

# SUSTAINABLE METAL PRODUCTION FOR THE FUTURE

# GRI report 2016

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Read more at  
[www.boliden.com](http://www.boliden.com)

## About this report

Boliden Group's sustainability reporting is prepared in accordance with the Global Reporting Initiative G4 Guidelines. We report in accordance with the G4 'Core' application level, which represents a balanced and reasonable presentation of our organisation's economic, environmental, and social performance. The 2016 reporting is composed of two units: one that is integrated into the 2016 Annual Report and which discloses the Group's value creation, operations and risk assessment including the sustainability perspective, and one supplementary GRI Report that

constitutes a more extensive declaration of our impact, with full references to the GRI Content Index.

The sustainability reporting (parts of the 2016 Annual Report and this 2016 GRI Report) has been reviewed by means of an external limited assurance engagement in accordance with RevR 6 Assurance of Sustainability Reports issued by FAR.

Boliden's 2016 Annual Report (pdf), Bolidens web-based 2016 GRI Report, and a printable 2016 GRI Report(pdf), are all available on Boliden's website.

## Categories



Learn more about job creation and other economic impacts in the Economic Performance section

G4-EC page **13**



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

G4-EN page **17**



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

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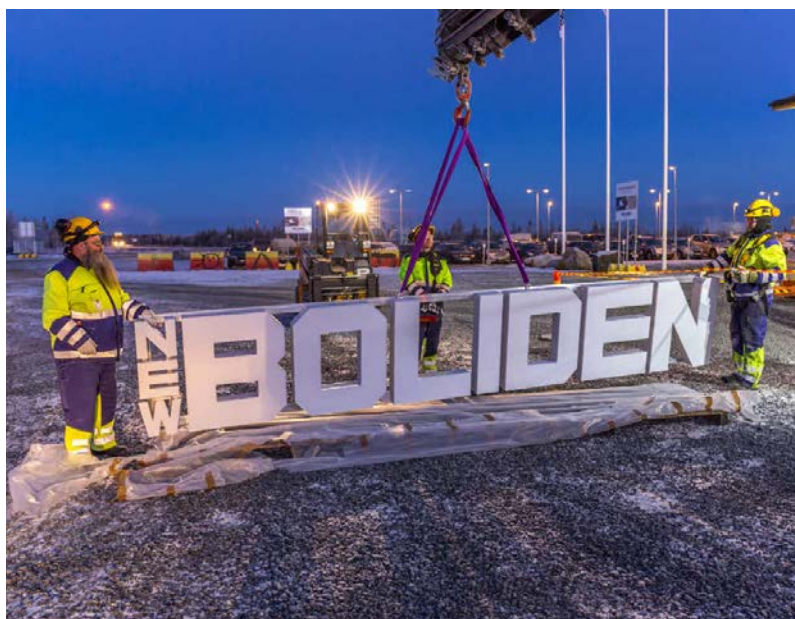
# About Boliden

## About Boliden

Boliden is a metals company 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 areas and five smelters in Sweden, Finland, Norway, and Ireland. Its shares are listed on NASDAQ Stockholm, segment Large Cap.

Boliden is assessed periodically by a number of Socially Responsible Investment (SRI) organisations and analysts. As at the end of 2016 Boliden is part of the FTSE4Good Ethical Index (London), the STOXX ESG Leaders Index (Zurich), and the MSCI ESG indices (New York).

Boliden continues to be awarded Prime Status by Oekom Research (Munich). With the rating B-, Boliden is among the best companies in the metals and mining sector.



## Key performance data

Group KPI	2016	2015
EC - Return on capital employed, %	15	10
EC - Net debt/equity ratio, %	32	23
EC - Dividend per share, SEK	5.25	3.25
EN - Metals to water, tonnes Me-eq	13	18
EN - Metals to air, tonnes Me-eq	100	88
EN - Carbon dioxide intensity, tonne/tonne	0.69	0.65
EN - Sulphur dioxide emissions, ktonnes	7.1	7.2
EN - Environmental incidents, per month	1.4	1.2
SO - Accidents, LTI frequency	7.9	8.9
SO - Sick leave, %	4.4	4.6
SO - Female employees, FTE %	17.8	17.8

## CEO Lennart Evrell

"A strong balance sheet and competitiveness within our sector generate financial sustainability that allows us to take responsibility for employees, environment and society. Our businesses are exposed to risks and Boliden are working intensively on a common safety culture based on the belief that all accidents are preventable. There is strong support for the mining and smelting industry, and we work hard to be a role model within sustainability. We welcome strict demands on our business and there are still challenges when it comes to minimization of impact to air, land and water. Therefore, we make priorities that define how to get maximum environmental effect of invested funds."

# GRI Content Index

Boliden's complete 2016 GRI index in accordance with Global Reporting Initiative's G4 standard, is presented below. It enables a navigation of the disclosure of organisational profiles, strategies, report parameters, material aspects, management approaches (DMA), performance indicators and Mining & Metals sector supplement indicators (MM). It includes references to Boliden's

environmental, social and economic goals and results. All DMA-related material aspects and performance indicators are covered by a third party audit. A symbol is displayed in cases where Boliden reports partially (with omissions) on a material aspect and the reasons for the omissions are provided in connection with the aspect in this GRI Report.

GRI = GRI Report 2016

AR = Annual Report 2016

DMA = Disclosure on Management Approach

☉ = Partially reported, reason for omission is provided

GENERAL STANDARD DISCLOSURES		Reference	Omissions
<b>Strategy and analysis</b>			
G4-1	CEO statement	AR 4-5	
<b>Organisational profile</b>			
G4-3	Name of the organisation	Boliden AB (publ)	
G4-4	Primary brands, products, and services	AR 10-11, 14-19	
G4-5	Location of headquarters	GRI back cover, AR 120	
G4-6	Name of countries where the organisation operates	GRI 3, AR 120	
G4-7	Ownership and legal form	AR 52-53	
G4-8	Markets served	AR 12-14, 80-81	
G4-9	Scale of the reporting organisation	AR 80-81	
G4-10	Number of employees	GRI 12	
G4-11	Employees covered by collective bargaining agreements	GRI 12	
G4-12	Description of supply chain	AR 50-51	
G4-13	Significant changes during the reporting period	GRI 8	
G4-14	Precautionary approach or principle	GRI 9, AR 54-57	
G4-15	List of externally developed economic, environmental and social charters	GRI 9	
G4-16	List of membership in associations	GRI 10	
<b>Identified material aspects and boundaries</b>			
G4-17	List of entities included in financial statement	AR 88	
G4-18	Definition of report content and Aspect boundaries	GRI 8	
G4-19	Material Aspects	GRI 10-11	
G4-20	Aspect Boundary within the organisation	GRI 10-11	
G4-21	Aspect Boundary outside the organisation	GRI 10-11	
G4-22	Restatement of information	No	
G4-23	Significant changes from previous reporting periods	No	
<b>Stakeholder engagement</b>			
G4-24	List of stakeholder groups engaged	GRI 10, AR 40	
G4-25	Basis for selection of stakeholders	GRI 10	
G4-26	Approach to stakeholder engagement	GRI 10	
G4-27	Topics and concerns raised through stakeholder engagement	GRI 10, AR 40	
<b>Report profile</b>			
G4-28	Reporting period	Calendar year	
G4-29	Previous reporting date	March 2015	
G4-30	Reporting cycle	Annually	
G4-31	Contact point	GRI back cover	
G4-32	GRI option, Content Index, and references	G4 Core	
G4-33	External Assurance	AR 104	
<b>Governance</b>			
G4-34	Governance structure	AR 58-63	
<b>Ethics and integrity</b>			
G4-56	Code of conduct	GRI 9	

## GRI CONTENT INDEX

SPECIFIC STANDARD DISCLOSURES		Reference	Omissions
CATEGORY: ECONOMIC		DMA	GRI 8-11, 13
<b>Aspect: Economic performance</b>			
G4-EC1	Direct economic value generated and distributed	GRI 15	
G4-EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change	GRI 15	
G4-EC3	Coverage of the organisation's defined benefit plan obligations	GRI 15	●
G4-EC4	Financial assistance received from government	GRI 15	
<b>Aspect: Market presence</b>			
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation	GRI 16	
<b>Aspect: Indirect economic impacts</b>			
G4-DMA	Aspect Specific DMA	GRI 16	
G4-EC8	Significant indirect economic impacts, including the extent of impacts	GRI 16	
CATEGORY: ENVIRONMENTAL		DMA	GRI 8-11, 17
<b>Aspect: Materials</b>			
G4-EN1	Materials used by weight or volume	GRI 19	
G4-EN2	Percentage of materials used that are recycled input materials	GRI 19	
<b>Aspect: Energy</b>			
G4-DMA	Aspect Specific DMA	GRI 19	
G4-EN3	Energy consumption within the organisation	GRI 20	
G4-EN5	Energy intensity	GRI 20	
G4-EN6	Reduction of energy consumption	GRI 20	
<b>Aspect: Water</b>			
G4-EN8	Total water withdrawal by source	GRI 21	
G4-EN10	Percentage and total volume of water recycled and reused	GRI 21	
<b>Aspect: Biodiversity</b>			
G4-DMA	Aspect Specific DMA	GRI 21	
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	GRI 21	
G4-EN13	Habitats protected or restored	GRI 22	
MM1	Amount of land disturbed or rehabilitated	GRI 22	
<b>Aspect: Emissions</b>			
G4-DMA	Aspect Specific DMA	GRI 23	
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	GRI 23	
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	GRI 23	
G4-EN18	Greenhouse gas (GHG) emissions intensity	GRI 23	
G4-EN19	Reduction of greenhouse gas (GHG) emissions	GRI 24	
G4-EN21	NOx, SOx, and other significant air emissions	GRI 24	
<b>Aspect: Effluents and Waste</b>			
G4-EN22	Total water discharge by quality and destination	GRI 25	
G4-EN23	Total weight of waste by type and disposal method	GRI 25	
G4-EN24	Total number and volume of significant spills	GRI 26	
MM3	Total amount of overburden, rock, tailings etc.	GRI 25	
<b>Aspect: Compliance</b>			
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	GRI 26	
<b>Aspect: Transport</b>			
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organisation's operations, and transporting members of the workforce	GRI 26	
<b>Aspect: Supplier Environmental Assessment</b>			
G4-DMA	Aspect Specific DMA	GRI 27	
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	GRI 27	●
<b>Aspect: Environmental Grievance Mechanisms</b>			
G4-DMA	Aspect Specific DMA	GRI 27	
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	GRI 27	●

SPECIFIC STANDARD DISCLOSURES		Reference	Omissions
CATEGORY: SOCIAL – Labour practices and Decent work DMA		GRI 8-11, 28	
<b>Aspect: Employment</b>			
G4-DMA	Aspect Specific DMA	GRI 30	
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and country	GRI 30	
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	GRI 30	
<b>Aspect: Labour/Management Relations</b>			
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	GRI 31	
MM4	Strikes and lock-outs exceeding one week	GRI 32	
<b>Aspect: Occupational Health And Safety</b>			
G4-DMA	Aspect Specific DMA	GRI 32	
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programmes	GRI 32	
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	GRI 33	
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	GRI 33	
G4-LA8	Health and safety topics covered in formal agreements with trade unions	GRI 34	
<b>Aspect: Training and Education</b>			
G4-LA9	Average hours of training per year per employee by gender, and by employee category	GRI 34	
G4-LA10	Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	GRI 34	
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	GRI 35	
<b>Aspect: Diversity and Equal Opportunity</b>			
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	GRI 35	
<b>Aspect: Supplier Assessment for Labour Practices</b>			
G4-DMA	Aspect Specific DMA	GRI 36	
G4-LA14	Percentage of new suppliers that were screened using labour practices criteria	GRI 36	●
<b>Aspect: Labour Practices Grievance Mechanisms</b>			
G4-DMA	Aspect Specific DMA	GRI 36	
G4-LA16	Number of grievances about labour practices filed, addressed, and resolved through formal grievance mechanisms	GRI 36	
CATEGORY: SOCIAL – Human rights DMA		GRI 8-11, 37	
<b>Aspect: Non-discrimination</b>			
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<b>Aspect: Indigenous Rights</b>			
MM5	Operation in or adjacent to indigenous peoples' territories	GRI 37	
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<b>Aspect: Supplier Human Rights Assessment</b>			
G4-DMA	Aspect Specific DMA	GRI 38	
G4-HR10	Percentage of new suppliers that were screened using human rights criteria	GRI 38	●
<b>Aspect: Human Rights Grievance Mechanisms</b>			
G4-DMA	Aspect Specific DMA	GRI 38	
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	GRI 38	

SPECIFIC STANDARD DISCLOSURES		Reference	Omissions
CATEGORY: SOCIAL – Society		DMA	GRI 8-11, 39
<b>Aspect: Local Communities</b>			
G4-DMA	Aspect Specific DMA		GRI 39
G4-S01	Local community engagement		GRI 39
MM6	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples		GRI 39
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 39
<b>Aspect: Resettlement</b>			
MM9	Sites where resettlements took place		GRI 40
<b>Aspect: Closure Planning</b>			
MM10	Number and percentage of operations with closure plans		GRI 40
<b>Aspect: Emergency Preparedness</b>			
MM-DMA	Aspect Specific DMA		GRI 40
<b>Aspect: Anti-Corruption</b>			
G4-DMA	Aspect Specific DMA		GRI 40
G4-S04	Communication and training on anti-corruption policies and procedures		GRI 40
G4-S05	Confirmed incidents of corruption and actions taken		GRI 41
<b>Aspect: Anti-Competitive Behaviour</b>			
G4-S07	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes		GRI 41
<b>Aspect: Compliance</b>			
G4-S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations		GRI 41
CATEGORY: SOCIAL – Product responsibility		DMA	GRI 8-11, 42
<b>Aspect: Product and Service Labelling</b>			
G4-DMA	Aspect Specific DMA		GRI 42
G4-PR3	Type of product and service information required by the organisation's procedures for product and service information and labelling, and percentage of significant product and service categories subject to such information requirements		GRI 42
G4-PR5	Results of surveys measuring customer satisfaction		GRI 42
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MM11	Programmes and progress relating to materials stewardship		GRI 43

# General Disclosures and Management Approach

Boliden Group's sustainability reporting is prepared in accordance with the G4 Sustainability Reporting Guidelines, including the Mining & Metals Sector Supplement. We currently report in accordance with 'Core' application level, which represents a balanced and reasonable presentation of our organisation's economic, environmental, and social performance. The 2016 reporting is composed of two units: one that is integrated into the 2016 Annual Report and which discloses how Boliden works and performs in relation to a set of prioritised sustainability issues, and one that reports our impact and results in accordance with the GRI reporting framework. The sustainability information for 2016 has been subjected to a limited review by Deloitte AB; see the limited assurance statement on page 104 of the Annual Report.

