI 10, 48-53
102-11	Precautionary Principle or approach		ASR 56-58, 60-65
102-12	External initiatives		ASR 44, 47, GRI 10
102-13	Membership of associations		GRI 9
Strategy			
102-14	CEO statement (Statement from senior decision-maker)		ASR 2-3
Ethics and integrity			
102-16	Values, principles, standards, and norms of behavior		ASR 34, 38-39, 40-41, 43-44, GRI 9
Governance			
102-18	Governance structure		ASR 60-69
Stakeholder engagement			
102-40	List of stakeholder groups		ASR 36, GRI 9
102-41	Collective bargaining agreements		GRI 9
102-42	Identifying and selecting stakeholders		ASR 36, GRI 9
102-43	Approach to stakeholder engagement		GRI 10
102-44	Key topics and concerns raised		GRI 10

GRI Standard Disclosures	Omissions	Reference
Reporting practice		
102-45	Entities included in the consolidated financial statements	ASR 92
102-46	Defining report content and topic boundaries	GRI 10
102-47	List of material topics	ASR 35, GRI 13-14
102-48	Restatement of information	No
102-49	Changes in reporting	No
102-50	Reporting period	Calendar year
102-51	Date of most recent report	March 2018
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 4-7
102-56	External Assurance	GRI 11, 48
GRI 103: Management Approach		
103-1	Explanation of the material topic and its boundary	GRI 12
103-2	The management approach and its components	GRI 12,13,17,23,35
103-3	Evaluation of the management approach	GRI 14-15
Material Topics		
GRI 200: Economic standard series		
Management approach – Economic		
201-103	Management approach – Economic	GRI 17-18
Economic performance		
201-1	Direct economic value generated and distributed	ASR 1, 13, GRI 19
201-2	Financial implications and other risks and opportunities for the organization's activities due to climate change	ASR 2-4, GRI 19
Market presence		
202-2	Proportion of senior management hired from the local community	GRI 20
Indirect economic impacts		
203-2	Significant indirect economic impacts, including the extent of impacts	 ASR 41, 47, GRI 20
Anti-corruption		
205-1	Operations assessed for risks related to corruption	ASR 44, GRI 20
205-2	Communication and training on anti-corruption policies and procedures	ASR 44, GRI 21
205-3	Confirmed incidents of corruption and actions taken	ASR 44, GRI 21
Anti-competitive behavior		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	ASR 44, GRI 21
GRI 300: Environmental standard series		
Management approach – Environment		
301-103	Management approach – Environment	GRI 23
Materials		
301-1	Materials used by weight or volume	GRI 24
301-2	Recycled input materials used	GRI 24-25
Energy		
302-1	Energy consumption within the organization	ASR 42-43, GRI 26
302-3	Energy intensity	ASR 42-43, GRI 26
302-4	Reduction of energy consumption	ASR 42-43, GRI 26
Water and Effluents (GRI indicators are from 2018)		
303-1	Interactions with water as a shared resource	GRI 27
303-2	Management of water discharge-related impacts	ASR 56, GRI 27
303-3	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	GRI 27
303-4	Habitats protected or restored	ASR 37, GRI 27
303-5	Amount of land disturbed or rehabilitated	GRI 27

GRI Standard Disclosures		Omissions	Reference
Biodiversity			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas		GRI 28
304-3	Habitats protected or restored		ASR 37, GRI 28
MM1	Amount of land disturbed or rehabilitated		GRI 29
Emissions			
305-1	Direct (Scope 1) GHG emissions		ASR 44-46, GRI 30
305-2	Energy indirect (Scope 2) GHG emissions		ASR 44-46, GRI 30
305-4	GHG emissions intensity		ASR 44-46, GRI 30
305-5	Reduction of GHG emissions		ASR 44-46, GRI 30
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions		ASR 44-46, GRI 30-31
Effluents and waste			
306-2	Waste by type and disposal method		ASR 13, 32-33, GRI 32
306-3	Significant spills		ASR 13, 58, GRI 32-33
306-4	Transport of hazardous waste		ASR 13, 58, GRI 33
MM3	Total amount of overburden, rock, tailings, etc.		GRI 32
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations		GRI 33
Business Partner Social and Environmental Assessment			
308-1	New suppliers that were screened using environmental criteria		ASR 38-39, GRI 33
GRI 400: Social standards			GRI 35-36
Management approach – Social			
401-403	Management approach – Social		GRI 35
Employment			
401-1	New employee hires and employee turnover		ASR 50, 52, GRI 36
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees		GRI 36
MM4	Strikes and lock-outs exceeding one week		GRI 38
Occupational Health and Safety (GRI indicators are from 2018)			
403-1	Occupational health and safety management system		GRI 38
403-2	Hazard identification, risk assessment, and incident investigation		GRI 38
403-3	Occupational health services		GRI 38
403-4	Worker participation, consultation, and communication on occupational health and safety		GRI 38
403-5	Worker training on occupational health and safety		GRI 38
403-6	Promotion of worker health		GRI 38
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships		GRI 39
403-8	Workers covered by an occupational health and safety management system		GRI 39
403-9	Work-related injuries		GRI 39
403-10	Work-related ill health		GRI 39
Training and Education			
404-1	Average hours of training per year per employee		GRI 40
404-3	Percentage of employees receiving regular performance and career development reviews		GRI 40
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees		GRI 41

GRI Standard Disclosures		Omissions	Reference
Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken		GRI 42
Rights of Indigenous Peoples			
MM5	Operation in or adjacent to indigenous peoples' territories		GRI 42
MM6	Number and description of significant disputes relating to land use, customary rights of local communities, and indigenous peoples		GRI 42
MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities, and indigenous peoples		GRI 42
Local Communities			
413-1&2	Operations with local community engagement, impact assessments, and development programs		GRI 42-43
Resettlement and Closure Planning			
MM9	Sites where resettlements took place		GRI 44
MM10	Number and percentage of operations with closure plans		GRI 45
Business Partner Social and Environmental Assessment			
414-1	New suppliers that were screened using social criteria		ASR 53, GRI 43-44
Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area		GRI 45

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 44, GRI 45
Principle 2: make sure that they are not complicit in human rights abuses.	ASR 44, GRI 45
Labor	
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	ASR 44, GRI 46
Principle 4: the elimination of all forms of forced and compulsory labor;	ASR 44, GRI 46
Principle 5: the effective abolition of child labor; and	ASR 44, GRI 46
Principle 6: the elimination of discrimination in respect of employment and occupation.	ASR 41, 44, GRI 46
Environment	
Principle 7: Business should support a precautionary approach to environmental challenges;	ASR 42-43, GRI 33
Principle 8: undertake initiatives to promote greater environmental responsibility; and	ASR 34-36, GRI 33
Principle 9: encourage the development and diffusion of environmentally friendly technologies.	ASR 4, 46, 56, GRI 33
Anti-corruption	
Principle 10: Business should work against corruption in all its forms, including extortion and bribery.	ASR 44, GRI 21

General Disclosures and Reporting Principles

Boliden produces metals that makes 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 GRI report concerning the number of employees refers to data from actual number of employees on 31 December for the years 2016–2018, while in the Annual Report, the corresponding figures are calculated and reported as Full Time Employees (FTE). 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

	2016			2017			2018		
	Number	% Female, %		Number	% Female, %		Number	% Female, %	
Permanent	5,458	95.4	17.0	5,597	94.5	17.9	5,727	95.0	18.3
Temporary	261	4.6	35.6	324	5.5	30.2	302	5.0	29.1
Total in Group	5,719	100.0	17.8	5,921	100.0	18.5	6,029	100.0	18.9

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

Region	2016		2017		2018	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
Sweden	3,098	120	3,213	134	3,224	155
Norway	291	17	290	35	298	25
Finland	1,499	89	1,504	125	1,616	82
Ireland	557	35	577	30	578	40
Other	13	0	13	0	11	0
Total in Group	5,458	261	5,597	324	5,727	302

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

Employment type	2016			2017			2018		
	Number	% Female, %		Number	% Female, %		Number	% Female, %	
Full-time	5,360	98.2	16.6	5,492	98.1	17.6	5,616	98.1	18.0
Part-time	98	1.8	36.7	105	1.9	32.4	111	1.9	32.4
Total in Group	5,458	100.0	17.0	5,597	100.0	17.9	5,727	100	18.3

102-13 Membership of associations

Boliden participates in industry organizations that can play an important role 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 Association 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, Återvinnings-industrierna, Jernkontoret, The Association of Finnish Steel and Metal, SveMin, FinMin, Euromines and Eurometaux.

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

We expect our employees to promote our core values by acting responsibly towards colleagues, business associates, and society at large, and to keep in mind that they may be regarded as Boliden employees, even during their leisure time. The Code of Conduct provides a framework for what Boliden considers to be responsible conduct – it is not exhaustive. 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 also 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.

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 provided the time and place are appropriate.

Employees and Board Members shall comply with all applicable laws and regulations, including the antitrust and competition laws, when conducting business on behalf of Boliden.

The Code of Conduct 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 will not be tolerated and may lead to internal discipli-

nary 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 2018, Boliden’s stakeholder groups were reviewed, updated and approved by the Boliden’s Group Management. A stakeholder process with roles and responsibilities was also defined. The new stakeholder process is more generic and can be used at Group, Business Area and Business Unit level to help identify applicable stakeholders and the type of dialogue that should be carried out and by whom.

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, 2018 was 5,911 (5,798) representing 98.0% (97.9%) 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.

