



# Corporate Responsibility

REPORT 2016

Leading.

  
THE LINDE GROUP

## Input

## Our business

## Output & impact



### Employees

- 59,715 employees in over 100 countries
- EUR 3,724 million personnel expenses
- EUR 319 expenditure on training programmes per employee



### Finance

- EUR 15,480 million equity
- EUR 19,709 million non-current and current liabilities
- EUR 28,978 million market capitalisation



### Innovation

- EUR 121 million invested in research and development
- 345 employees working in research and development



### Natural resources

- Air is the most important natural resource
- 27.5 million MWh of electricity consumed
- 39.4 million MWh of natural gas consumed
- 54.8 million m³ of water consumed



### Society

- EUR 7.8 million funding for social projects and initiatives
- 750 Linde volunteers around the world
- 18,778 employees in Linde's Healthcare business



## THE LINDE GROUP



### Gases Division



### Engineering Division

- EUR 285 thousand revenue per employee
- EUR 3,185 million salaries paid
- EUR 248 million pension expenses
- 3.7 training days per employee

- EUR 16,948 million revenue
- EUR 4,098 million operating profit
- EUR 1,637 million operating free cash flow
- EUR 687 million dividend paid
- 9.4% return on capital employed (ROCE)
- EUR 446 million income taxes paid

- 360 new patents filed
- 50% of research and development projects with environmental benefit

- 23.2 million tonnes CO<sub>2</sub> emissions (scope 1 and 2)
- 63.6 thousand tonnes of waste of which one third is recycled
- 30 million tonnes of CO<sub>2</sub> avoided by customers, just by applying two of Linde's key products
- 850 million m³ of water brought up to drinking water quality in just six countries

- 200 charitable projects supported
- 1 million children, school pupils and students reached
- 1.8 million patients relying on Linde's respiratory care offerings

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This is the PDF version of the Corporate Responsibility Report 2016. The full report is available online.

<http://www.linde.com/cr-report2016>

# THE REPORT

## BUSINESS SUCCESS AND SUSTAINABILITY

GRI G4-1, G4-48

### Professor Belloni, how relevant is sustainability for Linde?

Sustainability is one of Linde's core principles. For us, environmental protection and social responsibility are inextricably linked with long-term business success. Sustainable management also helps us to open up new markets and to be an attractive employer and good neighbour at our business locations. We are fully committed to the principles set out in the UN Global Compact and in addition we ourselves have made a number of voluntary commitments.

### In this context, what were the most important topics for Linde in 2016?

Safety and environmental protection have always been particularly relevant to Linde. On the Executive Board, we adopted a new safety strategy in 2016 which is designed to reduce risks even further. In the area of transport safety, for example, we are again setting stricter standards and we now include incidents in the statistics which were previously deemed to be non-preventable. In order to reach our target of reducing the number of serious transport incidents by 20 percent by the end of 2020, we provide for instance driver education programmes for both Linde drivers and contractors' drivers and we are investing more in vehicle safety. In the area of environmental protection, our efforts to avoid CO<sub>2</sub> emissions make a contribution to the global climate protection agenda agreed at the end of 2015 at the UN Climate Conference in Paris. In the period from 2009 to the end of 2016, we were able to save 3.3 million tonnes of CO<sub>2</sub> as a result of technical improvements and more efficient production processes. By 2020, we aim to save a total of 6 million tonnes of CO<sub>2</sub>.

### Which Linde products have benefits for the environment and for society?

They cover a wide spectrum. In the chemical industry, for example, we help reduce emissions of nitrogen oxides through the use of oxygen. Overall in 2016, our customers were able to save significantly more CO<sub>2</sub> with our products than we emitted in the course of our business operations. More than half of our research and development projects in the reporting year also aimed to achieve a benefit for the environment. And in the social field, our Healthcare business is a good example. For around 1.8 million patients, being treated at home with our oxygen therapy and additional Linde



Professor Dr Aldo Belloni,  
Chief Executive Officer of Linde AG

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Homecare therapies means greater independence and a better quality of life. At the same time, the financial burden on the public healthcare system is reduced.