## G4-13/18/23 Boundaries and Limitations of the Report

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). The Kevitsa mine, located in Finland, which Boliden acquired in June 2016, is with minor exceptions, integrated in the GRI reporting. The Noralf aluminium fluoride operation at Odda was divested during the fourth quarter of 2016 and has been excluded from GRI reporting from that time. With the exception of what is described above, there have been no significant changes in the mining and smelting operations, in the supply chain, or in the capital structure and capital formation.

## Accounting Principles

The financial data is drawn from Boliden's audited annual accounts. The Boliden Group reports in Swedish kronor (SEK). Each operation has an environmental reporting manual that defines and describes measurement and calculation methods in line with Group directives. Environmental data, including energy-related data, is collected on a monthly, quarterly or annual basis and consolidated at Group level. Calculation methods for direct CO<sub>2</sub> 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.

## Management Approach

Sustainability 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 greater 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 minimise the risks associated with mining and metal 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 we continually enhance our efforts to protect and respect its principles and promote its spirit. The identification and prioritising of the Group's sustainability efforts are based on the overall strategy and vision, the impact of the operations and the company's goal of being the first sustainable link in the metals' value chain and achieving operational efficiency. Boliden prioritises sustainability issues that:

- Directly impact Boliden's success
- Directly impact Boliden's stakeholders
- Are fundamental to Boliden's ability to operate
- Boliden is able to control

This approach enables Boliden to set relevant goals, to track and improve performance. Boliden has identified the following sustainability priorities:

- Creating a safe workplace
- Achieving diversity and a more even gender distribution
- Securing tomorrow's skill pool
- Minimising the negative impact on soil, air and water
- Using resources efficiently
- Responsible reclamation and nature protection

## Sustainability Targets 2014 – 2018

Identifying and prioritising 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. Boliden's approach has been



to define five-year target periods that provide a direction over a period of time. Performance disclosure information and comments are presented in the Economic, Environmental and Social chapters of the GRI report, as well as in the Annual Report.

As a complement to these numerical targets, Boliden also works with several internal goals related to the development of new or improved routines for a safer work environment, and with methods of prioritising environmental initiatives and securing a competent workforce for the future.

### 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 environment and occupational health and safety management systems certified (not yet at Kevitsa) in accordance with ISO 14001 and OHSAS 18001 respectively. The Group's smelters are also certified in accordance with the ISO 9001 quality management system. An updated energy management system, in accordance with ISO 50001, is being implemented and has replaced the former systems based on EN 16001. 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 be upheld.

### Boliden's Corporate Responsibility Business Guidelines

The Corporate Responsibility Business Guidelines are Boliden's overarching guidelines regarding responsible business. They cover not only the entire Group's in-house operations but those of business partners with whom Boliden enters into an agreement. They are publicly available on Boliden's corporate website.

The Guidelines have been developed from the principles laid down in the UN Global Compact, and issued by the ILO, 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.

#### The Guidelines address;

##### *Human Rights and Labour Standards:*

- The effective abolition of child labour, harmful child labour, the right of children to not have their physical or mental health and development endangered (within or outside a working area) and the transition of any child found to be performing harmful child labour to enable her or him to attend and remain in quality education until no longer a child
- Upholding the elimination of all forms of forced or compulsory labour
- Non-discriminatory practices
- Protecting and respecting freedom of association and collective bargaining
- Living wages
- Working hours
- Safe work environment
- Compliance with national legislation and Respect for international conventions and guidelines

#### *The Environment:*

- A precautionary approach to environmental challenges
- Environmental risk assessments and systematic management
- Promotion of environmental responsibility
- Best available technology and knowledge sharing
- Compliance with national legislation and respect for international conventions and guidelines

#### *Anti-Corruption:*

- Zero tolerance of bribery or any form of corruption
- Zero acceptance of direct or indirect involvement in prohibited benefits
- Legal compliance on taxation, fees and royalties and transparency in disclosure of the same
- Reference to Boliden's Anti-corruption policy and the Extractive Industry Transparency Initiative (EITI)

#### *Society and Human Rights:*

- Acting responsibly in relation to neighbouring societies
- Safeguarding the rights of the indigenous peoples
- Treating members of society with dignity and respect
- Preventing the forcible displacement of individuals, groups or communities
- Respect for international guidelines and standards if security services are used to protect operations

Boliden's capability to handle sanction control and to evaluate its business partners was enhanced during 2016 by clarifying internal routines and by improved system support, combined with the training of key personnel. All of Boliden's business partners have been checked through sanction control during the reporting year.

### Responsibility and Monitoring of Progress

Boliden's Group management has the ultimate responsibility for the Group's sustainability work. Prioritising 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 as well as the exchange of expertise and experience between the Business Areas and between production units. There are networks for health and safety, the environment, human resources, and communications. The managers of these 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 labour practices are reported on a quarterly basis. Boliden also presents sustainability performance in its quarterly interim reports.

#### **G4-56 Code of Conduct**

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 have a behaviour based on mutual respect. Boliden does not accept any form of harassment, discrimination or other behaviour 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 labour 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, in so doing, comply with relevant legislation, stock market contracts and other regulations.

Gifts or other favours to business associates shall comply with locally accepted good business practice. Gifts and other favours 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 disciplinary action, dismissal or even criminal prosecution. Should an improper practice or incident occur within Boliden, the company is committed to making the necessary corrections and will take remedial action to prevent recurrence.

#### **G4-24/25/26/27 Dialogue for Greater Understanding and Performance**

Boliden's operations affect many people in a variety of ways, and similarly, these stakeholders have different views and expectations of Boliden. If it is to carry out relevant sustainability work, Boliden must identify and address prioritised issues. By conducting stakeholder dialogues, Boliden meets demands for increased transparency and learns about stakeholders' demands and expectations in greater detail. In 2013-2014, Boliden mapped and prioritised stakeholders and advanced the level of systematics in the dialogue on material sustainability issues. The Boliden approach to stakeholders is based on a combination of theoretical models and evaluation of the mutual levels of cause, legitimacy and power between Boliden and the stakeholder group.

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

- Employees and future employees
- Neighbours
- Investors
- Business partners
- Authorities

Boliden's framework of stakeholders that raise expectations, influence the perception of our company and are relevant with regard to sustainability performance is, however, wider than that defined by the above stakeholder groups. Dialogue is conducted in different ways with different groups, i.e. bi-annual employee surveys, open house meetings with employees and the neighbouring community, formal and informal meetings with authorities, and capital market days and AGMs.

In 2016, Boliden conducted stakeholder dialogues based on the new sustainability development goals formulated by the United Nations, which came into force at the beginning of the year. The responses 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) expect to a high degree that Boliden focuses on increased energy efficiency and reduced environmental impact. The stakeholder engagement during 2016 has been part of the Corporate Responsibility strategic process, and has not been undertaken specifically as part of the reporting preparation process.

#### **G4-16 Membership of Organisations**

Boliden participates in industry organisations that can play an important role in the sustainability dialogue on specific issues. These organisations include; the Association of Finnish Steel and Metal, the International Zinc Association (IZA), the International Copper Association (ICA), the European Copper Institute (ECI), the Scandinavian Copper Development Association, SveMin and Euromines.

#### **G4-19/20/21 Materiality Analysis**

This analysis describes and discloses Boliden's materiality aspects and its performance in relation to these aspects, which are considered to be material with reference to Boliden's ability to maintain sustainable and stable processes, to achieve its vision of being "a world-class metals company", and to fulfil the strategic direction and objectives. Boliden shall be among our industry's leading companies in terms of customer satisfaction, efficiency and responsibility. This entails an understanding, readiness and progressiveness with regard to aspects deemed to be material.

The net list of material aspects has been identified and prioritised in a process that involved external and internal stakeholders. The process is described below and is based on Boliden's past need to identify areas of sustainability priorities and goals to 2018, and on the Global Reporting Initiative's principles for determining the content of a sustainability report.

In 2013, an internal programme of work designed to renew Boliden's sustainability priorities and objectives for the period of 2014–2018 was carried out. That work included cross-disciplinary discussions, impact analysis, and importance in terms of Boliden's overall results. Multiple internal experts participated and the areas and objectives were anchored across the organisation and adopted by Group management and the Board of Directors.

In order to comply more closely with the demands put forth in the G4 Guidelines, Boliden regularly consult selected stakeholder groups on its sustainability performance from a broader perspective. These stakeholders were asked to comment on Boliden's strategic focus and to put forward potential additional key sustain-

ability issues, opportunities for improvement, and the strengths and weaknesses of existing work. The consultation provided ideas on possible improvements to both the sustainability work and its reporting. Examples include: enhanced local stakeholder dialogue, clearly defined responsibility in the value chain, and better embracing of the customer perspective in Boliden's sustainability priorities. Follow-up interviews and questionnaires conducted in 2015 and 2016 confirmed that safety and the environment are common priorities among stakeholder groups.

As of 2015 Boliden has laid out the structure and content of its GRI Report on the basis of these findings and of the GRI's principles concerning materiality and completeness. The report discloses:

- Subjects identified by stakeholders as priorities
- Subjects that are crucial in terms of Boliden's ability to achieve its vision, and fulfil its goals, and which are relevant to the prioritised areas and strategies
- Major events for Boliden's operations and value chain
- Performance

Boliden has, furthermore, determined boundaries for its materiality aspects. Boliden has a responsibility to promote and manage sustainability issues across the value chain. The self-acknowledged responsibility is reflected in the identification of the aspects that are material to Boliden. Part of fulfilling the GRI principle on Boundary entails determining the extent and boundaries of each aspect, based on its impact and priority. Boliden's considerations are disclosed by means of symbols shown in connection with each material aspect – see list below for details.

Boliden's material aspects are presented below. Two major categories have been defined: aspects that are at the core of sustainable and stable processes, with a direct impact on Boliden's overall results, and aspects that relate to the impact on external stakeholders, their perception of Boliden and our ability to grow the business (licence to operate). All together, these aspects impact Boliden's ability to become a world-class metals company and the first sustainable link in the metal's value chain.

Boliden will update the materiality analysis on a regular basis in response to changing business requirements, changing stakeholder expectations, implementation of the global goals for sustainable development, and technological and scientific progress etc.

## Material Aspects

### Economic

- ● Economic performance
- ● Market presence
- ● Indirect economic impact

### Environment

- ● Materials
- ● Energy
  - Water
  - Biodiversity
- ● Closure Planning (MM)
- ● Emissions
- ● Effluents & Waste
- ● Compliance
- ● Transport
- ● Environmental Grievance Mechanisms
  - Supplier Environmental Assessment

### Social – Labour Practise and Decent Work

- ● Employment
- ● Labour/Management Relations
  - ● Occupational Health & Safety
  - Training & Education
  - Diversity & Equal opportunity
  - Equal Remuneration for Women & Men
    - Supplier Assessment for Labour Practices
  - ● Labour Practices Grievance Mechanisms

### Social – Human Rights

- ● Non-discrimination
- ● Indigenous Rights
  - ● Assessment
    - Supplier Human Rights Assessment
- ● Human Rights Grievance Mechanisms

### Social – Society

- ● Local Communities
- ● Anti-Corruption
- ● Anti-Competitive Behaviour
- ● Compliance
- ● Resettlement (MM)

### Social – Product Responsibility

- ● Product & Service Labelling
- ● Materials Stewardship (MM)

● Impact within Boliden ● Impact outside Boliden

**G4-10 Boliden's Employees**

Unless stated otherwise, all information in this GRI report concerning the number of employees refers to data from an actual number of employees on 31 December for each year

(2014–2016), while in the Annual Report the corresponding figures are calculated and reported as Full Time Employees (FTE).