An example: Stakeholder mapping at Bergsöe

Boliden Bergsöe identified stakeholders throughout the smelter’s value chain – from scrap batteries to the production of new batteries. The different requirements, risks and opportunities were then identified for each stakeholder, together with the systems Boliden Bergsöe has in place to manage and follow them up. The analysis is reviewed annually by the management team with input from the rest of the organization. The stakeholder analysis highlighted where Bergsöe has value chain risks, both when purchasing raw materials and when selling material to spot market traders. Bergsöe is looking at how tools and agreements, such as the UN Global Compact, could help mitigate these risks where Boliden has limited control over how the material is handled.

Boliden's stakeholder dialogues

Capital markets – Boliden's main owners and investors

Responsibilities: Boliden's Investor Relations team is responsible for identifying the owner's expectations and requirements and for arranging Investor Relations days.

Market – Boliden's direct customers and raw material suppliers

Responsibilities: Boliden's marketing and sales department monitors customer requirements and satisfaction, and Boliden Commercial (Boliden Smelters), is responsible for dialogue with direct customers and raw material providers.

Society – various societal actors

Responsibilities: Boliden's Public Affairs network includes various functions that monitor existing and forthcoming legislation.

Employees – everyone employed by Boliden

Responsibilities: Managers monitor employee expectations and requirements through annual staff dialogues, and HR conduct a bi-annual Employee Survey.

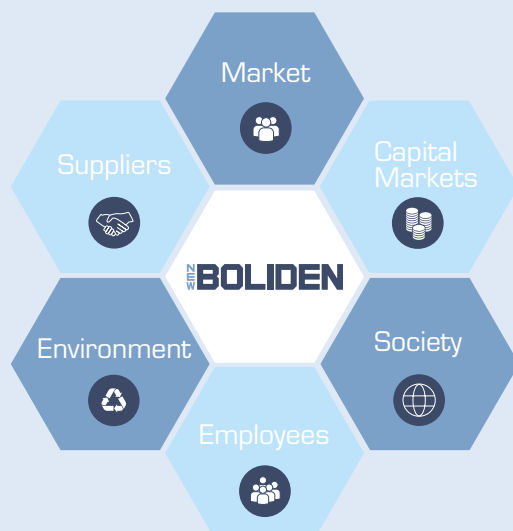
Suppliers – providers of indirect material, products and services

Responsibilities: Boliden's Procurement Group function is responsible for managing suppliers, which are selected based on sustainability, productivity, quality, delivery, price and reliability.

Environment – natural capital and ecosystem services that Boliden impacts

Responsibilities: All Boliden's units are responsible for minimizing environmental impacts by using the best available environmental technologies and mitigation measures.

Boliden's stakeholder groups



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. Dialogue is conducted in different ways with different groups, for example, bi-annual employee surveys, open-house meetings with employees and the neighboring community, formal and informal meetings with authorities, and capital market days and the Annual General Meeting.

102-44 Key topics and concerns raised

Boliden's employees are naturally a key stakeholder. Employee dialogue aimed at understanding their desires and demands is 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 (business partners, authorities, future employees) have high expectations when it comes to Boliden's focus on increased energy efficiency, its carbon footprint, and reduced environmental impact. 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. The stakeholder engagement is part of the Corporate Responsibility strategic process.

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's 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 material topics. Within Boliden, a 'material topic' is a question that reflects Boliden's material economic, environmental, and social impacts on the environment, as well as the issues that can affect assessments and decisions made by the stakeholders.

Boliden's material topics are reviewed on an annual basis, and focus areas are decided on 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 included in the Group Annual Report, pursuant to Swedish legislation, and in a separate report 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 CO₂ emissions are stipulated by 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 HRIT 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.



Management Approach

Sustainability is an important part of Boliden's operations and work conducted is based on the material topics for the business. The Board of Directors is responsible for the stewardship of the company and ensures that an appropriate corporate governance structure and system is in place. Sustainability is taken up both at each Board and Group Management meeting, and in local management meetings. The Head of Corporate Social Responsibility is a member of the Group Management team. Day to day responsibility is, however, decentralized to each business unit.

103-1 Explanation of the material topic and its boundary

Boliden shall be among its industry's leading companies in terms of customer satisfaction, efficiency, and responsibility. This entails an understanding, readiness, and progressiveness with regard to all topics deemed to be material.

Identify material topics

Boliden has an internal process designed to annually review Boliden's material topics in response to Boliden's 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. The material topics are anchored across the organization and adopted by Group management and the Board of Directors through the strategy plan.

Material topics for Boliden shall be based on Boliden's business model, taking into consideration risk and opportunities such as business intelligence and risk mapping, as well as applicable requirement 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 material topics in order to drive opportunities for improvement.

Boliden has identified the relevant SDGs for each of its material topics to show how Boliden's sustainability 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 the metals' value chain.

Boliden supports the Sustainable Development Goals



The picture shows the 17 Sustainable Development Goals disclosed by the United Nations in 2015.

Boliden's material topics and directions

102-47 List of material topics



IMPACT	TOPICS	DIRECTIONS	GLOBAL GOALS
 FINANCIAL	Economic performance	Contribute to long-term economic growth by providing metals that are important for society's sustainable development.	8
	Market presence	Contribute to local employment levels, trade and industry by generating purchasing power and providing a critical base for social services.	8, 11
	Indirect economic impacts	Contribute to job creation indirectly or induced through its subcontractors, suppliers or the effect of its employees' expenditures.	4, 8, 17
	Anti-corruption	Promote and monitor compliance throughout the company by following Code of Conduct and the Anti-Corruption policies.	16
	Activities inhibiting competition	Cultivate a culture in which employees preserve Boliden's competitive position.	16
 ENVIRONMENTAL	Materials	Contribute to the circular economy through recycling and by maximizing metal recovery from available raw materials.	8, 12
	Sustainable resource usage	Invest in R&D to develop new products that eliminate waste.	12
	Energy	Implement and maintain energy management systems to achieve energy efficiency and conserve energy.	7, 12, 13
	Water	Reduce the consumption of fresh water and the discharge of used water.	6, 12
	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.	6, 14, 15
	Air pollution emissions	Reduce carbon dioxide intensity and reduce metal emissions to air through improved process efficiency and increased electrification with plans on a fossil free mine.	3, 12, 13, 14, 15
	Discharges to water and waste	Reduce the discharges of metals to water and waste.	3, 6, 12, 14, 15
	Environmental legislation compliance	Always meet legal requirements with no serious environmental incidents.	12, 16
	Business Partner Environmental Assessment	Expect Business Partners to follow the Business Partner Code of Conduct; identify and document their significant environmental aspects; and comply with environmental legislation and common practices.	12
 SOCIAL	Employment	Provide an attractive workplace.	8
	Occupational health and safety	Provide a safe and healthy workplace.	3, 8
	Training and education	Facilitate career and skill development.	4, 8
	Diversity and Equal Opportunity	Foster workforce diversity that reflects the local community.	5, 8
	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, 8, 16
	Local Communities	Maintain good community relations and effective operations management.	8, 10, 11
	Business Partner Social Assessment	Expect customers and suppliers to comply with the Business Partner Code of Conduct.	12, 16
	Socioeconomic Compliance	Ensure legal requirements are always met.	12
	Resettlement and Closure planning	Plan for conservation and reclamation of mining areas during their operation and end of production lifespan.	1, 5, 11, 14
	Rights of Indigenous Peoples	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

Boliden's material topics and directions

103-1 *Continued*

Sustainability component of the business strategy

Boliden's process for integrating and implementing material topics into the business strategy and our everyday work is described in four steps;

1. Identify material topics
2. Prioritize focus areas
3. Implement systematic sustainability work
4. Report, follow up and improve.

Prioritized focus areas

The identification and prioritizing of the Group's sustainability efforts 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.



103-2&3 Evaluation of the management approach and its components

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 formulating 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 prioritized material topics enable Boliden to set relevant goals, and to track and improve performance.

Sustainability Targets 2014–2018

Boliden has defined targets for the period from 2014 to 2018, with 2012 as the base year. Performance disclosure information and comments are presented in the Economic, Environmental and Social chapters of the Sustainability Index, as well as in the Annual and Sustainability Report.

Policies and Management Systems

Boliden has a governance model comprising Group-wide and local policies, instructions and guidelines, tools, and local management systems that correspond to the challenges the company faces. The overall steering documents are collected in the Management Manual, which is available to every employee via Boliden's intranet.

Boliden's operations have adopted quality, environmental and occupational health and safety management systems. The ambition is to have all sites certified in accordance with ISO 14001 and OHSAS 18001, respectively (implementation of ISO 45001 is ongoing). In 2018, all sites except Kevitsa and Kylahti have achieved these certifications. The Group's smelters are also certified in accordance with the ISO 9001 Standard for quality management and ISO 50001 Standard for energy 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.

Boliden's Business Partner Code of Conduct

Boliden's Business Partner Code of Conduct is a policy for business partners with whom Boliden enters into an agreement. They are publicly available on Boliden's corporate website.

The Code has been developed from the principles laid down in the UN Global Compact, and issued by the ILO (labor standards), as well as from those contained in applicable ISO standards and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

Boliden's Whistleblower reporting

This reporting channel affords Boliden's employees the opportunity to raise concerns regarding actual or suspected serious wrongdoings committed by people in leading positions or key personnel within the Boliden group.

A serious wrongdoing means any serious conduct or irregularity within the Boliden group concerning (a) accounting, internal accounting controls, auditing matters, measures to combat bribery, banking- and financial crime, or (b) other serious conduct or irregularity concerning a Boliden company's or the Boliden Group's vital interests or the life or health of individual persons, such as serious environmental crimes, major deficiencies in the safety at the place of work and very serious forms of discrimination or harassments.

Boliden Group Targets 2019 and beyond

As a complement to these numerical targets communicated publicly, Boliden also works with several internal activities related to the identified material topics.