### Which sustainability projects is Linde working on at the moment?

Just to give one example: Linde is a pioneer in environmentally friendly hydrogen technologies. When hydrogen is used as a fuel, it doesn't release any CO<sub>2</sub> and it can play an important role in the transition to a more environmentally friendly – more sustainable – energy supply. We are working to exploit the full potential of this energy source. At the beginning of 2017, we joined forces with twelve global companies to form the Hydrogen Council to provide additional impetus in this area. We see an opportunity here to make an active contribution to global climate protection targets by working together with industry, political decision makers and our customers.

### Looking forward, where do you see the greatest opportunities for Linde in the area of sustainability?

First of all, we are doing everything we can to meet the targets we have set ourselves. We are planning, for example, to introduce new measures in 2017 to live our safety culture more consciously. Secondly, we are focusing measures in places where we have particularly good leverage to make a contribution to sustainable development. Here, we are also relying on our innovation strategy, with its focus on areas such as environment and resources or quality of life.

### MORE ABOUT

- [Strategy for sustainability](#)
- [Global Compact website](#)
- [Executive Board Linde AG](#)

# ABOUT THIS REPORT

GRI G4-17, G4-18, G4-19, G4-20, G4-21, G4-22, G4-23, G4-28, G4-29, G4-30

Reporting period	1 January to 31 December 2016
Reporting cycle	Annual
Publication	9 March 2017
Format	The report is available as an online publication. The contents of the report (either the whole report or individual sections or pages) can also be downloaded as PDF files.
Integrated reporting	<p>We publish material non-financial key performance indicators (KPIs) and qualitative information about sustainability in our Annual Report. The Corporate Responsibility Report supplements the disclosures in the Annual Report. More information about sustainable business practices can be found inter alia in the following publications and communication channels of the Group:</p> <ul style="list-style-type: none"> <li>— <a href="#">The Linde Group's website</a> contains information on the corporate responsibility focus areas.</li> <li>— The <a href="#">Clean Technology portal</a> provides an overview of products and technologies for environmental protection.</li> <li>— The websites of our Gases, Engineering and Gist Divisions provide information about sustainability specific to their own business operations.</li> <li>— Some Linde subsidiaries produce regional publications which address sustainability issues.</li> <li>— Product brochures also contain information about the environmental benefits of our technologies.</li> <li>— Our <a href="#">investor relations presentations</a> (which are open to the public) provide information about market opportunities for Linde arising from technologies relating to the energy and environmental sectors and from healthcare.</li> <li>— We use <a href="#">social media</a> to provide corporate responsibility updates.</li> </ul> <p>In this report, we include links to these sources where appropriate.</p>
Topics	<p>Our stakeholders, who include our employees, customers and shareholders, are an important resource in identifying key issues for Linde. We review the topics we address on a regular basis to ensure that we are meeting the needs of our stakeholders. Information about this <a href="#">materiality analysis</a> is made publicly available.</p> <p>The content of our report is also based on the requirements set out in the <a href="#">Global Reporting Initiative (GRI, G4)</a> and on <a href="#">external corporate responsibility ratings</a>.</p>
Scope of the report	<p>The report relates to all companies in The Linde Group over which Linde AG is able to exercise control (the power to govern the financial and operating policies of the entity) or joint control together with other parties.</p> <p>In the case of companies over which Linde AG can exercise joint control, the KPIs are recorded pro rata, with the exception of figures for workplace accidents, which are shown in full even for jointly controlled entities. In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.</p> <p>The financial data of the Group has been extracted from the 2016 Annual Report and has not been modified.</p>