**Total number of employees by employment contract, gender and workforce type**

	2014			2015			2016		
	Number	% Female, %		Number	% Female, %		Number	% Female, %	
Permanent	4,780	94.6	17.1	4,916	95.6	17.4	5,458	95.4	17.0
Temporary	272	5.4	34.9	226	4.4	38.9	261	4.6	35.6
<b>Total in Group</b>	<b>5,052</b>	<b>100.0</b>	<b>18.1</b>	<b>5,142</b>	<b>100.0</b>	<b>18.4</b>	<b>5,719</b>	<b>100.0</b>	<b>17.8</b>
Supervised Workforce	281	5.6	14.9	232	4.5	11.6	155	2.7	11.6

**Total number of permanent employees by employment type and gender**

Employment type	2014			2015			2016		
	Number	% Female, %		Number	% Female, %		Number	% Female, %	
Full time	4,672	97.7	16.7	4,814	97.9	17.0	5,360	98.2	16.6
Part time	108	2.3	35.2	102	2.1	37.3	98	1.8	36.7
<b>Total in Group</b>	<b>4,780</b>	<b>100.0</b>	<b>17.1</b>	<b>4,916</b>	<b>100.0</b>	<b>17.4</b>	<b>5,458</b>	<b>100.0</b>	<b>17.0</b>

**Total number of employees by country and gender**

Region	2014			2015			2016		
	Number	% Female, %		Number	% Female, %		Number	% Female, %	
Sweden	3,045	60.3	21.6	3,145	61.2	21.7	3,218	56.3	21.8
Norway	314	6.2	15.0	321	6.2	14.6	308	5.4	15.6
Finland	1,069	21.2	16.0	1,070	20.8	16.6	1,588	27.8	14.5
Ireland	611	12.1	4.7	593	11.5	5.1	592	10.4	5.6
Other	13	0.3	46.2	13	0.3	46.2	13	0.2	46.2
<b>Total in Group</b>	<b>5,052</b>	<b>100.0</b>	<b>18.1</b>	<b>5,142</b>	<b>100.0</b>	<b>18.4</b>	<b>5,719</b>	<b>100.0</b>	<b>17.8</b>

**G4-11 Percentage of total employees covered by collective bargaining agreements**

The total number of employees at Boliden covered by collective bargaining agreements on 31 December, 2016 was 5,554 (4,998), representing 97.1 % (97.2%) of the total workforce.

# Economic Performance (EC)

The locations of Boliden's operations are determined by the localisation of mineral resources and the ability to explore and expand operations in connection with them. Good community relations and mutual understanding are a prerequisite for Boliden's business success and to enable the business to grow. Boliden also contributes to long-term economic growth by providing metals that are important for society's industrialisation and development.

## Financial targets

<b>RETURN ON INVESTMENTS</b>	The return on investments shall be a minimum of 10% (NPV)
<b>NET DEBT/EQUITY RATIO</b>	The net debt/equity ratio in an economic upturn shall be no higher than 20%
<b>DIVIDEND</b>	The dividend shall correspond to one third of the net profit

### Material Economic Aspects

The economic aspects identified as material to Boliden are economic performance, market presence and indirect economic impact. All of these aspects 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 taking these aspects into account and performing well in respect of them, Boliden maintains its licence to operate and the ability to develop the business.

Boliden's contribution to the community is multi-faceted 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 organisations; making investments that benefit the company and the community, etc. These are matters that support job creation and strengthen rural communities' contribution to national economic stability. Looking back, one of the Group's focus areas has been to generate a positive economic impact on the local community.

Several of Boliden's most important locations and locations where major investments have been made are 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 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 agreement that is used for new employees.

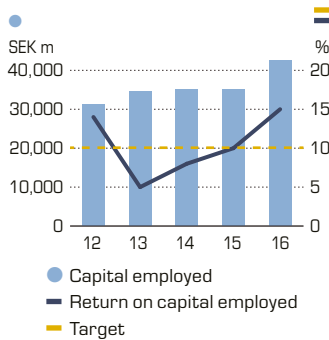
For white-collar employees hired directly out of universities, Boliden applies entry-level wages, depending on the level of education needed for different jobs.

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

Please see the following sections of this report and pp. 48-49 of the Annual Report to learn more, over and above the indicator reporting, about the ways in which Boliden manages, follows up on and monitors its performance in relation to these aspects.

## Financial Performance

### RETURN ON INVESTMENTS



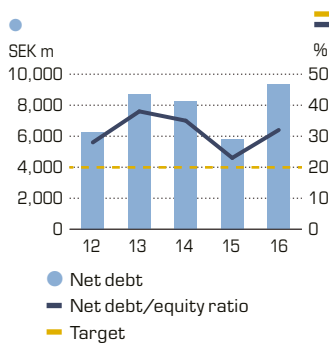
#### Results 2016

The return on capital employed totalled 15% (10). The average per annum return during the period from 2012 to 2016 has been 10%. Any investments made shall demonstrate a high return and shall be made in line with both Boliden's strategy and available resources. The projects' internal interest rates shall be higher than Boliden's weighted average cost of capital (WACC), adjusted for a risk premium.

#### Comments

The WACC before tax is currently nominally set at 12%, which corresponds to 10% in real terms. Calculations for major and long-term projects are normally conducted in real terms. They are based on forecast interest rates, metal prices, exchange rates, inflation and other relevant assumptions drawn from internal analyses and external assessments.

### NET DEBT/EQUITY RATIO



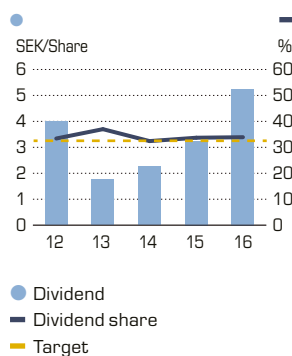
#### Results 2016

The net debt/equity ratio at the end of 2016 was 32% (23). The increase from 2015 is due to the acquisition of Kevitsa.

#### Comments

The net debt/equity ratio in an economic upturn shall be no higher than 20 per cent. The aim is to maintain a reasonable financial ability to act in a recession.

### DIVIDEND



#### Results 2016

The proposed dividend is SEK 5.25 per share (3.25), corresponding to 33.9% (33.7) of the net profit for the year. The dividend share during the period from 2012 to 2016 was 33.8% of the aggregate net profit for the period.

#### Comments

Boliden's dividend policy states that the dividend shall correspond to approximately one third of the net profit.

## Material Aspect: Economic Performance

### EC1 Direct economic value generated and distributed

Net sales in 2016 totalled SEK 40,316 million (40,242). Boliden has developed the description of the company's value creation and has therefore redefined some of the economic indicators com-

pared to 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.

Component, SEK m	Stakeholder group	2014	2015	2016	Comment
<b>Direct economic value generated</b>					
a) Revenues	From customers	36,891	40,242	40,316	Net sales plus revenues from financial investments and sales of assets.
<b>Economic value distributed</b>					
b) Purchasing	To suppliers	-31,552	-33,304	-30,340	Payments for materials, energy, machines, other components and services purchased.
c) Employee wages and benefits	To employees	-3,442	-3,480	-3,925	Total payroll and benefits incl. employee taxes and funds on behalf of employees.
d) Payments to providers of capital	To shareholders, banks and institutions	-906	-1,127	-1,747	Dividends to shareholders and interest paid to providers of loans.
e) Payment to government	To society	-572	-715	-1,135	Gross taxes.
<b>Economic value retained</b>					
f) Retained earnings	Shareholders	967	1,677	1,688	Reinvestments or reserves.

### EC2 Financial implications and other risks and opportunities due to climate change

Boliden is impacted by the effects of climate change, and the effects are both physical and financial. The stress that heavy rain puts on Boliden's water management systems is one example of a physical implication. Over the past years, heavy rains have led to capacity investments by Boliden 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 2013, the Group management formulated new targets for the stabilisation of Boliden's carbon dioxide emissions until 2018. This target, expressed as intensity (tonne CO<sub>2</sub>/tonne metal), is together with internal carbon budget pricing, a basis for evaluating investments and mitigation opportunities.

### EC3 Benefit plan coverage

#### Pension undertakings

Boliden Group companies have various pension schemes in accordance with local conditions and practices in the countries in which they operate. They are generally financed through payments to insurance companies or through own provisions. Boliden has defined benefit plans in Sweden, and Ireland and a very small number of such plans in Norway. The defined benefit plan provides the employee with a fixed amount of their final salary in conjunction with the retirement. The pension costs for the year comprise service costs, financing costs, special payroll taxes, administrative costs and settlements/reductions of pension plans. Revaluations of the defined benefit net pension liability are reported under Other comprehensive income.

Costs, undertakings and other factors in pension plans are calculated by means of the Projected Unit Credit Method. The Group's reported pension liability totals SEK 925 million (SEK 1,075 m) which sum includes endowment insurance totalling SEK 94 million (SEK 91 m) in respect of defined premium plans in Sweden.

Detailed information on provisions for pension and similar undertakings can be found in Note 23 of the Annual Report. Boliden is currently not able to report information in addition to that presented above.

Reason for omission: data is unavailable

### EC4 Financial assistance received from government

In 2016, government grants totalling SEK 35 million (30) were obtained and SEK 32 million (29) was recognized in the income statement. This mainly consisted of assistance received in Norway for carbon dioxide compensation and for energy efficiency measures.

## Material Aspect: Market Presence

### EC6 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).

Boliden acquired the Kevitsa mine in northern Finland in 2016. The local management team remained after Boliden's takeover.

### Proportion of senior management hired from the local community at significant locations of operation

Operation	2015		2016	
	Senior Managers on site	Hired from local community %	Senior Managers on site	Hired from local community %
Aitik	10	90	11	100
Boliden Area	10	100	7	100
Garpenberg	5	100	5	100
Tara	7	86	7	86
Kylylahti	8	75	8	88
Kevitsa	-	-	10	100
Rönnskär	7	86	7	86
Bergsöe	6	100	6	100
Odda	5	100	5	100
Kokkola	6	100	6	100
Harjavalta	6	100	6	100
<b>Total in Group</b>	<b>70</b>	<b>92.9</b>	<b>78</b>	<b>96.2</b>

## Material Aspect: Indirect Economic Impacts

### Aspect Specific DMA

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.

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.

### EC8 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 have not only 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.

In 2016, 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 pattern and publicly available statistics. The newly acquired Kevitsa operation has not been included in the assessment. The results show that Boliden's activities support the creation of 25,300 jobs, in Sweden (14,300), Finland (7,800), Norway (1,400), and Ireland (1,700). These are direct jobs (5,100), those indirectly supported through subcontractors and

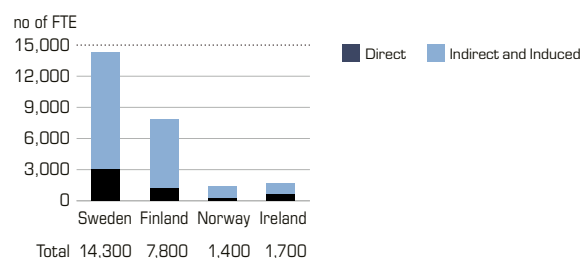
suppliers (8,900), or those supported through the induced effect of the employees' expenditure (11,400). The average amount of jobs created per Boliden employee is 4.0, and as a consequence, Boliden also contributes to the public finances both through direct taxes and through the taxes paid by suppliers and customers. In our most recent calculation, based on the preliminary 2016 financial results, Boliden's total contribution to public finances through taxes in Sweden, Finland, Norway and Ireland is estimated at SEK 11,500 million.

Compared to earlier assessments based on the 2014 results, job creation is slightly lower in Sweden and Ireland, but on a higher level in Norway. The variations can to some extent be explained by the ongoing investment programmes.

Boliden participates in the development of education for future engineers within the mining and metals industry.

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.

### JOBS CREATED PER COUNTRY





# Environmental Performance (EN)

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 most important areas for Boliden's licence to operate and our long-term competitiveness.

## Environmental Targets, 2014–2018

(Base year 2012)

<b>METAL DISCHARGES TO WATER</b>	Discharges of metals to water shall decrease by 25% from 2012 to 2018
<b>METAL EMISSIONS TO AIR</b>	Emissions of metals to air shall decrease by 10% from 2012 to 2018
<b>SULPHUR DIOXIDE EMISSIONS</b>	Emissions of sulphur dioxide to air shall be reduced by 10% from 2012 to 2018
<b>CARBON DIOXIDE EMISSIONS</b>	The carbon dioxide intensity shall not exceed 0.77 tonnes of carbon dioxide per tonne of metal produced by 2018
<b>ENVIRONMENTAL INCIDENTS</b>	Boliden's target is to have zero environmental incidents every month by 2018

### Material environmental aspects

Some of the environmental aspects, such as energy, water, emissions, effluents & waste, compliance and transport, are directly connected to how we run our operations and whether we maintain stable processes that comply with our permits. Several aspects are linked and impact on Boliden's overall performance and compliance. Other environmental aspects, such as materials, biodiversity, closure planning, grievance mechanisms and supplier assessments constitute material aspects as they impact external stakeholders, and determine Boliden's licence to operate and ability to develop the business. Also reclamation work is important and by 2018, Boliden aims to have completed the reclamation of at least five prioritised objects out of 20 identified.

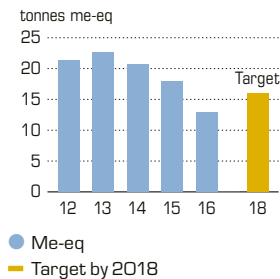
### Performance in relation to targets – 2016

The outcome in 2016 is positive in the sense that discharges of metals to water significantly decreased during the year. Metal to water and sulphur dioxide are declining and developing in the direction that Boliden has identified through its Group targets.