Material topic	Directions	Target and KPI
Economic performance	Contribute to long-term economic growth by providing metals that are important for society's industrialization and development. Provide metals for the transformation to a Sustainable society.	Return on investments shall be a minimum of 10% (NPV) Net debt/equity ratio in an economic upturn shall be 20% The dividend shall correspond to one third of the net profits
Air Pollution Emissions	Reduce carbon dioxide intensity and reduce metal emissions to air through improved process efficiency and increased electrification with the first fossil free mine planned for 2025.	Emissions of metals to air, -1%/per annum ¹⁾ CO ₂ intensity, -3%/per annum ¹⁾
Discharges to water and waste	Reduce the discharges of metals to water and waste.	Discharges of metal to water, -1%/per annum ¹⁾
Environmental Legislation Compliance	Always meet permit values and legal requirements. No serious environmental incidents.	No serious environmental incidents
Occupational Health and Safety	Provide safe and healthy workplaces.	Zero accidents (LTI) Sick leave rate <4.0%
Diversity and Equal Opportunity	Strive towards workforce diversity that reflects the local community.	At least 20% proportion of females in total work force in 2020

1) From 2017.

2) Base year 2012.

The Code addresses; *Human Rights and Labor Rights*

- Fundamental human rights
- The effective abolition of child labor
- 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
- Implementation of environmental management systems
- Minimize the operational impact related to energy, greenhouse gas emissions, waste, and water consumption

Anti-Corruption:

- Zero tolerance of 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 on taxation, fees and royalties, and transparency in disclosure of the same

Boliden's Corporate Responsibility work in relation to suppliers is developed and improved continuously from new knowledge and new conditions, such as amended legislation and principles set forth under the Extractive Industry Transparency Initiative

(EITI). The ESG evaluation of Boliden's business partners (customers and suppliers) is repeated at a minimum of three- to five-year intervals. The extent of the ESG evaluation depends on assessed sustainability risk and the strategic importance of the business partner. All of Boliden's business partners have been checked through sanction controls during the reporting year.

Responsibility and Monitoring of Progress

Boliden's Group management has ultimate responsibility for the Group's sustainability work. Prioritizing sustainability issues, and 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.

Economic standard disclosures (GRI 200)

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

Financial targets

Return on investments	The return on investments shall be a minimum of 10% (NPV)
Net debt/equity ratio	The net debt/equity ratio in an economic upturn shall be no higher than 20%
Dividend	The dividend shall correspond to one third of the net profit

(Base year 2012)

Financial Performance 2018

The performance is presented in the Annual and Sustainability reports.



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 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 understandings are a prerequisite for Boliden's success and in enabling the business to grow.

The economic topics identified as material 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 of and a precondition for trust from the local communities where Boliden operates. By considering these topics and performing well in respect of them, Boliden maintains its license to operate and the ability to develop the business.

Boliden's Code of Conduct provides a non-exhaustive framework for what Boliden 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 material, because Boliden contributes to the welfare in the 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 the company's 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 labor 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 5,818 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 1,411 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.

Boliden is, however, often one of the bigger companies in the local area, paying taxes in the areas in which Boliden operates, and its contribution can, therefore, be considered significant. In many places, Boliden is the biggest private employer and its employees and families are essential if infrastructure, public services, shops and other activities are to function.

Just as Boliden's companies are important to the development of the 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 environmental impact is minimized.

Informing everyone affected by our operations of planned developments is an important component of Boliden's work. In the case of major changes, Boliden also holds consultations to gather opinions from stakeholders. Boliden regularly measures PM, atmospheric shock waves, vibration and particulate fallout in the environment, for example, and shares this information publicly.

Indirect economic impact

A large proportion of Boliden's staff live close to the workplace, and the company, therefore, has a major impact on local employment and local business through increased purchasing power and as a basis for important social services. Boliden's market presence in Sweden, Finland, Norway and Ireland contributes to society by creating approximately 30,000 jobs, either directly or indirectly, through subcontractors, suppliers or through the impact of employee expenses. It is calculated that four additional jobs are created in connection with the business for every one Boliden employee.

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 in which they operate.

Contribution to tax revenue

Boliden also contributes to tax revenues in the areas which the Group operates. Tax payments totalled SEK 2,286 m in 2018. Boliden's direct tax payments include, furthermore, social security contributions, property taxes, fuel taxes and VAT. Boliden's total contribution to public finances through taxes (direct, indirect and induced) was approximately SEK 14.0 billion.

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 has, for many years, had a local level commitment to associations and non-profit organizations. In 2014, the charity fund Bcause was launched as part of our global level contribution. Bcause is based on voluntary monthly contributions from Boliden's employees. Boliden doubles every krona donated.

Anti-corruption

Anti-competitive behavior

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

Measurement of environmental and social impacts

Boliden has evaluated the Natural Capital Protocol during 2018. The intention is to create a methodology that will enhance the credibility of Boliden's sustainability work, and enable more informed decision-making, by improving the way in which environmental and social impacts are measured and managed.

Boliden has used metal equivalents factors for many years, although these had a narrow focus on toxicity. The NCP methodology is better suited to Boliden's operations and allows the evaluation of both environmental and societal impacts.

Successful NCP pre-study

Boliden completed a NCP pre-study at a Boliden smelter site during 2018. The study demonstrated how we could enhance our measurement and follow-up work and improve our social and

environmental impacts. Following the study, Boliden's Group Management decided to continue with a pre-study on a mine site in 2019.

Developing how we manage sustainability

NCP will enable us to better understand, compare and evaluate our various impacts internally. Using common metrics and research that is reviewed and accepted by NCP will also give our sustainability work greater credibility. NCP has, for example, already provided Boliden with new factors that are based on more credible research and industry-approved data.

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

How Boliden will use NCP in 2019 and beyond

Boliden will gradually expand the impacts it evaluates with NCP, starting with metal emissions. We plan to include other environmental impacts, such as climate impact, waste and landfill, as well as social issues, such as human health and impacts on the built constructions. NCP will allow us to prioritize which impacts we should work with and evaluate different investment alternatives in our operations for the benefit of both our business and society and the environment.

Boliden will further develop its NCP methodology in 2019 by establishing an impact valuation process, and by defining a monetization model for investment calculations. A pilot study for mines is in the pipeline, together with plans to develop guidelines on how to embed environmental impact into investment calculation tools.

What is natural capital?

Natural capital is our planet's stock of natural assets, including geology, soil, air, water and all living things – which provide humans with various ecosystem services that make human life possible.

What is the Natural Capital Protocol (NCP)?

The NCP provides businesses with a credible and standardized framework to identify and measure their natural capital impacts and dependencies – to enable better decision-making for business, society and the environment. The NCP was developed and launched in 2016 by the Natural Capital Coalition, which is a collaboration between 38 organizations, including the World Business Council for Sustainable Development (WBCSD).

Material Topic: Economic Performance

201-1 Direct economic value generated and distributed

Net sales in 2018 totaled SEK 52,454 (49,531) 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 country-by-country tax payments in the Annual 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's value chain – and to achieve this goal by investing in modern technology and developing stable environmentally, 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 strong 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 Mtonnes, which is in line with the direct emissions forecast. The rules for emissions trading, and the financial implications for Boliden after 2020, are uncertain.

In 2018, the Group management formulated a climate target to apply from 2017 onwards. The target is to reduce the CO₂ intensity by 3% per year, measured as (tonne CO₂/tonne metal). The CO₂ intensity performance will be measured with 2012 as a base year.



Material 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 deemed 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).

Operation	2016		2017		2018	
	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	11	100	9	100	9	100
Boliden Area	7	100	8	100	9	100
Garpenberg	5	100	5	100	5	83
Tara	7	86	7	100	7	100
Kylylahti	8	88	7	100	7	100
Kevitsa	10	100	8	88	7	86
Rönnskär	7	86	7	100	6	100
Bergsöe	6	100	6	100	6	100
Odda	5	100	5	100	5	100
Kokkola	6	100	7	100	7	100
Harjavalta	6	100	8	100	8	100
Total in Group	78	96.2	77	98.6	76	97.4

Material 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. 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, and this, in the long term, affects the development of the communities' service sectors.

In 2017, Boliden commissioned EY to review its economic contributions to the economy in the four countries with mining and smelting operations. The analysis is based on Boliden's financial data, purchasing patterns and publicly available statistics. The acquired Kevitsa operation has been included in the assessment. 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), or those supported through the induced effect of the employees' expenditure (11,400). The average amount of jobs created per Boliden employee is 4.3 and consequently, Boliden contributes to the public finances, both through direct taxes and through the taxes paid by suppliers and customers. In our most recent calculation, based on the preliminary 2018 financial results, Boliden's total contribution to public finances through taxes in Sweden, Finland, Norway, and Ireland is estimated at SEK 2,286 m.

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 society. Examples of significant identified indirect negative economic impacts of the organization is not found and therefore part of the omission.

Material Topic: Anti-Corruption

205-1 Operations assessed for risks related to corruption

Business ethics are covered in Boliden's Code of Conduct. Corruption and conflicts of interest are, furthermore, addressed in Boliden's anti-corruption policy and guidelines. These governing documents set out appropriate measures to prevent corrupt behavior and improper influencing. The documents are based on Group-wide risk assessment surveys in order to ensure their appropriateness for the business operations in question, particularly within 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 must be reported and addressed. Boliden's anti-corruption program applies to both the Board of Directors and employees of the Boliden Group. This 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. Great emphasis is, in addition to the anti-corruption work, placed on compliance with applicable competition regulation and Boliden has adopted a policy addressing this issue.