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<b>Key performance indicators, data collection methods, bases of calculation</b>	Key performance indicators (KPIs) enable us to track our economic, ecological and social performance. We measure our progress and identify potential for improvement. We use global reporting systems to collect most of the data needed to generate KPIs for safety, health and environmental protection and for employees. Our financial KPIs are calculated and published in accordance with <a href="#">International Financial Reporting Standards (IFRS)</a> . In the various sections of this report, KPIs are disclosed over a four-year period. The table entitled <a href="#">Key figures</a> covers a five-year period.
<b>Independent assurance provided by a third party</b>	Material KPIs and selected non-material KPIs were reviewed by KPMG AG Wirtschaftsprüfungsgesellschaft (KPMG). Those KPIs which were within the scope of KPMG's engagement are identified as such in the tables presented in this report. The scope of the engagement and the conclusion reached by KPMG are disclosed in the <a href="#">independent assurance report</a> . The engagement was conducted in accordance with the International Standard on Assurance Engagements (ISAE) 3000 which covers assurance reports on sustainability reports and ISAE 3410 Assurance Engagements on Greenhouse Gas Statements.
<b>UN Global Compact and Global Reporting Initiative</b>	With this report, we comply with the <a href="#">GRI G4 Sustainability Reporting Guidelines</a> of the <a href="#">Global Reporting Initiative (GRI)</a> . We have chosen to comply with the more demanding of the two reporting options, the comprehensive option. The Corporate Responsibility Report also serves as a Communication on Progress (COP) report within the framework of our commitment to the <a href="#">United Nations Global Compact</a> . We report on how we implement the ten <a href="#">Global Compact principles</a> in our business. Content relevant to the Global Compact is indicated as such in the report by the Global Compact logo. A <a href="#">combined GRI and Global Compact Index</a> gives a summary and overview of all the focus areas. We are again reporting in accordance with the Advanced Level of the UN Global Compact. We also consider the <a href="#">Blueprint for Corporate Sustainability Leadership</a> , which is an action plan initiated by the Global Compact LEAD platform.
<b>Terminology used</b>	Specialist terminology and abbreviations are explained in the report's <a href="#">glossary</a> .
<b>Prior-year reports</b>	Since 2005, the Group has published reports covering issues such as the environment, employees, sustainability and corporate responsibility. All these reports can be accessed from the <a href="#">archive on the Group's website</a> .
<b>Contact</b>	Your views are important to us. Please <a href="#">e-mail</a> us any questions or suggestions you may have.

## MORE ABOUT

- Assurance report
- Key material topics
- Statements relating to the future
- GRI website
- Global Compact website

# ABOUT LINDE

GRI G4-3, G4-4, G4-6, G4-8, G4-9, G4-10, G4-13, G4-17

## The Linde Group

In the 2016 financial year, The Linde Group generated revenue of EUR 16.948 bn, making it one of the leading gases and engineering companies in the world, with 59,715 employees working in more than 100 countries worldwide. The strategy of The Linde Group is geared towards long-term profitable growth and focuses on the expansion of its international business with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment in every one of its business areas, regions and locations across the globe. The company is committed to technologies and products that unite the goals of customer value and sustainable development.

## Organisation

Our company comprises three divisions: Gases and Engineering (the two core divisions) and Other Activities (the logistics services company Gist). The largest division, Gases, has three segments: EMEA (Europe, Middle East and Africa), Asia/Pacific and the Americas. These segments are further subdivided into nine Regional Business Units (RBUs). In addition, Linde has established five Global Governance Centres (GGCs) for the Gases Division which are centrally managed and operate across the regions: GGC Merchant & Packaged Gases (liquefied gases and cylinder gas), GGC Electronics (electronic gases), GGC Healthcare, GGC Operations and GGC Deliver. The Group has also set up the Group-wide function Opportunity & Project Development in order to take better advantage of business opportunities.

### Gases Division

Linde is a world leader in the international gases market. Our company offers a wide range of compressed and liquefied gases as well as chemicals, and is the partner of choice across a huge variety of industries. Linde gases are used, for example, in the energy sector, steel production, chemical processing, environmental protection and welding, as well as in food processing, glass production and electronics. We are also investing in the expansion of our Healthcare business (medical gases and services), and we are a leading global player in the development of environmentally friendly hydrogen technologies.

### Engineering Division

Linde's Engineering Division is successful throughout the world, with its focus on promising market segments such as olefin, natural gas, air separation, hydrogen and synthesis gas plants. In contrast to virtually all competitors, we can rely on our own extensive process engineering know-how in the planning, project development and construction of turnkey industrial plants. Linde plants are used in a wide variety of fields: in the petrochemical and chemical industries, in refineries and fertiliser plants, to recover air gases, to produce hydrogen and synthesis gases, to treat natural gas and to produce noble gases.