In 2016, 17 (14) environmental incidents occurred. According to Boliden's definition, these include permit violations and serious incidents, whether environmental damage occurred or not. Nine of the events dealt with discharges to water, either due to internal effluent treatment not working according to permit or unforeseen leaks due to weather conditions or from processes. Five incidents involved unauthorized air pollution. Two of the incidents were related to limits for internal waste streams, and therefore did not cause any direct influence outside the industrial area. None of these events are assessed to have been of a level of seriousness that caused lasting harm or significant environmental impact. One incident involved a violation of the Cultural Environment Act due to an ancient fireplace being damaged by a construction machine before it could be examined by archaeologists. Boliden was fined SEK 100,000 for the violation.

## Environmental Performance

### METAL DISCHARGES TO WATER



#### Results 2016

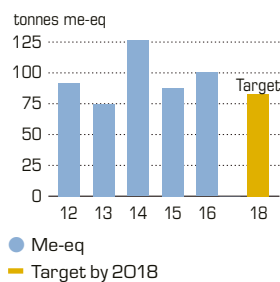
The environmental impact from discharges of metals to water (metal equivalents) has declined by 40% since the base year of 2012. The discharges of metals with high toxicity (mercury, cadmium and arsenic) decreased in 2016. Rönnskär's new water treatment plant enables reduced discharges of metals, e.g. zinc and lead.

#### Comments

Since 2015, Boliden has been reporting the impact of metal discharges as metal equivalents, a method, whereby the various elements are allocated a power factor, depending on how toxic they are to the aquatic environment. The method is based on copper equivalent toxicity (as if the toxicity were only caused by Cu). This method has been used retroactively in this report since 2012.

Boliden also reports water discharges in accordance with GRI, see indicator EN22.

### METAL EMISSIONS TO AIR



#### Results 2016

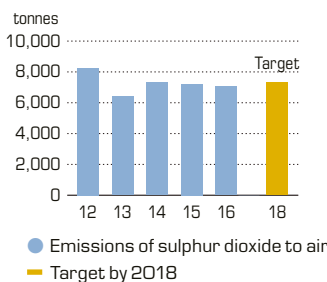
The environmental impact from emissions of metals (metal equivalents) to air has increased by 9% since the base year of 2012. Emissions of copper, mercury and cadmium have decreased, while emissions of lead increased during the year.

#### Comments

Since 2015, Boliden has been reporting the impact of metal emissions as metal equivalents, a method, whereby the various elements are allocated a power factor, depending on how toxic they are to humans exposed to them. The method is based on copper equivalent toxicity (as if the toxicity were only caused by Cu). This method has been used retroactively in this report since 2012.

Boliden also reports emissions in accordance with GRI, see indicator EN21.

### SULPHUR DIOXIDE EMISSIONS



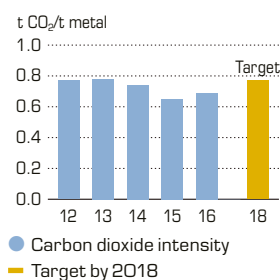
#### Results 2016

Emissions of sulphur dioxide to air have declined by 14% in comparison with the base year of 2012. The year on year decrease is mainly due to Boliden's investment in a new converter at the Kokkola smelter.

#### Comments

Sulphur dioxide is currently within the internal targets, but performance is uneven due to some installations approaching a point where re-investment is required. Boliden's investment in a new sulphuric acid plant in Harjavalta is expected to contribute to a further decline in sulphur dioxide emissions in the coming years. See indicator EN21 for more information.

### CARBON DIOXIDE EMISSIONS



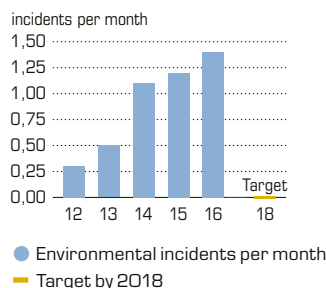
#### Results 2016

The carbon dioxide intensity has increased from 0.65 to 0.69 as a result of Kevitsa being integrated in the Boliden Group. The increase is due to production, including concentration, being more energy-intensive in an open pit mine and to indirect carbon dioxide emissions being higher for Finnish electricity production than for the average of Boliden's other units.

#### Comments

The relative emissions of carbon dioxide shall stabilize to the 2012 level (0.77 t CO<sub>2</sub>/t metal), regardless of increased production. To achieve this Boliden has to work with energy efficiency and technological development. See indicators EN3-6 and EN 15-19 to learn more about Boliden's work related to carbon dioxide.

### ENVIRONMENTAL INCIDENTS



#### Results 2016

The number of environmental incidents has increased to 1.4 (1.2) per month. 17 (14) environmental incidents occurred in 2016. Nine of the events involved discharges to water, five involved prohibited air pollution, and two involved waste handling. None of the above incidents are adjudged to have caused lasting damage or significant environmental impact. One incident involved a violation of the Cultural Environment Act and is described in EN-DMA and EN-29.

#### Comments

Boliden has changed the title of the key performance indicator in 2016, from environmental accidents to environmental incidents, because the majority of the incidents do not result in any significant environmental impact. Reducing the number of environmental incidents demands efficient systems at every stage of the value chain, but also requires a focused way of working with routines, risk assessments, action plans and advanced technology.

## Material Aspect: Materials

### EN1 Materials used by weight

Mined rock, milled ore, and concentrate production increased in 2016, while smelting materials are at a similar level as in previous years. Boliden has included tonnage of rock, ore and concentrates in the material used in its reporting. Waste rock and sand are then reported as output under EN23 Total Waste. 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	2014	2015	2016
Mined rock	85,357	75,317	100,765
Whereof milled ore	46,000	44,000	49,000
Whereof concentrate produced	961	1,043	1,249
Smelting materials	2,639	2,654	2,671
Other materials	625	670	786
Whereof non-renewables	135	133	150

### EN2 Percentage of materials that are recycled input materials

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 70,000 tonnes of lead acid batteries and 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. It is important, therefore, that electronic materials and scrap, such as telephone cables, copper roofs and copper pipes, from the demolition or construction of buildings and infrastructure is reutilised. The Rönnskär smelter produces 45% (50) of the gold, 25% (30) of the copper, 20% (30) of the silver, and 65% (70) 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	2014	2015	2016
Total secondary feed, tonnes	304,200	296,800	299,300
Total feed (primary and secondary), tonnes	2,639,000	2,654,000	2,671,000
Recycling rate	12%	11%	11%

## Material Aspect: Energy

### Aspect Specific DMA

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% (16%) 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. Boliden shall also reduce its dependence on fossil fuels by using renewable and/or recycled energy where possible. In previous years, energy efficiency measures have also been promoted on a broader scale through voluntary commitments within the framework of national programmes, e.g. through the Swedish Energy Agency programmes, the Finnish equivalent (MOTIVA), and collaborations

with Enova in Norway and SEAI in Ireland. The main aim of these programmes has been to increase the efficiency with which electricity is used. The changes in the total use of energy use and energy intensity in the reporting year are mainly related to the integration of the Kevitsa mine. This unit has been included June to December, and will be fully accounted for in the 2017 report.

### Energy Management Systems

Boliden's approach is to have energy management systems, in accordance with ISO 50001, at all significant operational locations. This also ensures the company's compliance with the rules and regulations imposed by the Energy Efficiency Directive 2012/27/EU.

**EN3 Energy consumption within the organization**

Energy consumption in 2016 totalled 19.1 (16.8) million gigajoules (GJ). Electricity accounts for 16.1 (14.6) million GJ of this consumption, which equates to 4.5 (4.1) 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.

Electricity is the dominant source of indirect energy in the Group. Out of 16,533,000 GJ of indirect energy used, 97% comprises electricity and only 3% is purchased heat. 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 up to now, been negligible in the larger context. A boiler based on biomass has been added during the reporting period. Bio-based fuels have also been used in road transports, to a limited extent.

Direct Energy consumption within the organisation (GJ)	2014	2015	2016
Coal & coke	1,961,000	1,757,000	1,743,000
Gas	402,000	395,000	446,000
Oil	1,057,000	1,187,000	1,794,000
Diesel & petrol	1,795,000	1,692,000	1,689,000 <sup>1)</sup>
Other	-	-	13,000
<b>Total renewable energy</b>	-	-	<b>29,000</b>
<b>Total non-renewable energy</b>	<b>5,216,000</b>	<b>5,031,000</b>	<b>5,686,000</b>
Electricity, purchased	14,473,000	14,635,000	16,080,000
Heat, purchased	420,000	381,000	453,000
<b>Gross energy input</b>	<b>20,109,000</b>	<b>20,047,000</b>	<b>22,218,000</b>
Produced energy, for internal use	2,052,000	2,117,000	2,205,000
Produced energy, sold	2,878,000	3,234,000	3,157,000
<b>Net energy used</b>	<b>17,231,000</b>	<b>16,813,000</b>	<b>19,061,000</b>

<sup>1)</sup> Whereof 16,000 GJ diesel from renewable sources

**EN5 Energy intensity**

Boliden's energy intensity was 13.17 (12.22) 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 (same as in EN3) for all Boliden sites divided by the production output in metal tonnes from Boliden production sites. This indicator is affected both by process efficiency and the product mix and raw material properties. The intensity increase in the reporting year is due to a new business unit (Kevitsa) being added to the Group.

**EN6 Reduction of energy consumption**

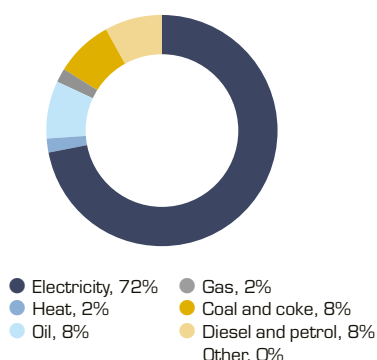
Boliden has implemented routines for purchasing high-consumption electrical equipment and procedures for the evaluation of life-cycle costs in construction and renovation as important parts of its ISO certified energy management systems. Because of the different character of mining and smelting operations, Boliden has chosen to work with local energy targets instead of Group targets.

In its mining operations, Boliden has put a lot of effort into reducing the energy used for ventilation (electric energy) and heating (oil or propane) of its underground mines. In a "Ventilation on Demand" project at the Kankberg mine in the Boliden area, commissioned in 2016, electrical consumption was reduced by 54% and the propane consumption by 21%. Ventilation on Demand means that the ventilation is real-time adjusted depending on where people and machines are working in the mine. Large energy reductions could be accomplished without impairing the working environment.

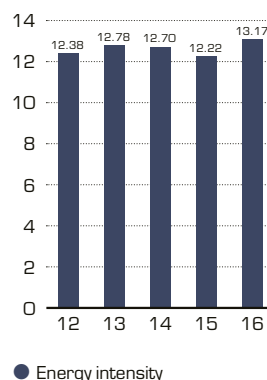
In its smelting operations, Boliden strives to take advantage of excess heat from the processes, transforming it either to electric power or supplying it for use in external district heating or steam deliveries. In 2016, 2,205,000 (2,117,000) GJ of heat was used internally, and 3,157,000 (3,234,000) GJ was delivered externally for use in district heating systems.

**ENERGY INPUT, 2016 PER SOURCE**

Energy accounts for approximately 14 per cent (16%) of the Group's operating cost.

**ENERGY INTENSITY**

GJ/t metal



## Material Aspect: Water

### EN8 Total water withdrawal

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 fresh water and the discharge of used water. 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	2014	2015	2016
Surface water (sea)	111	92	80
Surface water (inland)	43	39	40
Ground water	17	16	17
Collected rain water	1	1	1
Municipal water	2	2	2
<b>Total water withdrawal in million m<sup>3</sup></b>	<b>173</b>	<b>150</b>	<b>140</b>

### EN10 Water recycled and reused

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 organisations, 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	2014	2015	2016
Recycled volume in million m <sup>3</sup>	117	107	110
Percentage of water recycled	68%	72%	78%

## Material Aspect: Biodiversity

### Aspect Specific DMA

Access to large areas of land is essential to a 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.

The establishment of new mines and the expansion of existing businesses require land to be utilised. 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 utilising 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 prioritises 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's forests are FSC certified in order to promote responsible forestry, and 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, wetlands 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 prioritises 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.

### EN11 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, 2016, Boliden owned or controlled 22,600 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 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 utilising 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	7,056	Yes <sup>1) 2) 3)</sup>
Bergsöe	Smelter	Sweden	13	No
Boliden Area	Mine	Sweden	5,205	Yes <sup>2)</sup>
Garpenberg	Mine	Sweden	1,312	No
Harjavalta	Smelter	Finland	451	No
Kevitsa	Mine	Finland	1,420	Yes <sup>1) 2)</sup>
Kokkola	Smelter	Finland	340	No
Kylylahti	Mine	Finland	654	Yes <sup>1) 2)</sup>
Odda	Smelter	Norway	40	No
Rönnskär	Smelter	Sweden	153	No
Tara	Mine	Ireland	820	Yes <sup>2)</sup>
Old mining areas and forests	-	Sweden	5,115	Yes <sup>1) 2) 3)</sup>

<sup>1)</sup> in the area

<sup>2)</sup> adjacent to

<sup>3)</sup> containing portions of area

### EN13 Habitats protected and restored

Once reclamation work is completed, the measures must be inspected by the environmental authorities who will either approve them or propose additional measures. Where appropriate, reclamation is done in partnership with affected land owners or Sami villages. 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.