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

Boliden's line managers are responsible for making the Code of Conduct, the Anti-Corruption and Competition policy known, and for promoting and monitoring compliance within their respective organizations and to their respective counterparties. All managers and other employees whose work involves more regular external contacts with business partners, in particular with competitors, suppliers, customers, or agents, are subject to anti-corruption and competition training appropriate for their area of responsibility. All white-collar employees can carry out e-learning training sessions from time to time in the fields of anti-corruption and anti-bribery, and during the year 2,063 employees were offered the chance to participate in an e-learning course in this subject. The courses are normally offered in Swedish, Norwegian, Finnish, and English, depending on where the participants are based.

205-3 Confirmed incidents of corruption and actions taken

Boliden has a whistle-blower function that can be used to report suspected cases of economic crime anonymously in order to discover potential misconduct.

Any instances of discrimination, harassment, corruption, regulatory breaches, or other inappropriate conduct shall also be reported. The issue shall, initially, be addressed by means of discussion with the individual's immediate superior, and secondarily with the company's HR function or via the whistle-blower function. Boliden's whistle-blower function offers an anonymous channel for reporting suspicions of certain types of economic crimes and other types of misconduct. Nine cases were reported in 2018 through Boliden's internal whistle-blowing function. Eight of these were not, however, classified as Whistle-blowing cases, as defined by Boliden. The definition states that only concerns regarding serious wrongdoings committed by people in leading positions or key personnel within the group should be reported through the whistle-blower channel. One case submitted via Boliden's whistle-blower function was investigated with the help of an external party during 2018. The investigation, which concerned alleged improprieties in respect of procurement at one of the production units, led to a further tightening of the rules regarding employees' relationships with suppliers.

Material Topic: Anti-competitive behavior

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

Boliden has zero tolerance for corruption and unfair competition. Boliden has accordingly adopted an anti-competition policy and guidelines and has conducted several online courses in cooperation with external providers of these services. The course is structured as three modules, spread over three years. These courses target a selected group of employees, normally those dealing with or having contact with potential competitors. Boliden conducts extensive domestic and international operations and is occasionally involved in disputes and legal proceedings arising in the course of its activities. There are no initiated or ongoing legal actions with respect to anti-competitive behavior or compliance. There are no fines or non-monetary actions, related to anti-competitive behavior, initiated or pending against Boliden. Both anti-corruption and compliance with competition laws and regulations is vital for Boliden and Boliden accordingly strives to incorporate requirements into its contractual agreements with counterparties, requiring them to comply with applicable laws and regulations within these relevant areas, too.

Anti-corruption – part of 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 205-1, 2,3 and 206-1.

Environmental standard disclosures (GRI 300)

Environmental sustainability is a precondition for successful mining and smelting operations. Boliden's environmental strategy is based on three component parts: Environmental Impact, Resource Efficiency, and Credibility. These elements address the areas of greatest importance for Boliden's license to operate and our long-term competitiveness.

Environmental Targets, 2014–2018

Metal Discharges to Water	Discharges of metals to water shall decrease by 25%
Metal Emissions to Air	Emissions of metals to air shall decrease by 10%
Sulfur Dioxide Emissions	Emissions of sulfur dioxide to air shall be reduced by 10%
Carbon Dioxide Emissions	The carbon dioxide intensity shall not exceed 0.77 tonnes of carbon dioxide per tonne of metal produced
Environmental Incidents	Boliden's target is to have zero serious environmental incidents every month

(Base year 2012)

Group Direction beyond 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

*CO₂ intensity is measured as tonnes of CO₂ per tonne of metal produced

Environmental Performance 2018

The performance is presented in the Annual and Sustainability Reports.



301-103 Management Approach Environment

Environmental material topics

Environmental topics, such as energy, 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 material topics as they impact external stakeholders, and determine Boliden's license to operate and ability to develop the business. Reclamation work is also important and in 2018, Boliden completed reclamation work on 2 prioritized objects.

Materials

Materials are a fundamental topic and Boliden's core business is mining (production of concentrates) and smelting (transformation of concentrates to base metals). Recycling of materials, e-scrap and batteries to maximize metal recovery are also important constituents of the circular economy.

Sustainable resource usage

Boliden extracts minerals and produces high-quality metals, which are mainly sold to industrial customers in Europe. Material stewardship is important to us, and 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.

Energy

Metal production is very energy intensive, both in the mining phase and in the refining processes. Boliden's energy consumption is a major cost item, accounting for approximately 14% (13%) in the breakdown of the Group's total operating costs. Boliden's energy policy states that all business units shall implement and maintain energy management systems in accordance with ISO 50001. This also ensures the company's compliance with the rules and regulations imposed by the Energy Efficiency Directive 202/27/EU. Boliden shall reduce its dependence on fossil fuels by using renewable and/or recycled energy wherever possible.

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, and water is therefore considered a material topic.

Biodiversity

Access to large areas of land is essential to the majority of Boliden's activities, i.e. exploration, mining, and the construction of tailings ponds and dams. Boliden's land holdings include key habitats, habitat protection areas, nature reserves, and voluntary designated areas for nature conservation. 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.

Air

Boliden is working with systematic reviews of its actual energy and CO₂ emission trends, to identify possible improvements and efficiency measures. Boliden's units continuously evaluate their material topics during their annual environmental aspects reviews in compliance with the requirements of the ISO 14001 standard.

Using the best available technical solutions, using resources efficiently, and replacing fossil fuels with renewable ones will all be important components of Boliden's efforts to reduce CO₂ emissions. All units are also obliged to work continuously on making improvements to process efficiency.

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 drawn up both at mines and smelters with the aim of reducing diffuse emissions (dust).

Waste

Mines and smelters generate waste consisting of waste rock, tailings sand, slag and sludge. Boliden's waste is normally handled within the producing unit, but some waste requires specific treatment and is sent to another Boliden unit or external facility.

Compliance

Environmental compliance is a material topic, because environmental sustainability is a precondition for successful mining and smelting operations. Legal requirements shall always be met.

Supplier 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 partners 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. Business partners are expected to strive to minimize their environmental impact.

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 by a variety of channels, i.e. 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.

Material Topic: Materials

301-1 Materials used by weight or volume

Levels of mined rock, milled ore, concentrate, and smelting materials production and usage were all similar in 2018 to those posted in previous years. Boliden has included tonnage of rock, ore and concentrates in the material used in its reporting. Other materials specified in the table include waste rock from a mine that is not part of the Boliden Group, which is used as backfill material in Boliden mines. 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, (ktonnes)	2016	2017	2018
Mined rock	100,765	110,256	112,392
Whereof milled ore	49,000	55,000	54,000
Whereof concentrate produced	1,249	1,388	1,361
Smelting materials ¹⁾	2,676	2,656	2,742
Other materials	786	1,174	1,077
Whereof non-renewables	150	154	162

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 tonnes of lead acid batteries and 4,000 tonnes 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 Rönnskär smelter produces 36% (38) of the gold, 26% (27) of the copper, 23% (28) of the silver, and 82% (84) of the zinc from secondary raw materials.

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 (tonnes)	2016	2017	2018
Total secondary feed ¹⁾	333,600	341,800	348,500
Total feed ¹⁾ (primary and secondary)	2,676,000	2,656,000	2,742,000
Recycling rate	12%	13%	13%

1) Adjusted calculations.

Material Topic: Sustainable resource usage

Boliden contributes towards a circular economy

As a sustainability leader in the metals and mining sector, Boliden clearly has a role to play in meeting the societal need for metals as sustainably as possible by ensuring that waste materials are reused.

Boliden promotes more circular resource use

Boliden has created value from waste for many years – long before the term circular economy was coined. Examples include being one of Europe’s largest recyclers of used lead-acid batteries, benefiting from decades-long resource-effective industrial synergies, and continuously finding innovative new ways of creating value from our own waste materials.

The benefits of circular resource use

Ensuring society’s waste materials are safely reused reduces the amount of virgin materials that need to be extracted and processed. This can also help to decrease lifecycle energy use and greenhouse gas emissions, and can ensure potentially hazardous substances are dealt with properly. Reusing waste also often makes financial sense for Boliden and its partners by converting or recovering valuable materials from waste.

The recyclability of metals

Metals can be recycled repeatedly without altering their properties. Metals are also valuable, which makes complex recovery and recycling processes profitable and worthwhile. Boliden uses a variety of consumer and industrial metal waste as raw materials. Waste materials are also exchanged between Boliden’s smelters with different capabilities when it comes to recovering and recycling certain metals from waste in order to optimize metal extraction.

Electronic waste recycling at Rönnskär

Boliden’s Rönnskär copper smelter in Sweden has recycled various waste materials since the 1960s and is today one of the largest recyclers of metal from electronic material in the world. The smelter’s annual capacity for recycling electrical material is 120,000 tonnes, including circuit boards from computers and mobile phones that are sourced primarily from Europe.

Processing hazardous waste from the steel industry at Odda Boliden’s Odda zinc smelter in Norway has recycled waelz oxide filter powder from the scrap steel recycling industry since 2008. The smelter produces 15,000 to 20,000 tonnes of zinc each year from waelz oxide filter powder, which is a hazardous waste.

Recycling lead scrap at Bergsöe

The Boliden Bergsöe smelter in Sweden recycles the lead from 4 million lead-acid batteries each year. The recycled lead is mainly sold to European battery manufacturers, where it is used to produce new batteries. A plastic separation plant will be commissioned in 2019 to recover the plastic from battery casings, which will then be re-used to manufacture new battery casings.