There are various different types of protected area 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 20 prioritised 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
Stekenjökk	Dam safety measures	-	2014	2017
Laver	Dam safety measures and reclamation work	12	2014	2016
Gillervattnet	Reclamation work	300	2014	2017
Näsliden	Reclamation work	5	2015	2017
Forests	Own deposition forest conservation	463	2016	2016

During the year, reclamation work has been ongoing i.e. in Laver and Gillervattnet. In Laver an old dam has been torn out and treatment of the exposed tailings has been ongoing since 2014. In the upper parts exposed tailings has been covered and sealed and below this area two walls have been raised to create elevated water tables. In the lower area the moraine has been supplemented with an alkali buffer to prevent the leakage of metals. Green areas have been established. The measures are showing good results with decreased metal leakage, as well as the elimination of dam safety hazards connected with the old dam. In Gillervattnet the covering of the old tailings dam is ongoing, and measures are being taken to increase the biodiversity in the area.

### MM1 Amount of land disturbed or rehabilitated

Mining companies can often own or hold licences 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 that have reached the end of their productive lifespan are part of Boliden's operations and responsibility. The reclamation programmes are designed to reduce the impact on surrounding areas of land and the local biological diversity. In 2016, approximately 95 (68) hectares were restored/ reclaimed, while 963 (48) hectares were utilised. A large portion of this increase (941 ha) consists of land that has been added in connection with the incorporation of the Kevitsa site. Boliden has made ongoing provisions of funds for future rehabilitation. At the end of 2016, a total of SEK 1,943 million (1,943 m) had been allocated for future reclamation of mining areas and smelters.

Land management (hectares)	2014	2015	2016
Total land holding	21,900	20,900	22,600
Disturbed and not yet rehabilitated (opening balance)	5,761	5,957	5,937
Disturbed in the reporting period	239	48	963
Rehabilitated in the reporting period	43	68	95
Disturbed and not yet rehabilitated (closing balance)	5,957	5,937	6,805

## Material Aspect: Emissions

### Aspect Specific DMA

Boliden is working with systematic reviews of the actual energy and CO<sub>2</sub> emission trends, to identify possible improvements and efficiency measures. The overall objectives are to stabilise CO<sub>2</sub> emissions and to identify sustainable solutions for reducing them. Boliden's work in this area focuses primarily on direct emissions.

The current stabilisation target has led to an increase in the focus on and following up of energy use and CO<sub>2</sub> emissions. The 2014-2015 investments in Garpenberg contributed to more efficient energy use, and hence decreases in CO<sub>2</sub> intensity. The 2016 acquisition of the open pit operation in Kevitsa has increased CO<sub>2</sub> intensity, but Boliden will still work towards achieving the set stabilisation target of 0.77 t CO<sub>2</sub>/t metal in 2018.

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 CO<sub>2</sub> emissions. All units are also obliged to work continuously on making improvements to process efficiency.

Local actions plans are also being drawn up with the aim of reducing diffuse emissions (ore dust or emissions from open converter plants that are spread on the wind). The aim is not only to reduce emissions, but also to improve both the monitoring and management thereof. Stricter legislation is anticipated in this area.

### EN15 Direct greenhouse gas emissions (Scope 1)

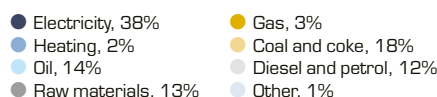
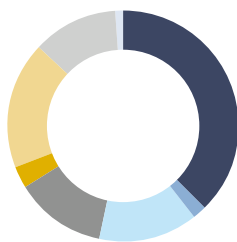
Boliden reports this indicator for the units over which it has operational control. The direct carbon dioxide emissions arise primarily from the use of carbonaceous reducing agents, from fuels in metal extraction processes, and from the use of fuels for mining operations and road transportation within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

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

*Note. Data in this GRI Report were compiled before the EU-mandated ETS reporting to the national authorities. The CO<sub>2</sub> 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 CO<sub>2</sub> data reported within ETS.*

### CARBON DIOXIDE EMISSIONS (SCOPE 1 + SCOPE 2), 2016 PER SOURCE

The total reported CO<sub>2</sub> emissions are 0.998 (0.889) Mtonnes for the year.



### EN16 Energy indirect greenhouse gas emissions (Scope 2)

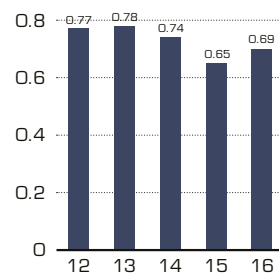
Boliden reports this indicator for the units over which it has operational control and includes only production-related indirect emissions. Commencing in 2015 Boliden has begun using location-based emission factors. This is an adaptation to the updated GHG Protocol Guidelines for Scope 2 reporting. The 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 2016 reporting, the following emission factors were applied: for the operations in Sweden 13 (12), Finland, 175 (135), Norway 8 (8) and Ireland 435 (457) g/kWh. The aggregated CO<sub>2</sub> intensity for Boliden reference year of 2012, however, is at a similar level as by the previous calculation method, and the Group CO<sub>2</sub> target has consequently been retained, also after the adjustment to the location-based emission factors.

Carbon dioxide emissions, Scope 1+2, tonnes	2014	2015	2016
Direct emissions, (EN15)	554,000	559,000	594,000
Indirect emissions, (EN16)	447,000	330,000	404,000
<b>Total (EN15 + EN16)</b>	<b>1,001,000</b>	<b>889,000</b>	<b>998,000</b>

### EN18 Greenhouse gas emission intensity

Boliden's GHG intensity was 0.69 (0.65) t/t metal, corresponding to a significant increase from the previous year. The GHG intensity is reported as the product emission intensity (metric tons of CO<sub>2</sub> emissions per unit produced). The same principles as those used for calculation of energy intensity (EN5) apply. Boliden only includes CO<sub>2</sub> gas in the GHG intensity.

### GREENHOUSE GAS EMISSION INTENSITY t CO<sub>2</sub>/t metal



● Greenhouse gas emission intensity

**EN19 Reduction of greenhouse gas emissions**

The GRI definitions state that this indicator should reflect reductions of CO<sub>2</sub> emissions identified under EN15-16. The reductions result is estimated from reported energy savings and energy efficiency initiatives reported in EN-5 and EN-7.

Boliden strives to deliver the excess heat from its processes for use in district heating, whenever possible. The heat supplied by Boliden Bergsöe, Boliden Rönnskär, Boliden Kokkola and Boliden Harjavalta in 2016 corresponds to 260,000 t/a of CO<sub>2</sub> (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.

**EN21 Other significant air emissions**

Other significant air emissions deriving from Boliden's operations are sulphur oxides, metals and dust. The most common of the sulphur oxides (SO<sub>x</sub>/SO<sub>2</sub>) is sulphur dioxide, and Boliden generally uses the expression 'sulphur dioxide' to describe this emission. The figures for sulphur dioxide presented in the table are divided into emissions from stacks and calculated emissions from fuel used in both stationary and mobile equipment and the use of explosives. The figures for metals and dust include the emissions from stacks but exclude diffuse emissions. Boliden measures or calculates NO<sub>x</sub> emissions at several units, but the methods to account NO<sub>x</sub> currently differs too much to allow the emissions to be aggregated at Group level.

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 Group level is conducted on a monthly basis.

Sulphur dioxide emissions to air are mainly attributable to gases generated during the smelting processes at the Harjavalta and Rönnskär copper smelters. The amount of sulphur dioxide emitted during the process depends on such factors as process stability and the efficiency of the gas cleaning systems, and, to some extent, on the amount of sulphur in the raw material. One way of reducing emissions is, therefore, to control the smelting process and to allow emission levels to be a factor when deciding which raw material to smelt. The monitoring and control of abatement systems for effective gas cleaning is important work and is carried out continuously.

The ongoing work focuses on process stability and improvement and/or replacement of technology. The emission of metals to air during the previous target period (2007–2013) decreased, mainly due to well-performing abatement systems and stable processes with few disruptions.

Emissions to air are mainly based on periodic monitoring in accordance with such standards as SS-EN 14385, or other applicable 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)	2014	2015	2016
SO <sub>2</sub>	7,320	7,210	7,060
SO <sub>2</sub> , indirect emissions from fuel	24	32	38
Particulate matter	75	66	110
Metal emissions to air (me-eq)	126	88	100
Metal emissions to air (mass)	22	18	22



## Material Aspect: Effluents and Waste

### EN22 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 72% of metal discharges to water while the mines account for the remaining 28%. Boliden mines account for 85% of the Group's nitrogen discharges with the nitrogen generated mainly from the use of explosives and their handling. The remaining 15% comes mainly from wastewater recycling at the Kokkola smelter.

Ensuring efficient and stable operations at water treatment plants and re-circulating 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.

The way in which Boliden manages nitrogen discharges to water will be particularly important in the years ahead. The ongoing expansion projects can result in marked increases in the mines' nitrogen discharges (by up to an estimated 45%) by 2018. A specific nitrogen action plan will be drawn up and the management and monitoring of water consumption will be improved through the establishment of a dedicated Water Management Plan that will apply to all units.

Once the water cleaning process is 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. No discharges are made into wetlands, ground water or municipal treatment plants. Volumes are based on flow meters.

Water discharge	2014	2015	2016
Metal discharges to water, t (me-eq)	21	18	13
Metal discharges to water, t (mass)	28	25	22
Nitrogen /N-tot/ to water (tonnes)	225	261	300
To wetland (million cubic metres)	-	-	0
To inland surface water (million cubic metres)	63	60	64
To sea surface water (million cubic metres)	71	64	62
To municipal treatment plants (million cubic metres)	0	0	30
Discharged water volume (million cubic metres)	134	124	126

### EN23 Total 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 out of

the material streams at mines and smelters. There are virtually no materials left that can be reused, composted, or incinerated. Boliden chooses, therefore, to report the waste types in a manner that differs from that indicated in the GRI guidelines. Hazardous waste is sent for disposal or stabilisation, in some cases to landfill and deep repository. The increasing amounts of waste rock in 2016 can be derived from the addition of the Kevitsa mine, a large-scale open pit operation, similar to the Aitik mine.

Waste by type and disposal method (tonnes)	2014	2015	2016
<b>Hazardous waste, total</b>	<b>791,000</b>	<b>825,000</b>	<b>826,000</b>
Whereof to external use, treatment, or recovery	4,700	4,900	5,800
Whereof to external disposal	20	0	220
<b>Non-hazardous waste, total</b>	<b>269,000</b>	<b>239,000</b>	<b>252,000</b>
Whereof to external use, treatment, or recovery	78,900	71,900	69,800
Whereof to external disposal	800	800	1,500
<b>Waste rock, total</b>	<b>39,724,000</b>	<b>31,781,000</b>	<b>52,036,000</b>
Waste rock for internal construction	3,181,000	3,372,000	5,417,000
Storage of waste rock for future use	30,203,000	13,845,000	11,134,000
Sold waste rock	108,000	125,000	404,000
<b>Tailings total</b>	<b>44,428,000</b>	<b>41,946,000</b>	<b>46,919,000</b>
Tailings for internal constitution	2,089,000	2,625,000	2,729,000

### MM 3 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 already 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 tips are covered continuously, wherever possible, in order to prevent weathering or leaching. Boliden's mine waste is generally 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 programmes are in place to ensure a high level of dam safety and several measures to increase dam safety have been finalised 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 are managed according to GruvRIDAS (mining industry guidelines for dam safety).

Correctly processed waste can be turned into valuable products. What is considered waste for one operation can often constitute a raw material for another. Approximately 45% of the process residues generated are sent to another Boliden site for metals recovery or final deposition. 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 to Boliden smelters, i.e. electronic scrap and waste batteries, contain plastics that are incinerated in the process. The incineration of the plastics has two purposes: it serves as a reducing agent in order to produce the metal and it also generates heat that is necessary for the process. The excess heat from the process is used for district heating.

Volumes are mainly based on loaded weight. 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, and what constitutes a insignificant

volume of waste is not defined. Metal-bearing sludge is not considered waste, but rather is reused in the process. 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.

Some waste is sent for final storage in underground facilities. Tailings are, for example, used as back-fill wherever this is possible, both as re-inforcement and to reduce the amount of tailings above ground. Odda stores jarosite and slag in mountain caverns. Rönnskär is in the process of completing underground disposal facilities for arsenic-bearing waste.

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 practise deep well injection or waste incineration.

#### EN24 Significant spills

A total of 28 (14) larger oil and/or diesel spills i.e. more than 150 litres, were reported from Aitik, Boliden Area, Garpenberg and Kevitsa. All spills occurred within the mining area. 27 spills were immediately sanitized and any contaminated soil was excavated. One hydraulic oil spill of 150 litres in Garpenberg occurred at 750 metres depth at a location where clean-up could not be carried out in a safe way. There are oil separators in the mine, and no oil has been detected in the water leaving the mine.

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.

## Material Aspect: Compliance

### EN29 Significant fines and sanctions

In January the Skåne County Administrative Board decided to ban Boliden Bergsöe to store and manage large amounts of lead containing residuals. The smelter reduced the storage of waste and the ban was lifted by a court decision.

Boliden has been hit by two corporate environmental fines in 2016. One fine was of SEK 100,000 due to a violation of the

Cultural Environment Act as a result of an ancient fireplace being damaged. Another fine of SEK 50,000 was charged due to a violation of permit as a result of a control plan not being submitted to the authority in time.

No cases have been brought via dispute resolution mechanisms during the reporting period.

## Material Aspect: Transport

### EN30 Significant environmental impact of transporting products and other goods and materials used in the organisation's own operations, and transporting members of the workforce

Transportation of material and goods plays a major part in reducing emissions to air from Boliden's operations. In 2016, the metal transport volumes were basically unchanged, while the volumes of concentrate increased by 10-15%. When determining the areas on which to focus in order to reduce the environmental impact from transportation, Boliden uses statistics from the existing con-

sumption of fuels, the tonnages transported, and the alternatives that are available when choosing routes and means of transport. Experts in planning and purchasing are constantly working to optimise our transportation, from both an environmental and an economic viewpoint.

Boliden utilises a comprehensive transportation system for transporting raw materials, products and by-products by ship, rail, or road, depending on the volume being transported and the distance involved. A large number of suppliers and subcontractors are part of Boliden's transportation system and it has proven dif-

difficult to compile a uniform report based on information provided by the respective carriers.

Currently, Boliden can only report on the environmental impact on road transports the company controls, i.e. shipments within or in connection to its own operation, and the logistics to/from ports and terminals which serve as delivery and pick-up points for Boliden.

The use of fuel for internal transportation within Boliden's operations was 40,000 (40,000) tonnes which has been accounted for in EN3 and EN15.

Tests with bio-fuels in lorries have been ongoing in connection with transports of ores and concentrates to/from the Boliden and Garpenberg mines. This has reduced the estimated CO<sub>2</sub>

emissions by about 2,500 tonnes. Only transports chartered by Boliden have been accounted for.

As a producer and importer of metal concentrates, Boliden has taken measures to comply with the new IMO MARPOL Annex V criteria for substances harmful to the marine environment. In practice, this means that a tank lorry receives the contaminated wash water from the ship and transports it to Boliden's internal landfills or water treatment plants.

A relatively small part of the environmental impact from transportation comes from business travel, but Boliden is increasing the use of video and web conferencing equipment and telephone conference calls to reduce its business travel. These measures have reduced the need for air travel.

## Material Aspect: Supplier Environmental Assessment

### Aspect Specific DMA

Environmental criteria are a vital part of Boliden's Corporate Business Principles, and therefore also a crucial part of the supplier assessment. Boliden expects business partners to identify and document their significant environmental aspects, and to be aware of and comply with environmental legislation and common practices.

### EN32 Percentage of new suppliers that were screened using environmental criteria

Boliden cannot currently disclose this information. New routines and a new system for supplier screening is being implemented, which means that the information will be presented from 2017 onwards.

Reason for omission: data is unavailable

## Material Aspect: Environmental Grievance Mechanism

### Aspect Specific DMA

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.

### EN34 Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms

Neighbours' and other stakeholders are welcome to contact either the business unit or any of the company function by a variety of channels, i.e. phone, e-mail, written correspondence.

Reports involved, amongst others, noise, vibrations, dust, and other types of disturbances on the surroundings. Complaints are handled in accordance with local procedures.

Number of grievances about environmental impact	2015	2016
Filed during the reporting period	49	95
Adressed during the reporting period	33	63
Resolved during the reporting period	38	60
Grievances filed prior to the reporting period that were resolved during the reporting period	0	0

# Social Performance

Boliden generates value by having top-quality operations, processes and products. Employees who are skilled, committed and who accept personal responsibility are crucial. Boliden must, in turn, offer its employees a safe and inspiring working environment. Material stewardship is also of growing importance, since effective use of resources in terms of the reuse and recycling of metals in society is vital for Boliden's business. By acting responsibly towards neighbours, business partners and other stakeholders, Boliden can maintain a good reputation as a metals company and employer.

## Boliden's social targets, 2016–2018

<b>ACCIDENTS</b>	Boliden's target is to have zero accidents resulting in absence from work every month by 2018
<b>SICK LEAVE</b>	The sick leave rate shall not exceed 3.0% by 2018
<b>GENDER EQUALITY</b>	Women shall comprise at least 20% of the workforce by 2018

## Labour Practices and Decent Work (LA)

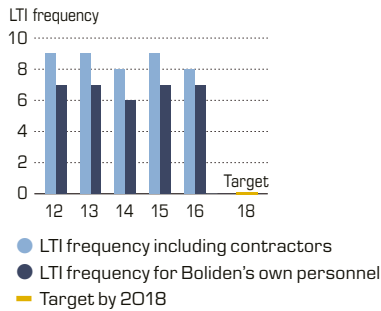
### Material aspects on LABOUR PRACTICES AND DECENT WORK

Occupational health & safety is Boliden's most important issue as it involves the safety and, ultimately, the life of Boliden's employees and contractors, and the materiality is obvious in a work environment with inherent risks. Employment, Labour/Management Relations, Training & Education, Diversity & Equal Opportunity and Equal Remuneration are material aspects 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 labour practices is material to Boliden's ambition to be the first sustainable link in the metal's value chain. In addition to indicator reporting, please see Annual Report pp. 41–43 to learn more about how Boliden manages, follows up and monitors performance within these aspects.

## Social performance

### ACCIDENTS



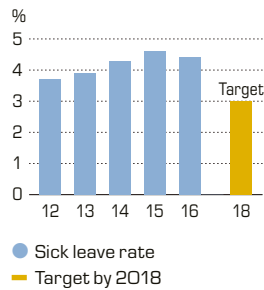
#### Results 2016

The number of accidents leading to absence from work (LTI) decreased in 2016 from 8.9 to 7.9 per million hours worked. The proactive safety work has intensified during the year. The LTI frequency has also decreased substantially amongst Boliden's contractors.

#### Comments

Boliden's target is to have zero accidents resulting in absence from work every month by 2018. In 2015 and 2016, Boliden developed proactive measures to improve the control of the business. Examples include the number of risk assessments, the number of security surveys, and participation in safety inspections by leaders. The aim for Boliden is to put preventive measures in place. See indicator LA6 for information of lost day rate and LTI per country.

### SICK LEAVE



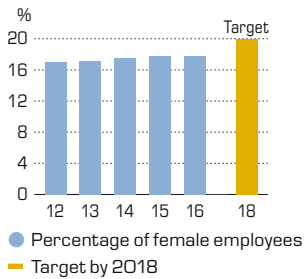
#### Results 2016

The sick leave rate decreased from 4.6% to 4.4% in 2016. The focus has been on increasing managers' involvement in the prevention and rehabilitation of ill health during the year.

#### Comments

Boliden's target is to reach 3.0% by the end of 2018. Boliden works actively with rehabilitation and alternative work in order to reduce both short- and long-term absence. See indicator LA6 for disclosure per country.

### GENDER EQUALITY



#### Results 2016

The number of female Boliden employees (FTE) was 976 (867), resulting in an unchanged share of 17.8% (17.8) of employees. Women accounted for 17% (22) of new recruits during the year.

#### Comments

When the goal of 20% women in Boliden by year 2018 was set, a calculation was made that every third (33%) of all new employees should be a woman. In the GRI report, when using the method of headcount by 31 December 2016, women accounted for 17.8% (18.4) of the total workforce.

## Material Aspect: Employment

### Aspect Specific DMA

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 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. The employees are the best ambassadors when it comes to attracting new employees to join the company. In the 2016 My Opinion employee survey, 72% (75) of the total number of respondents stated that they would recommend Boliden as an employer.

In 2016, the work continued with implementing activities based on the Boliden Group employer branding strategy which was introduced in 2015. The purpose with that strategy is to further enhancing Boliden's efforts to attract, retain and develop our employees.

### LA1 Total number and rates of new employee hires and employee turnover by age group, gender and region

Boliden aims to have a diverse workforce in all of its operations. Boliden has instituted a policy, with the aim of reaching its goal of female employees constituting 20% of the total workforce by 2018, stating that at least one third of all new employees should be female.

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

	2014		2015		2016	
	Number	%	Number	%	Number	%
<b>Group Total</b>	<b>242</b>	<b>5</b>	<b>281</b>	<b>6</b>	<b>515</b>	<b>9</b>
<30 years	84	35	115	41	202	39
30-50 years	135	56	146	52	237	46
>50 years	23	9	20	7	76	15
Men	172	71	219	78	429	83
Women	70	29	62	22	86	17
Sweden	188	78	241	86	270	52
Norway	17	7	9	3	24	5
Finland	36	14	31	11	213	41
Ireland	0	0	0	0	7	1
Other countries	1	0.4	0	0	1	0.2

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

	2014		2015		2016	
	Number	%	Number	%	Number	%
<b>Group Total</b>	<b>261</b>	<b>5</b>	<b>210</b>	<b>4</b>	<b>324</b>	<b>6</b>
<30 years	29	11	10	5	64	20
30-50 years	62	24	51	24	93	29
>50 years	169	65	149	71	167	52
Men	227	87	177	84	273	84
Women	33	13	33	16	51	16
Sweden	138	5	131	4	147	5
Norway	19	7	8	3	26	8
Finland	51	5	45	5	126	8
Ireland	53	9	26	5	24	4
Other countries	0	0	0	0	1	8

### LA2 Benefits provided to full-time employees by significant locations of operation

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

#### Profit sharing programme

The profit-sharing programme for all employees, was introduced in 2007. Small changes in the programme were made 2015, which means that, from now on, a profit share is payable when the return on capital employed reaches 8%(10). The maximum profit share of SEK 30,000/full-time employee (25,000) is payable when the return on capital employed reaches 18%(20). In 2016,

the return on capital employed was 15% (10) and the amount the programme will receive for 2016 is yet to be decided.

#### 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. Some examples of these differences are 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 we have our production facilities.

#### **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. The 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, maternity/paternity leave. All employees benefit from the various leisure and healthcare activities provided by the company.

#### **Ireland**

Boliden's employees in Ireland are paid salaries, 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 (subsidised or fully paid), access to company healthcare, disability cover (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 follow-

ing benefits: life assurance, travel insurance (official company journeys), health insurance (fully paid), disability cover, defined contribution of five or eight per cent 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 (max. NOK 30,000) 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 cover.

#### **Sweden**

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

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

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

In 2016, all white-collar employees in Sweden were offered counselling regarding their pensions and insurance policies. The offer includes a counselling session with an independent external insurance advisor at a cost of SEK 2,000 paid by the employee through a gross salary deduction. The counselling addresses the employee's individual needs, preferences and family situation. In addition, Boliden offers one free counselling session before retirement to all white-collar employees in Sweden.

## Material Aspect: Labour/Management Relations

### **LA4** Minimum notice periods regarding operational changes

Minimum notice periods, as required by labour legislation, are always adhered to by all of Boliden's operations. In general, notice periods for significant operational changes are as long as possible, and consultation with employees and relevant parties commence as soon as possible. National legislation and collective agreements set the framework and regulations for how information-sharing and negotiations are to be carried out in connection with operational and organisational changes.

A notice period can vary from weeks to months, depending on the project or proposals, and the urgency with which the required changes must be made. The trade union representatives are continuously updated about the development of the company's

operations and informed before any decisions about significant changes in its operations are made. Where significant changes in company operations are necessary, employees and/or their union representatives are involved in the process from an early stage. Below is a description of the minimum notice periods for operational changes or termination of employments in the countries where we have our production facilities.

#### **Finland**

National legislation mandates that negotiations with the unions take place before the termination of employees' contracts. The trade union representatives must also be given written information about the reasons for layoffs, the number of people that

might be affected, and to whom the collective agreement is applicable.

If more than ten employees are at risk of being laid off temporarily, the employment authorities must be informed. The minimum negotiation period is six weeks for permanent layoffs or temporary layoffs (more than 90 days). The minimum negotiation period is 14 days in cases of employees being laid off temporarily for not more than 90 days. Notice periods at an individual level are regulated in the collective agreements.

#### **Ireland**

Labour legislation states that minimum notice periods for ending employment depend on length of service, and/or shall be written into employment contracts. Minimum notice periods for other issues are not written into collective agreements, but are included in labour legislation.

#### **Norway**

The notice period is always related to employment status and ranges from 14 days for new employees on six months' probation to a notice period of six calendar months for permanent employees with a length of service in excess of ten years and aged 60+.

#### **Sweden**

National legislation mandates that the company and the unions must conduct negotiations before significant changes in the operations are decided upon and before employee layoffs can be performed. The trade unions must also be given written infor-

mation about the reasons for layoffs, the number of people that might be affected and which collective agreements are applicable. If more than five employees are at risk of being subject to layoffs, the regional employment office must be informed. When larger numbers of employees are involved in the potential layoffs, the notice timeframes range from two to six months.

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

During 2016 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 organisations 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 local level, employee representatives/union representatives sit on a number of different councils relating to employee management, production planning, 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 Aspect: Occupational Health and Safety

### **Aspect Specific DMA**

The number of lost time injuries has, in total, decreased compared to 2015. This is due to substantial improvements amongst Boliden's contractors. The corresponding number for Boliden's own personnel has changed for the worse. The general tendencies are good, but some units have a negative development. Leadership commitment and preventive risk management are key areas to improve the performance.

Since contractors are an important part of Boliden's total safety performance, and the LTI frequency still is comparably high, special attention has continued to be directed to this group. Boliden has declared that contracts will be terminated if suppliers do not meet the safety requirements.

The sick leave rate decreased in 2016. 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 that 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 programme 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.

### **LA5 Representation on health and safety committees**

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 programmes.

All units have procedures for risk assessments, 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.



### LA6 Injuries, occupational diseases, and work-related fatalities

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. 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.

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 behaviour. 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.