Successful trials to create value from jarosite residue at Kokkola

Boliden is constantly innovating to find new uses for waste materials. The Boliden Kokkola zinc smelter in Finland has conducted promising trials to recover valuable metals from potentially hazardous jarosite iron residue. Boliden's trials have successfully processed the residue to recover valuable zinc, silver and lead. A clean slag with a wide variety of potential construction applications, such as in road construction, has also been produced in cooperation with research partners.

Pioneering manganese recovery research

Anode sludge containing manganese oxide is a common by-product in zinc production that is typically landfilled as it cannot currently be processed to extract the valuable manganese. Boliden Kokkola has, however, succeeded in extracting the manganese from the waste, which has great potential for use in products such as fertilizers, as an additive in the steel industry or as a precursor material for lithium-ion batteries.

It is of vital importance to Boliden that we develop the by-product business along with the metals business. The largest by-product by volume is sulfuric acid, which is sold for industrial use. Slag-based products, such as 'iron sand' from the Rönnskär processes, are another example of Boliden by-products, and one where the raw material comprises slag from copper production. The slag is purified and granulated into a black coarse-grained glassy material, which is very suitable for use as a filler in road and building construction. The use of iron sand reduces the extraction of gravel and sand from nature. The iron sand from Rönnskär is CE marked, which means that Boliden has drawn up procedures for assuring the quality of both the production process and product handling, e.g. for storage and shipping. During 2018, the

chemical composition of the iron sand has been adjusted to fulfil the new Specific Concentration Limits in REACH to be a sellable product, without the need for transport and user instructions for hazardous goods. This is another step in Boliden's efforts to have iron sand classified as a product that conforms to the ideas of the circular economy.

What is a circular economy?

A circular economy goes beyond the current extract-use-dispose industrial model to create circular systems that gain the maximum value from resources by recovering and reusing materials at the end of each service life.

SDG 12: Responsible consumption and production



SDG 12 is one of Boliden's prioritized Sustainable Development Goals that involves ensuring sustainable consumption and production patterns. The goal is closely related to the circular use of materials and the circular economy.

The circularity gap

According to the 2018 Circularity Gap Report by Circle Economy, only 9% of the resources used globally are recycled back into the economy after use. The report argues this leaves a massive 'circularity gap' that must be closed to prevent further and accelerated environmental degradation and social inequality.

Material Topic: Energy

302-1 Energy consumption within the organization

Energy consumption in 2018 totaled 19.7 (19.8) million gigajoules (GJ). Electricity accounts for 16.2 (16.5) million GJ of this consumption, which equates to 4.5 (4.6) 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, but has, until now, been negligible in the larger context. 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. Out of the total indirect energy used, 94% comprises electricity and only 6% is purchased heat.

Direct Energy consumption within the organization (GJ)	2016	2017	2018
Coal & coke	1,743,000	1,844,000	2,053,000
Gas	446,000	289,000	306,000
Oil	1,794,000	2,128,000	2,285,000
Diesel & petrol	1,689,000	1,611,000	1,666,000 ¹⁾
Other	13,000	36,000	49,000
Total renewable energy	29,000	51,000	69,000
Total energy	5,686,000	5,908,000	6,359,000
Electricity, purchased	16,080,000	16,524,000	16,156,000
Heat, purchased	453,000	501,000	1,100,000
Gross energy input	22,218,000	22,934,000	23,614,000
Produced energy, for internal use	2,205,000	2,291,000	2,335,000
Produced energy, sold	3,157,000	3,146,000	3,964,000
Net energy used	19,061,000	19,788,000	19,650,000

1) Whereof 20,571 GJ diesel from renewable sources

302-3 Energy intensity

Boliden's energy intensity was 13.03 (13.39) GJ/t 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 tonnes from Boliden's production sites. This indicator is affected both by process efficiency and by the product mix and raw material properties.

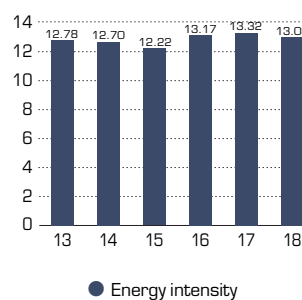
302-4 Reduction of energy consumption

Boliden has implemented routines for purchasing high-consumption electrical equipment and procedures for the evaluation of life-cycle costs in construction and renovation as important parts of its ISO 5001-certified energy management systems. 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 reduced their energy usage by 138,000 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 or steam deliveries. In 2018, 2,335,000 (2,291,000) GJ of heat was used internally, and 3,964,000 (3,146,000) GJ was delivered externally for use in district heating systems.

ENERGY INTENSITY

GJ/t metal



Material Topic: Water

303-1 Interaction with water as a shared resource

Water conservation is an important part of Boliden's policy. Reduction of water use has a high priority without, however, compromising on safety and environmental responsibility. Each Boliden site must assess their water system at least biannually and perform a water risk evaluation.

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 not reported to Boliden. All other water volumes are based on data from flow meters.

Water recycled and reused (million m ³)	2016	2017	2018
Recycled volume	110	106	107
Percentage of water recycled	78%	73%	74%

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 m ³)	2016	2017	2018
Surface water (sea)	80	81	80
Surface water (inland)	40	44	46
Ground water	17	17	16
Collected rain water	1	1	1
Municipal water	2	2	2
Total water withdrawal	140	145	145

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 70% of metal discharges to water while the mines account for the remaining 30%. 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. The remaining 20% comes mainly from wastewater recycling at the Kokkola smelter.

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. In recent years, there has been heavy rainfall, underlining the need for increasing the water treatment capacity, and several of Boliden's operations have consequently implemented measures to meet this need.

In total the discharge of metals and nitrogen to water from Boliden's units decreased in 2018 due to improved water management and control, and the nitrogen treatment plants taken into operation. There was a slight increase during the middle of the year that was mainly due to increased operations.

The management and monitoring of water consumption has also been improved due to the decision that all Boliden's units shall have a Water Management Plan.

Once the water-cleaning 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. Metal discharges to water from Smelters have been stable during 2018, and well below both target and budget.

Water discharge	2016	2017	2018
Metal discharges to water, tonnes (me-eq)	13	9	8
Metal discharges to water, tonnes (mass)	22	15	14
Nitrogen /N-tot/ to water tonnes (mass)	300	236	240

Discharged water volume (million m ³)	2016	2017	2018
To wetland	0	0	0
To inland surface water	64	57	55
To sea surface water	62	71	78
To municipal treatment plants	0.03	0.03	0.03
Total	126	128	133

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 m ³)	2016	2017	2018
Total water withdrawal	140	145	145
Discharged water volume	126	128	133
Water consumption	14	17	12

Material Topic: Biodiversity

304-1 Operational sites in areas of high biodiversity values

Boliden's impacts on biodiversity are above all related to land use in current or abandoned operations. As of December 31, 2018, Boliden owned or controlled 23,100 (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, and for time-limited operations, such as mines, Boliden always ensures that the areas can be reclaimed after the mine closing. 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.

Details of the sites that are located in or adjacent to national or regional protected areas, including Natura 2000 habitats defined by EU Member States, can be found in the table.

Sites	Operation	Country	Size, ha	Protected areas
Aitik	Mine	Sweden	7,158	Yes ¹⁾²⁾³⁾
Bergsöe	Smelter	Sweden	13	No
Boliden Area	Mine	Sweden	5,425	Yes ²⁾
Garpenberg	Mine	Sweden	1,312	No
Harjavalta	Smelter	Finland	452	No
Kevitsa	Mine	Finland	1,420	Yes ¹⁾²⁾
Kokkola	Smelter	Finland	340	No
Kylylahti	Mine	Finland	654	Yes ¹⁾²⁾
Odda	Smelter	Norway	40	No
Rönnskär	Smelter	Sweden	153	No
Tara	Mine	Ireland	894	Yes ²⁾
Old mining areas and forests	-	Sweden	5,266	Yes ¹⁾²⁾³⁾

1) In the area

2) Adjacent to

3) Containing portions of area

All land and forests owned or leased is managed in a forest management plan for each site. The forest management plan has a register divided into separate areas and is connected to a map of them. Protected areas and findings 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 be able to develop the project according to the mitigation hierarchy.

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

304-3 Habitats protected and restored

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 or Sami villages.

There are various different 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 10 prioritized reclamation objects has been drawn up and 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	-	2017	2018
Gillervattnet	Reclamation work	300	2014	2019-21
Näsliden	Reclamation work	5	2015	2018
Holmtjärn	Reclamation work	1	2018	2019
Old Forests Aitik	Ecological compensation	837	2017	2022

Ecological compensation work has been ongoing at Boliden Aitik since 2017. Two areas totaling 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 a possibility for improving the opportunities for recreational and adventure tourism.

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. In 2018, approximately 48 (2) hectares were restored/ reclaimed, while 217 (78) hectares were utilized for operations. Boliden has made ongoing provisions of funds for future rehabilitation. At the end of 2018, a total of SEK 4,016 (3,123) million had been allocated for future reclamation of mining areas and smelters.