In 2016, 61 (54) 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 106 (106). The number of work days (number of calendar days prior to 2016) of absence due to accidents among Boliden's employees was 1,557 (1,187), an average of 34 (29) days per accident.

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 Frequency<sup>1)</sup> Boliden employees

	2014	2015	2016
Sweden	5.0	8.0	7.3
Norway	10.1	2.0	5.4
Finland	6.7	4.4	8.1
Ireland	6.3	5.7	1.9
<b>Group</b>	<b>5.8</b>	<b>6.6</b>	<b>6.7</b>

#### LTI Frequency<sup>1)</sup> Boliden contractors

	2014	2015	2016
Sweden	13.6	14.8	11.3
Norway	0.0	5.3	8.1
Finland	14.0	16.0	11.7
Ireland	6.4	11.3	0.0
<b>Group</b>	<b>12.6</b>	<b>14.4</b>	<b>10.3</b>

#### LTI Frequency<sup>1)</sup> employees and contractors

	2014	2015	2016
Sweden	7.8	10.1	8.5
Norway	8.2	2.9	6.3
Finland	9.0	8.6	9.5
Ireland	6.3	6.8	1.4
<b>Group</b>	<b>7.9</b>	<b>8.9</b>	<b>7.9</b>

#### Lost day rate<sup>2)</sup> Boliden employees

Lost days due to injury per 200,000 working hours

Calendar days	2014	2015	2016
Sweden	27	28	20
Norway	29	4	24
Finland	8	5	37
Ireland	128	84	105
<b>Group</b>	<b>37</b>	<b>29</b>	<b>34</b>

#### Sick leave rate<sup>3)</sup> Boliden employees

Percentage	2014	2015	2016
Sweden	4.2	4.4	4.5
Norway	4.5	6.8	4.7
Finland	4.8	4.4	4.5
Ireland	3.8	4.3	3.4
<b>Group</b>	<b>4.3</b>	<b>4.6</b>	<b>4.4</b>

<sup>1)</sup> 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) according to GRI, divide the LTI frequency stated above by five.

<sup>2)</sup> Reported as work days starting 2016. The number of days' absence for contractors is not reported as there is no data available in which lost days are related to work at Boliden's operating sites and/or on behalf of Boliden.

<sup>3)</sup> 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 registers accidents and LTI frequency for contractors working on-site, but currently lacks the ability to monitor the lost day rate and sick leave for contractors working for several clients (other than Boliden).

Work-related fatalities are very rare within Boliden. However in December 2016 a fatal accident occurred in connection with Boliden's operations. During a transportation of sulphuric acid between Harjavalta and Kokkola, a vehicle driving in the opposite direction crossed the median and drove into oncoming traffic, where it crashed into a truck contracted by Boliden.

#### Work-related fatalities employees and contractors

	2014	2015	2016
Employees	0	0	0
Contractors	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>

### LA7 Workers with high incidence or high risk of diseases related to their occupation

Some parts of Boliden's workplaces involve a risk of exposure to lead. Occupational exposure can cause lead poisoning, and long term exposure at lower concentrations can also cause damage to the human body. Chronic poisoning usually presents itself with different types of symptoms, such as anaemia, neurological and kidney

damage. Illness is preventable by avoiding exposure to lead.

Workplaces are regularly checked with regard to exposure, ergonomics, air quality, noise and vibrations as part of Boliden's occupational hygiene monitoring programmes. The results are analysed, actions taken when called for, and reported to the authorities.

Employees are screened regularly via the occupational health services provided at the workplace to ensure that each individual is fit to perform his or her assigned duties. Any sign of illness that could be associated with work is documented and reported.

#### **LA8 Health and safety topics covered in formal agreements with trade unions**

Formal agreements with trade unions cover health and safety aspects to some extent, one example being the Swedish SAM committee. Health and safety aspects are, however, mainly covered by national legislation.

Boliden provides free personal protection equipment at all sites and requires its use in accordance with the work procedures that were established, based on the risk assessments carried out before any work is commenced.

There are joint management/employee health and safety committees on each site, and it is mandatory for safety represent-

atives to participate in health and safety inspections, audits, and accident investigations.

All sites provide training in accordance with a training matrix that defines the mandatory training for each position. The training each person has received is documented in the HR system. The training records serve as a basis for promotion, further training and/or repetition.

Every employee not only has the right, but also the duty to stop any work that is considered to be unsafe. If a hazardous condition is discovered, every employee not only has the right, but the duty to report this via Boliden's deviation system. All near misses, incidents and accidents are reported via this system and followed up systematically. If a serious deviation occurs, all employees have access to a whistleblower function, where they can file an anonymous report.

Safety inspections are carried out according to schedule at each site. Furthermore, unannounced safety inspections are carried out in conjunction with maintenance work and projects, or for no particular reason at all. Managers, safety coordinators and safety representatives are amongst those who participate in the safety inspections. Group management take part in Group Safety Walks at least once a year, whereby all operational sites are visited and safety issues are discussed with workers on site.

## Material Aspect: Training and Education

#### **LA9 Average hours of training per employee by gender and by employee category**

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 job tasks in a safe and efficient way at all times. Boliden's approach is to facilitate skills development during regular working hours. The responsibility for the organisation of and following up on the "on the job" training lies with the line management. Boliden has not set 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. The average number of training hours for different employee categories on Group level was measured for the first time in 2014

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

Category	2014	2015	2016
Men	16.8	15.1	16.5
Women	16.2	16.3	15.5
White-collar	18.7	22.4	20.1
Blue-collar	15.7	11.8	14.4
<b>Total</b>	<b>16.7</b>	<b>15.3</b>	<b>16.3</b>

#### **LA10 Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings**

Boliden runs several training programmes. While the work with skills management is coordinated across the whole Group, much

of the responsibility is local, as each unit has knowledge of its own specific needs and circumstances.

All new employees receive introductory and orientation training in their new workplace, following a structured procedure and checklist that is signed off by the employee. All employees also receive the necessary training to enable them to perform their duties in a safe, efficient and competent manner. This applies to all blue-collar and white-collar employees, in all categories and at all levels in the organisation.

Training measures are usually conducted locally in order to optimise the way in which they are controlled and customised in line with the needs of the unit in question. The training activities include an on-going traditional leadership development programme for first-line managers, focusing on leadership and employee development. A number of statutory training measures are also provided, along with training in representing the employer on legal, labour law and human resources issues, and on ethical concerns.

Boliden provides opportunities for all employees to develop as individuals and professionals. All employees have an individual development plan, agreed upon together with their manager. It is also important that all employees get the opportunity to obtain an overview of the Group's operations and to understand how the value chain is formed. Training courses and study visits are, therefore, arranged within both our business areas.

Ongoing Group-wide programmes and initiatives include: The Boliden Academy, which offers – programmes for Young Professionals, Women at Work, High Potentials, Middle Management and the Top 100 Management Team. Management Reviews and Succession Planning processes – further enhance our skills management programmes.

Talent Forum sessions have been conducted in 2016. The Talent Forums were introduced in 2013 and are a new form of

systematic and structured review of all Top 100 Managers and those who report directly to them, and focus on their future career and competence development.

Internal applicants are given priority for vacant positions, provided that they have the necessary qualifications. The training programmes provided within Boliden therefore facilitate continued employability within Boliden making it possible for the employees to take on different roles and positions within the company. As stated in Boliden's redundancy policy, workforce reorganisation, downsizing and redundancies must be handled carefully and in the proper, ethical manner. Care and concern must be shown for individual employees and efforts must be made to provide effective assistance to those affected. The support provided to employees leaving the company depends therefore on their individual needs. Employees retiring from the company can obtain support with and advice regarding financial planning to make the transition to civilian life easier.

#### LA11 Percentage of employees receiving a regular performance appraisal and career development review, by gender and by employee category

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 are 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 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 2016, the system is used for performance reviews for all white-collar employees in the Boliden Group, a total of approximately 1,900 users. The system is not used for the Performance reviews carried out for blue-collar employees.

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

	2014	2015	2016
<b>Group Total</b>	<b>72</b>	<b>79</b>	<b>77</b>
Men	70	76	76
Women	83	92	83
Blue-collar	65	71	72
White-collar	86	96	76

#### New Identity an Access Management system

In 2016, a project started 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 organisational data are currently managed in four separate and national pay-roll systems. The work will commence in 2017 with the aim of fully implementing the new system. The benefits of an Identity and Access Management System should enable a common way of working with the maintenance of HR master data to ensure information availability and quality, as well as to simplify the administration of HR-related data.

## Material Aspect: Diversity and Equal Opportunity

### LA12 Composition of governance bodies

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

	2014			2015			2016		
	Board of Directors	Group Management	Supervisors	Board of Directors	Group Management	Supervisors	Board of Directors	Group Management	Supervisors
<b>Total number</b>	<b>11</b>	<b>5</b>	<b>500</b>	<b>11</b>	<b>5</b>	<b>491</b>	<b>11</b>	<b>5</b>	<b>503</b>
Women %	27	20	15	36	20	15	36	20	16
Men %	73	80	85	64	80	85	64	80	84
<30 years %	0	0	3	0	0	3	0	0	5
30-50 years %	9	40	55	9	40	55	9	40	58
>50 years %	91	60	42	91	60	42	91	60	37

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

Employees	2014	2015	2016
<b>Total number</b>	<b>5,052</b>	<b>5,142</b>	<b>5,719</b>
Blue-collar %	68	67	67
White-collar %	32	33	33
Women %	18	18	18
Men %	82	82	82
<30 years %	14	15	15
30–50 years %	50	49	51
>50 years %	36	36	34

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

## Material Aspect: Supplier Assessment for Labour Practices

### Aspect Specific DMA

Labour standards are a vital part of Boliden's Corporate Business Principles, and therefore also a crucial part of the supplier assessment. The business areas and group functions have different systems in place – based on different needs – to comply with the corporate requirement for supplier assessments.

### LA14 Percentage of new suppliers that were screened using labour practices criteria

Boliden cannot currently disclose this information. A new system for supplier screening is being implemented, which means that the information will be presented from 2017 onwards.

Reason for omission: Data is unavailable

## Material Aspect: Labour Practices Grievance Mechanisms

### Aspect Specific DMA

Effective grievance mechanisms play an important role in remediate impacts for labour practices. All Boliden employees can file grievances via Managers, HR functions or union representatives. Anonymous grievances can also be filed via Boliden's whistleblower function, 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 standardised procedures.

### LA16 Number of grievances about labour practices filed, addressed, and resolved through formal grievance mechanisms

Boliden's social responsibility includes ensuring safe and fair working conditions for our employees and at our business partners. Employees and other stakeholders are 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.

At year-end 2016, 24 formal grievances about Labour practice grievances related to Boliden employees were filed. 14 of them were reported via the whistleblower function. All 24 grievances were addressed and 6 cases were resolved during the reporting period.

## Human Rights (HR)

### Material aspects on HUMAN RIGHTS

Boliden's own operations are located in countries where the risks of human rights violations is generally low. There are, however, material aspects 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 material aspects, depending on the nature and geography of the supplier, include the Freedom of Association & Collective Bargaining, Child Labour, Forced and Compulsory Labour. All of these aspects are covered by Boliden's Supplier Human Rights Assessment. There is a Human Rights Grievance Mechanism that covers Boliden's own operations, as well as those of our suppliers. Please see the General Disclosure and Management Approach part of GRI, in addition to indicator reporting, to learn about how Boliden manages performance within these aspects.

### The London Bullion Market Association

Boliden is included on The London Bullion Market Association's (LBMA) list of recommended gold producers, the Good Delivery List, which requires the company to comply with a set of standards and to have this compliance certified by the LBMA. The standards are based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. This guidance aims "to help companies respect human rights and avoid contributing to conflict through their mineral sourcing practices. The Guidance is also intended to cultivate transparent mineral supply chains and sustainable corporate engagement in the mineral sector with a view to enabling countries to benefit from their mineral resources and preventing the extraction and trade of minerals from becoming a source of conflict, human rights abuses, and insecurity." Companies included on the list take it upon themselves to ensure that the raw material supply chain complies with a set of ethical criteria. No minerals shall be derived from raw materials that have financed terrorism, been subject to money laundering, or are complicit in any other violation of human rights.

## Material Aspect: Non-Discrimination

### HR3 Total number of incidents of discrimination and action 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 aspects 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 balance between working life and private life
- 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 web site).

No incidents of discrimination were reported to Boliden during 2016 through the formal grievance mechanisms or the whistleblower function.

## Material Aspect: Indigenous Rights

### MM5 Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities

Operations in northern Sweden and northern Finland (the Boliden Area, the Aitik mine, and the Kevitsa mine) are in the reindeer-herding areas.

Three of Boliden's eleven sites (27%) are affected. Consultation is ongoing with the affected Sami villages and agreements on compensation issues and cooperation are generally in place between Boliden and the Sami villages.

## Material Aspect: Assessment

### HR9 Total number and percentage of operations that have been subject to human rights reviews or impact assessments

During the last ten years, specific social impact assessments (including the human rights aspects) have been conducted on two occasions in the Boliden Area Operation, i.e. in one out of Boliden's eleven operations (9%). Furthermore, social impact is generally considered for all new projects and when Boliden applies for new or extended permits.

## Material Aspect: Supplier Human Rights Assessment

### Aspect Specific DMA

One way to develop and promote sustainability management within the metals and mining industry is through cooperation with business partners.