Land management (hectares)	2016	2017	2018
Total land holding	22,600	23,000	23,100
Disturbed and not yet rehabilitated (opening balance)	5,937	6,805	6,881
Disturbed in the reporting period	963	78	217
Rehabilitated in the reporting period	95	2	48
Disturbed and not yet rehabilitated (closing balance)	6,805	6,881	7,050

New mines and the expansion of existing businesses

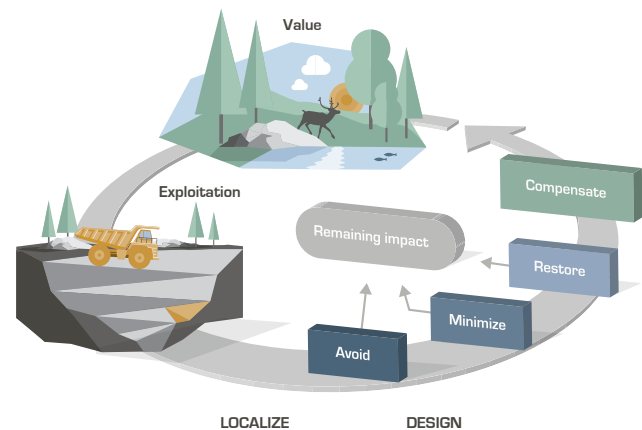
The establishment of new mines and the expansion of existing businesses requires land utilization. The physical impact on surrounding areas of land of the opening of a mining operation, for example, is considerable. A substantial amount of forested land must often be cleared to create space for industrial activities. The aim is to have the minimum possible impact on biodiversity. Once the mine is operational, the impact continues in the form of waste products – such as waste rock and tailings sand – traffic, noise, dust, and other emissions and discharges to air and water.

When new mines are opened in previously undisturbed areas, all of the relevant areas’ natural and cultural values are inventoried. This is part of the EIA, (Environmental Impact Assessment) which is a mandatory part of the permit application process for new activities. 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 and the establishment of new operations in already disturbed areas. 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), by 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 ecological 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 the 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 the 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. 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 impact, but also adds or creates new values. The work is based on the four steps of the so-called harmless hierarchy; avoid, minimize, restoration and offsets.



Material Topic: Air Pollution Emissions

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 WBCSD¹⁾ GHG²⁾ Protocol, together with additional guidelines from the EU and/or national authorities.

The CO₂ 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 to the CO₂ data reported within ETS.

305-2 Energy indirect (Scope 2) GHG emissions

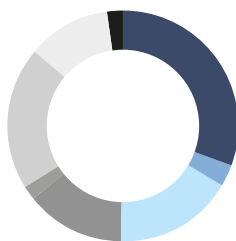
Boliden reports this indicator for the units over which it has operational control and includes only production-related indirect emissions. In 2015, Boliden began using location-based emission factors. This was an adaptation to the updated GHG Protocol Guidelines for Scope 2 reporting. The calculation 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 2018 reporting, the following emission factors were applied: for the operations in Sweden 10.8 (11.0), Finland, 106.8 (147.2), Norway 9.0 (8.0), and Ireland 417.6 (425.2) g/kWh.

Carbon dioxide emissions, Scope 1+2, tonnes	2016	2017	2018
Direct emissions, (305-1)	594,000	605,000	644,000
Indirect emissions, (305-2)	459,000 ¹⁾	419,000	327,000
Total (305-1 + 305-2)	1,052,000¹⁾	1,024,000	971,000

1) The indirect emissions for 2016 have been corrected to 459,000 from 404,000 t due to an incorrect CO₂ emission factor in the previous GRI report disclosure.

CARBON DIOXIDE EMISSIONS (SCOPE 1 + SCOPE 2), 2018 PER SOURCE

The total reported CO₂ emissions are 0.971 (1.024) Mtonnes for the year.



- Electricity, 31%
- Heat, 3%
- Oil, 17%
- Raw material, 14%
- Gas, 2%
- Coal and coke, 20%
- Diesel and petrol, 12%
- Other, 2%

1) World Business Council for Sustainable Development
2) Greenhouse gas

305-4 GHG emission intensity

Boliden's GHG intensity was 0.64 (0.69) t/t metal. The GHG intensity is reported as the product emission intensity (metric tonnes of direct [Scope 1] and indirect [Scope 2] emissions per unit of metal product). Boliden only includes CO₂ gas in the GHG intensity.

The new CO₂ intensity target is to reduce emissions by 3% per year measured from 2017. Boliden has measured CO₂ intensity for all units since 2012.

305-5 Reduction of GHG emissions

The GRI definitions state that this indicator should reflect reductions of CO₂ emissions identified under 305-1 and 2. The reductions result is estimated from reported energy savings and energy efficiency initiatives reported in 305-2.

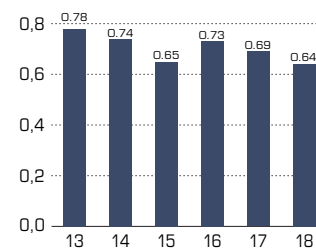
Boliden strives to deliver the excess heat from its processes for use in district heating, wherever possible. The heat supplied by Boliden Bergsöe, Boliden Rönnskär, Boliden Kokkola and Boliden Harjavalta in 2018 corresponds to 340,000 (270,000) tonnes/annum of CO₂ (Scope 1) if the same amount of heat had been produced from a fossil-fuel source.

Boliden is also, over and above these measures, 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.

Boliden is a co-owner of a production company for wind-based power, VindIn AB, which builds and operates wind farms in Scandinavia. The purpose of VindIn is to take a longer-term approach and to deliver low-cost, renewable electricity. VindIn currently produces about 300 GWh in its three wind farms in Sweden and Finland.

In 2018, Boliden Bergsöe inaugurated the microalgae cultivation for treatment of process emissions. The method used entails using waste heat from the process to grow algae. The project is expected to capture CO₂ emissions, create energy and clean metal emissions from the flue gas.

GREENHOUSE GAS EMISSION INTENSITY t CO₂/t metal



- Greenhouse gas emission intensity

305-7 Other significant air emissions

Other significant air emissions deriving from Boliden’s operations are nitrogen oxides (NOx), sulfur oxides (SOx), metals, and dust. The most common of the sulfur oxides (SOx/SO₂) is sulfur dioxide, and Boliden generally uses the expression ‘sulfur dioxide’ to describe this emission. The figures for sulfur dioxide and NOx disclosed in the table are the direct measured emissions from sources at Boliden’s smelters. The figures for metals and dust include the 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.

Sulfur dioxide emissions to air are mainly attributable to gases generated during the smelting processes at the Harjavalta and Rönnskär copper smelters. The amount of sulfur dioxide emitted during the process depends on factors such as process stability, the efficiency of the gas cleaning systems, and the amount of sulfur in

the raw materials. One way of reducing emissions is, accordingly, to maintain a stable smelting process and to have continuous and effective maintenance work and control of the process. The monitoring and control of abatement systems for effective gas cleaning is important work and is carried out continuously.

The SO₂ emissions to air increased slightly in 2018 due to increased emissions at all Boliden Smelters in Q2. All leakages were effects of changes in the processes, which caused unexpected leakages. In Harjavalta there were problems in a converter, which were solved during maintenance work in June. In Kokkola there were leakages in the heat exchanger which were resolved in May. A new reduction agent grade was used at Rönnskär, resulting in higher SO₂ emissions. Several leakages in Rönnskär’s converter hall were also identified and are currently still ongoing. They are, however, scheduled for correction during 2019.

The ongoing work focuses on process stability and the improvement and/or replacement of technology. 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 (tonnes)	2016	2017	2018
NOx	380	450	450
SO ₂	7,060	7,360	7,720
Particulate matter	110	193	181
Metal emissions to air (me-eq)	100	109	92
Metal emissions to air (mass)	22	21	19

Material Topic: Discharges to water and Waste

306-2 Waste by type and disposal method

Boliden handles considerable amounts of waste materials. These waste materials mainly comprise various types of dust and slag, tailings, rock, and other mineral formations. Boliden has developed processes to extract as much value as possible from the material streams at mines and smelters. Hazardous waste is sent for disposal or stabilization, in some cases to landfill and deep repository. The increasing amounts of waste rock in 2018 are attributable to the expansion of the Kevitsa mine in Finland.

Waste by type and disposal method (tonnes)	2016	2017	2018
Hazardous waste, total	826,000	873,000	876,000
Whereof to external use, treatment, or recovery	5,800	7,400	7,300
Whereof to external disposal	220	400	1,850
Non-hazardous waste, total	252,000	355,000	309,000
Whereof to external use, treatment, or recovery	69,800	75,200	85,800
Whereof to external disposal	1,500	1,600	2,200
Waste rock, total	52,036,000	55,482,000	58,785,000
Waste rock for internal construction	5,417,000	6,187,000	8,892,000
Storage of waste rock for future use	11,134,000	125,000	274,000
Sold waste rock	404,000	342,000	5,000
Tailings total	46,919,000	52,957,000	52,026,000
Tailings for internal construction	2,729,000	2,865,000	3,182,000

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. EU waste legislation currently has a strategic approach that views waste as a resource and deposition as the last option (Waste Framework Directive, 2008/98/EC). 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. The majority of Boliden's process and mining wastes are sent to landfills in accordance with the EU Landfill of Waste Directive (1999/31/EC) and the Mining Waste Directive (2006/21/EC). The remainder is used as construction material or as filler material. Waste rock dumps are covered continuously, wherever possible, in order to prevent weathering or 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 sand or other waste and for water management. This figure includes both operational and decommissioned facilities. Dam facilities in Sweden are managed according to GruvRIDAS (mining industry guidelines for dam safety).

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 order to produce the metal. The excess heat from the process is used for district heating.

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.

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. Odda stores jarosite and slag in mountain caverns. In 2018, the Board approved an SEK 750 m investment in a new leaching plant at the Rönnskär site, with construction starting in 2019. This will enable waste material that has been stored at the site since 1975 to be reprocessed. The 460 ktonnes of waste material currently held will decrease to 220 ktonnes. The remaining 220 ktonnes will be stored in a deep underground repository, located under the Rönnskär smelter plant. The first phase of construction work on the underground repository was finished in 2018, and deposition of waste material in the repository will commence in 2020. This is a globally unique solution. This is the only place in the world where a deep underground repository shares a site with a smelter. Boliden has no organic waste material that is suitable for composting, 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 36 (23) larger (more than 150 liters) oil and/or diesel spills, were reported from Aitik, Boliden Area, Kevitsa, Odda 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.