All of Boliden's new agreements with business partners include Boliden Corporate Responsibility Business Guidelines. These guidelines clearly stipulate that the business partner shall act in accordance with the 10 principles of the UN Global Compact. Boliden actively communicates the meaning of Boliden's Corporate Responsibility Business Guidelines to new and existing business partners.

Boliden has about 7,300 suppliers, 200 of these represent 80% of the expenditure. Boliden has conducted reviews of its business partners through the EBP (Evaluation of Business Partners) process since 2010. The EBP process evaluates business partners from a commercial and a sustainability perspective. The EBP work is based on the UN Global Compact and on the ILO and ISO standards in the areas relating to human rights, working and labour conditions, environmental responsibility and systematic environmental work, anti-corruption and, finally, the way in which a company's own sustainability work is followed up and evaluated.

The evaluation process starts with an online self-assessment that is subsequently followed up and evaluated. A dialogue is established with regard to the potential for improvement identified. In 2016 approximately 76 (115) business partners completed the self-assessment and 5 (3) audits were conducted. No termination of contracts due to human rights screening occurred in 2016. The self-assessments and the audits are based on the content of Boliden's Corporate Responsibility Business Guidelines.

The audits are followed up via reporting on the measures implemented. Working with improvements is a precondition for a continued partnership. The self-assessment forms and Boliden's CSR criteria are available on Boliden's website.

### HR10 Percentage of new suppliers that were screened using human rights criteria

The protection of human rights is a vital component of Boliden's Corporate Business Principles, and therefore also a crucial part of the supplier assessment. Boliden cannot currently disclose this information. New routines and systems for supplier screening are being implemented, which means that the information will be presented from 2017 onwards.

Reason for omission: data is unavailable

## Material Aspect: Human Rights Grievance Mechanism

### Aspect Specific DMA

Boliden has established a facility enabling complaints and expression of concerns related to the Code of Conduct to be reported anonymously. This "whistleblower" function can be accessed both from the internal and the public web pages.

### HR12 Number of grievances about human rights impacts filed, addressed, and resolved

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 2016. No grievances relating to human rights were reported via the whistleblower function.

## Society (SO)

### Material aspects on SOCIETY

The majority of aspects 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 first sustainable link in the metal's value chain. They may also have a significant impact

of the perceptions of Boliden and determine Boliden's licence to operate and ability to develop its business. These aspects are Local Communities, Anti-Corruption, Anti-Competitive Behaviour, Compliance and Resettlement. Industrial Operations change the landscape and Closure Planning is, therefore, an additional important factor for consideration during the licensing process.

## Material Aspect: Local Communities

### Aspect Specific DMA

Good community relations are as important for our business as the effective management of our operations. The operational sites host a range of regular and ongoing activities, such as "Open House" events, where the public is invited to visit the plant and to get information in an informal way, and "Public Consultations" (Samrådsmöten), where the public is invited to discuss special issues under more formal circumstances. There is always an open channel for individuals within the community to present concerns and complaints to the company. Specially assigned employees have a regular contact with neighbours and sometimes even visit people in their homes to discuss matters of concern.

#### SO1 Local community engagement

Boliden is a mature company and local community involvement activities exists in all main locations. Boliden's business operations are often of considerable importance in terms of employment, making Boliden an important local stakeholder. This means that community engagement is already implemented and that the need for further impact assessments is limited to the occasions where it is necessary to drastically change the scope or focus of Boliden's operations. 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 organisations 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 2016, Boliden's units sponsored local activities to the tune of approximately SEK 7 million (SEK 6 m).

Dialogue is ongoing with the numerous stakeholders impacted. It is primarily conducted through discussion and cooperation but also involves social impact assessments to meet some specific needs.

Measurements are carried out on a continual basis to monitor any impact on the local community in relation to the environment in the form, for example, of dust, noise, vibrations and

shockwaves from blasting. Methods have also been put in place for assessing impact, e.g. through changes to traffic, the landscape, water access and land access.

When analysing complaints about vibration from blasting, for example, the blasting schedule was changed so that most people would still be at work, rather than relaxing at home. This resulted in a significant decrease in the number of complaints.

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 neighbours, 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 would jeopardise any potential expansion.

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

An exploitation concession application for the development project in Laver (potential mine site in Northern Sweden) has been processed by the Mining Inspectorate of Sweden during the reporting period. In December 2016, The Chief Mining Inspector decided to reject Boliden's application for a mining concession for the deposit in Laver. The grounds for this decision are that a Natura 2000 permit for extracting the deposit has to be obtained before the concession can be granted. The Norrbotten County Council earlier (2015) rejected Boliden's application with reference to the area's environmental interest and its importance to the reindeer industry. Boliden is considering lodging an appeal regarding these decisions with the government.

The area around Laver is designated as an area of national interest for the Semisjaur-Njarg Sami village and an impact assessment of any mining operations in the area has, therefore, been conducted in cooperation with the relevant Sami village.

#### 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 has routines for informing and involving nearby and local residents. When the company applies for new exploration permissions or to expand the operation, there are mechanisms such as open house events and post-exploration forums that enable nearby and local residents and businesses to state their opinion. Some parts of these processes are required by law.

## Material Aspect: Resettlement

### MM9 Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process

There have been no resettlements of whole villages in Boliden's corporate history. The latest significant case of resettlement was when the Hötjärn tailings pond in the Boliden Area was being planned (finalised in year 2010). Dialogue was initiated with two permanent residents and two holiday cottage residents, and agree-

ment regarding compensation and practical solutions was reached.

As a rule, Boliden buys properties within the vicinity of the operations as they are put up for sale, and thus few residents are affected once the mine expands in that direction. In cases where a resident feels disturbed by a nearby operation, Boliden offers to buy the property and to compensate for any inconvenience. The aim is always to reach a solution that suits the individual's needs and makes the residents feel fully compensated.

## Material Aspect: Closure Planning

### MM10 Number and percentage of operations with closure plans

Boliden's operations involves land use for mining, industrial areas, and ponds for use as sand 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.

## Material Aspect: Emergency Preparedness

### Aspect Specific DMA

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 practiced

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 minimisation of damage to people, property and the environment.

## Material Aspect: Anti-Corruption

### Aspect Specific DMA

Boliden's 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.

The Code of Conduct applies to all employees throughout the Group, to the members of the Board of Directors of Boliden AB, and to its subsidiaries. Business ethics are covered in Boliden's Code of Conduct, but recent legislation has imposed new demands on Boliden and thereby generated a need to provide a more focused anti-corruption policy and guidelines. As a starting point, a group-wide risk survey was carried out in 2012 to identify any potential corruption-related risks. Functions with external contacts were prioritised. Based on the outcome of the survey, Boliden revised its anti-corruption policy and guidelines and the new version was adopted by the Board of Directors. The organisation's anti-corruption policy and guidelines, and the new competition law policy and guidelines, added 2015, form an inherent part of the Code but are included in separate documents.

### S04 Training in anti-corruption policies and procedures

Boliden's line managers are responsible for making the Code of Conduct and the Anti Corruption policy known, promoting and monitoring compliance within their respective organizations.

All managers and other employees, whose work involves extensive external contacts with business partners, in particular with suppliers or agents, are subject to anti-corruption training appropriate for their area of responsibility, starting with the Management Development Programme – a training programme for Boliden's top 130 managers.

All of our employees, together with agents, suppliers and other third parties acting on Boliden's behalf, must comply with the Group's Anti-Corruption Policy and Guidelines. These documents are available as part of Boliden's Management Manual on the intranet. All white-collar employees (1,588 employees in September 2013) were invited to a mandatory e-learning training session in September 2013 in order to increase their knowledge of our anti-corruption and anti-bribery work. The training was available in Swedish, Norwegian, Finnish and English, depend-



ing on where the participants were based. Boliden is in the process of developing, updating and renewing training sessions and completion of a new e-learning course to be launched in 2017, which will be mandatory for all white collar employees.

Boliden has a whistle-blower function which can be used to anonymously report suspected cases of criminal activities or other serious misconduct.

#### **S05 Incidents of corruption**

There are no confirmed incidents to report. During the latter part of 2016 an investigation into a whistle-blower case was initiated. The investigation is not finished at the time of reporting.

## Material Aspect: Anti-Competitive Behaviour

### **S07 Anti-Competitive behaviour and compliance**

Boliden's Code of Conduct clearly states that employees and Board members shall comply with applicable anti-trust and competition laws. They should refrain from sharing, discussing or disclosing competitive sensitive information when meeting other companies or organisations, and seek advice from the Corporate Legal Office in all matters involving risk of antitrust expose for Boliden and themselves. In 2015, Boliden adopted a new Competition Law policy and Guidelines applicable to all employees to further clarify the rules on anti-competitive behaviour.

E-learning training sessions on the subject have been launched for a selected group of employees in 2015, with follow-up training during the latter part of 2016, and further activities planned for 2017.

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 behaviour or compliance. There are no fines or non-monetary actions, related to anti-competitive behaviour, initiated or pending against Boliden.

## Material Aspect: Compliance

### **S08 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations**

No significant fines or non-monetary sanctions regarding social performance have come to Boliden's attention during 2016. Legislative compliance is important for Boliden since it ensures our business legitimacy.

For monetary value of significant fines for non compliance with environmental laws and regulations, see EN29.

## Product Responsibility (PR)

### Material aspects on PRODUCT RESPONSIBILITY

Product & Service labelling, Compliance and Materials Stewardship are the aspects deemed to be material with regard to product responsibility. They all concern the information that Boliden provides on the sustainability performance of the processes,

services and products that we supply – which Boliden regards as a significant competitive strength. Please see GRI General Disclosures, in addition to the indicator reporting, to learn more about how Boliden manages, follows up and monitors performance within these aspects.

## Material Aspect: Product and Service Labelling

### Aspect Specific DMA

Boliden shall be a world class metals company. This means that Boliden shall be among the leading companies in the industry in terms of customer satisfaction, efficiency and responsibility. Customer satisfaction is measured biannually by surveys among regular customers. Boliden also collects feedback from customers through planned visits and via daily contacts throughout the contract execution process. Complaints are reported and handled systematically across interfaces to smelter units. Customers are engaged in the development of new products and other technical solutions through Boliden's technical customer support service.

### PR3 Type of product and service information required by the organisation's procedures for product and service information and labelling, and percentage of significant product and service categories subject to such information requirements

Products put on the market by Boliden are labelled in accordance with relevant legislation concerning transportation, storage and use, and are accompanied by the necessary documentation. Written information is available in the form of Material Safety Data Sheets (MSDS). All significant products (100%) are subject to these product declarations, which are updated on a regular basis in line with legislation and new scientific findings. In addition to being distributed to customers, the MSDSs are also available at [www.boliden.com](http://www.boliden.com).

The EU chemical legislation (REACH) is implemented as part of the day-to-day operations at all Boliden's production sites.

Boliden's environmental performance and the way in which production affects the environment is, furthermore, described in a transparent and detailed manner using common assessment methods and benchmarks.

### The following product and service information is required by Boliden's procedures

Product information	YES	NO
Sourcing		X
Content	X	
Safe use of product	X	
Disposal of the product	X	
Other		

During the reporting period Boliden has continued the work required for inclusion in the LBMA list of recommended gold producers. Companies included on the list take it upon themselves to ensure that the raw material supply chain fulfils a set of ethical criteria. No minerals shall be derived from raw materials that have financed terrorism, been subject to money laundering or are complicit in any other violation of human rights. The compliance report is to be verified by a third party. Boliden employs the services of the accounting firm KPMG AB.

### PR5 Results of surveys measuring customer satisfaction

During the reporting year, Boliden conducted a customer survey to find out how Boliden fared within the four key areas of the customer experience. Boliden will continue to measure customer satisfaction and define actions at regular intervals, and will follow up them over time in order to secure performance and further develop capabilities with view to realising our vision of being a world-class metals partner.

The 2016 survey was sent out to 329 customers, covering all product segments and all geographical areas of Boliden's metals (Cu, Zn, Pb, Au, Ag) and sulphuric acid sales. Only customers that had been active during the last 12 month period were approached and the response rate was 39%. The survey investigated the following four key areas:

- offerings
- relations
- administration
- competition comparison

The results showed some improvement of performance in respect to quality, delivery service as well as personal contacts. Actions are set on the basis of the results and the work to improve further continues. This has been the scope for improvements during the reporting period.

## Material Aspect: Material Stewardship

### MM11 Programmes and progress relating to materials stewardship

Boliden extracts minerals and produces high-quality metals, which are mainly sold to industrial customers in Europe. Care and consideration for people, society and the environment is evident in all our activities – from exploration to customer deliveries.

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 sulphuric 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 majority of the iron sand has historically been sold in the surrounding region. Boliden experienced several setbacks in 2014–2015 when local authorities

opposed the further use of the sand, for environmental reasons. During 2016, Boliden intensified its efforts to provide information about the material properties, and to inform people about the importance of defining how to make use of the material to be able to operate in accordance with the ideas of the circular economy that exist in society.

Boliden has made significant investments in the recycling industry and is now among the largest electronic scrap recyclers in the world.

Boliden owns land and forests and practises responsible forestry, as defined by the Forest Stewardship Council (FSC), by promoting and protecting biodiversity and creating environmental and social values.

Boliden performs business partner (EBP) reviews based on a range of sustainability criteria, including their environmental impact management, such as discharges to water and emissions to air management. The contracts with suppliers include specifications of environmental aspects in their delivery, such as levels of substances and waste management methods.

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