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 2018 7,300 (7,400) tonnes were sent for external use, treatment, or recovery and 1,850 (400) tonnes were sent for external disposal.

Material Topic: Environmental Legislation Compliance

307-1 Non compliance with environmental laws and regulations

Boliden has not been hit by any corporate environmental fines in 2018.

Material 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. 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-standard disclosures (GRI 400)

Boliden generates value by having top-quality operations, processes and products. Employees who are skilled, committed, and who accept personal responsibility are crucial. Boliden offer its employees a safe and inspiring work environment. By acting responsibly towards neighbors, business partners, and other stakeholders, Boliden can maintain a good reputation as a metals company and employer.

Boliden's social targets 2014–2018

Accidents	Boliden's target is to have zero accidents resulting in absence from work every month by 2018
Sick Leave	The sick leave rate shall not exceed 3.0% by 2018
Gender Equality	Women shall comprise at least 20% of the workforce by 2018

Group Direction beyond 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%

Social Performance 2018

The performance is presented in the Annual and Sustainability Reports.



401–403 Management Approach Social

Employment

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.

Health and Safety

Occupational health & safety is Boliden's most important issue as it involves the safety and, ultimately, the lives of Boliden's employees and contractors, and the materiality is obvious in a work environment with inherent risks. Employment, Labor/Management Relations, Training & Education, Diversity & Equal Opportunity, and Equal Remuneration are material topics as they impact Boliden's ability to attract, retain, and develop people.

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 material to Boliden's ambition to be the sustainable first link in the metal's value chain.

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 work tasks in a safe and efficient way at all times. Boliden considers training and education as material topics and has a number of internal programs for career and skill development.

Diversity and equal opportunity

Diversity leads to dynamism, creativity, and, ultimately, to greater profitability. Boliden works to ensure its workforce is made up of people with different backgrounds, ages, and experiences.

Rights of indigenous peoples

Operations in northern Sweden and northern Finland are in the reindeer-herding areas. Boliden promotes open dialogue 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. Conservation and reclamation of mining areas which reach the end of their production lifespan is, therefore, part of Boliden's operations and responsibilities.

Supplier social and environmental assessment

In line with its values to constantly improve and take responsibility for its entire value chain, Boliden works together with its suppliers and customers to be a responsible and credible business partner.

Society

The majority of topics deemed to be material with regard to society concern Boliden's relationship with external stakeholders, and are at the core of Boliden's ambition both to promote sustainability in the industry and to be the sustainable first link in the metal's value chain.

They may also have a significant impact on perceptions of Boliden and play a key role with regard to Boliden's license to operate and ability to develop its business. These topics are local communities, anti-corruption, anti-competitive behavior, compliance, and resettlement. Industrial operations change the landscape and closure planning is, accordingly, an additional important factor for consideration during the licensing process.

Social Grievance Mechanisms

Effective grievance mechanisms play an important role in remedying 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 whistle blower function, which can be accessed by all employees via the intranet, ensuring that they are protected against any form of reprisals. Any grievances filed via these channels are to be dealt with swiftly and according to standardized procedures.

Material 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

	2016		2017		2018	
	Number	%	Number	%	Number	%
Group Total	515	9	449	8	483	8
<30 years	202	39	163	36	181	37
30-50 years	237	46	238	53	260	54
>50 years	76	15	48	11	42	9
Men	429	83	333	74	376	78
Women	86	17	116	26	107	22
Sweden	270	52	312	69	284	59
Norway	24	5	13	3	20	4
Finland	213	41	113	25	162	34
Ireland	7	1	10	2	16	3
Other countries	1	0.2	1	0.2	1	0.2

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

	2016		2017		2018	
	Number	%	Number	%	Number	%
Group Total	324	6	323	6	381	7
<30 years	64	20	39	12	45	12
30-50 years	93	29	119	37	171	45
>50 years	167	52	165	51	165	43
Men	273	84	268	83	307	81
Women	51	16	55	17	74	19
Sweden	147	5	185	6	245	8
Norway	26	8	14	5	14	5
Finland	126	8	108	7	97	6
Ireland	24	4	15	3	24	4
Other countries	1	8	1	8	1	9

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 health-care 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 health-care 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 2018 Boliden did not experience any strikes or lockouts exceeding one week's duration. 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.

Material 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 continuously measures its employees' lead levels in order to assure their health.

403-3 Occupational health services

All Boliden employees have access to occupational health services in 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 analyzed, 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

In 2018, an agreement was reached on the frequency and organization of Boliden's Top Management meetings with union representatives. The new agreement is based on the European Workers' Council Directive and the meeting rate is now 4 per year. Worker participation, consultation and communication on occupational health and safety is also a requirement of ISO 45001:2018.

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 the 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 5,800 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 safety training for all employees (the term employee also includes, here, any form of supervised worker who is not a contractor) according to a fixed schedule, with a view to improving knowledge and awareness and to providing constant reminders of the importance of working safely.

The working environment in Boliden has the highest priority and the group has a zero vision for accidents. A strong safety culture, coupled with proactive risk work, will help Boliden achieve success. In 2018, more than 115 Boliden managers attended a Safety Leadership Masterclass. A second level, bottom-up training package is now scheduled at many units for 2019. This is expected to create an even stronger safety culture in the future.

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 must take responsibility and devote time to considering and following the routines essential to accident avoidance. The principle of 'safety first at all times' must be clearly established in every employee's mind. Promotion of worker health is a requirement of ISO 45001:2018, Workers' health is also an important topic during the annual BeSafe Days.

The number of lost time injuries decreased by 18% in 2018 compared to 2017. BA Smelters reported a 37% reduction, which is an extraordinary achievement in the industry. This is due to the continued focus on leadership commitment, preventive risk management, and better employee 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 2018. 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 employees' 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 working in Boliden's 11 units.

403-9 Work-related injuries

The number of accidents leading to absence from work (LTI) decreased by 18% in 2018 from 6.3 to 5.1 per one million hours worked. In 2018, 30 (47) accidents resulting in absence from work were reported at Boliden's units by Boliden employees. The number of accidents resulting in absence from work, including contractors, was 77 (94). The number of work days of absence due to accidents among Boliden's employees was 475 (1,268).

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.

LTI Frequency¹⁾ Boliden employees

	2016	2017	2018
Sweden	7.3	3.5	3.3
Norway	5.4	2.0	0.0
Finland	8.1	8.5	3.5
Ireland	1.9	4.8	2.8
Group	6.7	5.0	3.1

LTI Frequency¹⁾ Boliden contractors

	2016	2017	2018
Sweden	11.3	9.0	7.3
Norway	8.1	0.0	0.0
Finland	11.7	10.9	11.7
Ireland	0.0	2.4	8.3
Group	10.3	8.7	8.6

LTI Frequency¹⁾ employees and contractors

	2016	2017	2018
Sweden	8.5	5.5	4.7
Norway	6.3	1.3	0.0
Finland	9.5	9.5	6.7
Ireland	1.4	4.1	4.5
Group	7.9	6.3	5.1

Lost day rate¹⁾ Boliden employees

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

Work days	2016	2017	2018
Sweden	99	51	28
Norway	118	253	0
Finland	184	237	53
Ireland	525	226	163
Group	172	135	49

Sick leave rate¹⁾ Boliden employees

Percentage	2016	2017	2018
Sweden	4.5	4.5	4.3
Norway	4.7	7.5	7.2
Finland	4.5	4.6	4.5
Ireland	3.4	3.5	4.2
Group	4.4	4.5	4.5

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)

Work-related fatalities are very rare within Boliden.

Work-related fatalities employees and contractors

Percentage	2016	2017	2018
Employees	0	0	0
Contractors	0	0	0
Total	0	0	0

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 followed up on unit level. There is a plan to follow up this data on Group level starting 2019.

Material 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 of the ‘on-the-job’ training lies with the line management. Boliden has not set the average number of hours of training targets for different job categories – it is the individual needs that determine the methods and quantity of the training activities.

403-3 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 2018, 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.

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

Category	2016	2017	2018
Men	16.5	17.8	19.6
Women	15.5	16.9	20.6
White-collar	20.1	23.2	21.5
Blue -collar	14.4	14.8	18.6
Total	16.3	17.7	19.6

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

	2016	2017	2018
Group Total	77	82	81
Men	76	81	80
Women	83	87	86
White-collar	76	87	83
Blue -collar	72	75	75

New Identity an Access Management system

In 2018 started a new pre-study with the aim of introducing an Identity and Access Management System for the Boliden Group. The project addresses the problem of the lack of a common global HR data system. People and organizational data are currently managed in four separate and national pay-roll systems. One of the benefits of an Identity and Access Management System is that it should enable a common maintenance methodology for HR master data, thereby not only ensuring information availability and quality, but also simplifying HR data administration.

Material 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 at the end

of 2020 calculated as FTE. In 2018, the share was 18.2% (17.6). Notably, the proportion of women at management level, among Boliden's so-called top-100, was 24% (23), which is higher than average. 3 (3) of Boliden's 11 mines and smelters are led by women who are also members of the group management.

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

	2016			2017			2018		
	Board of Directors	Group Management	Super-visors	Board of Directors	Group Management	Super-visors	Board of Directors	Group Management	Super-visors
Total number	11	5	503	11	5	588	11	5	599
Women, %	36	20	16	36	20	15	50	20	14
Men, %	64	80	84	64	80	85	50	80	86
<30 years, %	0	0	5	0	0	4	0	0	4
30-50 years, %	9	40	58	9	40	59	18	0	59
>50 years, %	91	60	37	91	60	37	82	100	37

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

Employees	2016	2017	2018
Total number	5,719	5,921	6,029
Blue-collar, %	67	66	65
White-collar, %	33	34	35
Women, %	18	18	19
Men, %	82	82	81
<30 years, %	15	16	16
30-50 years, %	51	51	51
>50 years, %	34	33	33

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.

Material Topic: Non-Discrimination

406-1 Incidents of discrimination and corrective actions taken

Boliden's commitment to diversity is clearly stated in Boliden's Diversity Policy, which is a part of Boliden's Management Manual. 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.

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

10 incidents of discrimination were reported to Boliden during 2018 through the formal grievance mechanisms or the whistleblower function and all incidents were addressed and closed during the reporting period.

Material Topic: Rights of Indigenous People

MM5 Operation in or adjacent to indigenous peoples' territories

In northern Scandinavia the Sami as an indigenous people has 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-establishment of lichens – Pilot tests have been set up in Boliden and Aitik in partnership with the Swedish University of Agricultural Sciences

MM6 Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples

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.

MM7 The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities, and indigenous peoples

Boliden's business is based on the strategy of responsible mining and minimizing of impact on other interests, the environment, society, reindeer herding etc. The strategy for conducting mining activities in parallel with other interests is characterized by early, 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.

Material Topic: Local Communities

413-1&2 Operations with local community engagement, impact assessments, and development programs

Boliden is a mature company and local community-involvement activities exist at all main locations. 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 the 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 carried out during the year. During the consultation process, special efforts have been made in regard to schoolchildren of different ages, different interest groups, neighborhoods, communities and the municipality, including citizens involved in the process of future use and development.

In addition to consultation processes, continuous dialogue and interaction with stakeholders and the local community takes 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.

Social-impact assessments can be 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.

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.

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 2018, Boliden's units sponsored 347 (392) local activities to the tune of approximately SEK 10.7 (9.5) million.

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.

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.

Material Topic: Business Partners Social and Environmental Assessment

308-1 & 414-1 New suppliers that were screened using social criteria

Boliden's significant risks in the supply chain are identified in our raw materials supply. In total, 100% of all new raw materials suppliers and customers managed by Boliden Smelters have been evaluated during 2018.

In the fields of logistics, products and services 25% of new suppliers with a spend over 1 MSEK has been evaluated during 2018.

Boliden management processes for Evaluation of Business Partners

Boliden sources raw materials, energy, services and equipment from various external suppliers around the world. Operating in a global market with varied legislation, ethics, working conditions, and environmental standards requires a comprehensive approach to risk management throughout the value chain. Boliden holds its suppliers and customers to the same high standards as it does its own organization – to mitigate risk throughout its value chain. This involves a systematic and risk-based process for managing suppliers, depending on their estimated level of risk and strategic importance. Boliden's Business Partner Code of Conduct is

based on the ten principles of the UN's Global Compact, the ILO conventions, the IFC Guidelines, ISO standards, international industry standards, and best practice, and sets out the minimum level of conduct required by all value chain partners – regardless of whether Boliden is the buyer or seller of raw materials, products or services.

Business partner evaluations are an essential part of how Boliden manages risk, as well as of how Boliden lives up to its values of constantly improving and taking responsibility for its entire value chain. The assessment covers financial, environmental, ethical and social performance. Evaluations are performed on

both suppliers and customers. The stringent nature of the evaluation means that prospective suppliers might not actually become Boliden business partners. Suppliers may be rejected for various reasons, including issues related to environmental and social impacts, and other supplier risks. Existing suppliers are typically evaluated every 3 to 5 years depending on their perceived level of risk.

Self-assessments are used to evaluate all potential business partners and ensure they comply with Boliden's Business Partner Code of Conduct. Dependent on identified risks, the evaluation

of Business Partners is done in escalations using different tools and inputs and following different process paths: Short Supplier Assessment Questionnaire (SAQ), Extended SAQ, Site visit, Audit.

Suppliers are evaluated by Boliden specialists in a desktop study based on environmental, social and technical information provided by the supplier themselves and from information in the public domain. If necessary a site visit and a specialist audit team for that particular supplier is assembled. Boliden has extensive in-house competence to draw on for the audit team, depending on the particular supplier being audited. Any specialist competence gaps, particularly within the areas of human rights and ethics, are filled by external consultants or local country experts.

The audit team visits the site to systematically check that written documents, instructions and procedures comply with actual conditions on the ground and to get a comprehensive understanding of the company and the site. The final step of the audit involves the team compiling a risk assessment report that includes risks associated with the country, the company and the site. The report has to be approved by the Boliden Business Area Management, and high-risk suppliers might even need approval from Group Management, before the supplier can become a Boliden business partner.

Value chain risk management is also an essential part of Boliden's license to operate, for example to maintain its inclusion on the London Bullion Market Association (LBMA – www.lbma.org.uk) Good Delivery List for recommended gold producers. Boliden's reports to the LBMA are valid for Boliden Rönnskär and are verified by the accounting firm KPMG. They can be viewed at www.boliden.com/sustainability.

Working with suppliers to improve Boliden's value chain

Due to the nature of the metals and mining sector, some long-term strategic business partners are of such great importance that Boliden may choose to work proactively to overcome deficiencies if they are considered to be a key partner. In such circumstances, Boliden works with the business partner to draw up a development plan designed to rectify any deficiencies. If the risk is deemed to be excessively high, or if the business partner is unwilling to make the necessary improvements, Boliden will end the partnership.

Boliden works actively to promote best practices among its suppliers in order to work beyond compliance and further improve its value chain. This typically involves feedback on the audit process where Boliden has identified areas for particular suppliers in which to improve, including promoting the use of best practice and best available technologies. Boliden is also a member of networks to share good practice experience, such as the Swedish Network for Business & Human Rights. Working with suppliers is a reciprocal process where all parties learn from each other and improve over time. Boliden follows up its recommendations for improvements as part of its efforts to take responsibility for its entire value chain. If a business partner does not comply with the corrective action plans and Boliden Business Partner Code of Conduct, the agreement is terminated. Boliden's Business Partner Code of Conduct is available on Boliden's 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 materials, waste and hazardous waste. Boliden has a long-term policy of only paying for hazardous waste management services once a material has been successfully processed. This is verified by conducting site visits and audits, which are approved by the Business Area Director to ensure that the waste has been properly dealt with.

Boliden's policy is that no concentrates or secondary raw materials shall be acquired from areas with armed conflict. Risk management processes promote transparency by ensuring country of origin documents for all raw materials to verify they do not come from conflict regions. Boliden's Corporate Responsibility Evaluation of Business Partners helps to verify that its secondary and primary raw material suppliers do not source conflict minerals.

Dispute concerning the export of residual product. In 1984 and 1985, Boliden exported a residual product from Rönnskär to Chile. The purpose of the export was to reprocess the material in order to minimize the amount of material for deposits; information regarding this case is presented in the Annual and Sustainability report.

Material 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, 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 started with the people living in the villages and a compensation offer 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.

MM10 Number and percentage of operations with closure plans

Boliden's operations involve land use for mining, industrial areas, and ponds for use as tailings and clarification ponds. Conservation and reclamation of mining areas which reach the end of their production lifespan is, therefore, part of Boliden's operations and responsibilities. The goal is to use the best available technology, complemented by continuous monitoring of the work that has been carried out. All of Boliden's present operations, both mines and smelters, have environmental closure plans which have been approved by the authorities. In 2016, Boliden worked actively on the reclamation of four former mine sites. At the end of 2016, a total of SEK 2,873 million (1,943) had been set aside for the remediation 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 Directive for 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. During the reporting period, fires occurred at the Garpenberg mine and at the Kristineberg mine in the Boliden Area. Several environmental incidents involving spillages and the leakage of chemicals also occurred. Boliden's emergency preparedness procedures have worked satisfactorily and led to the minimization of damage to people, property, and the environment.

Material 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 2016. 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.

Human Rights – part of the ten principles of UN Global Impact

Principle 1: Boliden support and respect 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 assessment. The majority of Boliden's human-rights risks are related to the supply chain. Additional focus areas, depending on the nature and geography of the supplier, include the freedom of association & collective bargaining, child labor, and forced and compulsory labor. These issues are covered by Boliden's Supplier Assessment.

Principle 2: Boliden's code of conduct is designed supported by the UN Declaration on Human Rights and ILO conventions.

Boliden's social responsibility includes protection of human rights. 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.

No formal grievances were filed relating to human rights impacts on Boliden's own employees in 2018. No grievances relating to human rights were reported via the whistle blower function.

Labor – part of the ten principles of UN Global Impact

Principle 3: Boliden should uphold the freedom of association and the effective recognition of the right to collective bargaining. All of Boliden's 5,911 employees are covered by collective bargain agreements.

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

Principle 5: Boliden should uphold the effective abolition of child labor. Boliden adheres to the UN Declaration of Human Rights and under no circumstances may child labor be employed or used in our operations, directly or indirectly through business partners.

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.

At the end of 2018, 9 formal grievances about labor-practice grievances related to Boliden employees were filed. All grievances were addressed and 7 cases were resolved during the reporting period. In addition, one grievance about labor-practice filed prior to the reporting period was resolved during 2018.

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

Introduction

We have been engaged by the Board of Directors of Boliden AB to undertake a limited assurance engagement of the Boliden AB Sustainability Report for the year 2018. The Company has defined the scope of the Sustainability Report on page 4-7 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 The Global Reporting Initiative (GRI)) which are applicable to the Sustainability Report, as zpany 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.

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 IAASB's 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 2019

Deloitte AB

Jan Berntsson
Authorized Public Accountant

Lennart Nordqvist
Expert Member of FAR

Production: Boliden in cooperation with Narva.

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Stockholm, March 2019

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