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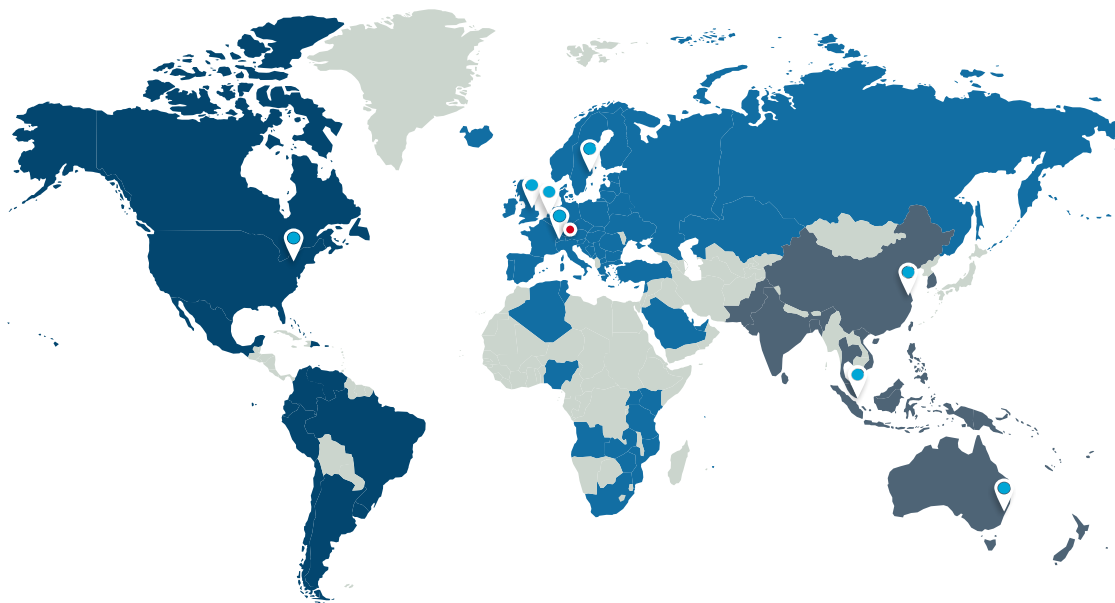
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## The Linde World



AMERICAS	EMEA	ASIA/PACIFIC
 Employees: <b>21,808</b>	 Employees: <b>24,774</b>	 Employees: <b>13,133</b>
 Revenue: <b>5,622 m</b>	 Revenue: <b>6,893 m</b>	 Revenue: <b>4,433 m</b>
 Headquarters: <b>1</b>	 Headquarters: <b>5</b>	 Headquarters: <b>3</b>

## Business Review

In the 2016 financial year, the revenue of The Linde Group from continuing operations came to EUR 16.948 bn (2015: EUR 17.345 bn). Group operating profit from continuing operations amounted to EUR 4.098 bn, on a par with the prior-year level of EUR 4.087 bn. In addition to the lower contribution to revenue made by the Engineering Division compared with the previous year, this development was driven, in particular, by exchange rate changes. After adjusting for these exchange rate effects, Group revenue was 0.2 percent higher than in 2015. Group operating profit increased by 2.7 percent after adjusting for exchange rate effects.

The Group operating margin came in at 24.2 percent, up by 60 basis points on the prior-year value (2015: 23.6 percent). The measures already taken to boost efficiency back in 2015 (Focus programme) also contributed to this improvement. In the three-year period from 2015 to 2017, this programme aims to reduce costs by up to EUR 180 m. We launched another Groupwide efficiency programme in 2016 (LIFT programme). This programme, which is also to run for a period of three years, is designed to generate further savings of around EUR 370 m a year. Total expenses of approximately EUR 400 m are likely to be incurred in the period leading up to the end of 2017 for the programmes. As of 2019, the two programmes combined are to result in savings of around EUR 550 m a year.

The information provided above relates exclusively to continuing operations. As the business of the logistics service provider Gist is to be sold in the coming year, it has been reported as a discontinued operation.

## Linde financial highlights<sup>1</sup>

		2016	2015	2014	2013
<b>Share</b>					
Closing price	€	156.10	133.90	154.20	152.05
Year high	€	163.55	193.85	157.30	153.90
Year low	€	115.85	128.05	139.15	128.60
Market capitalisation (at year-end closing price)	€ million	28,978	24,857	28,625	28,219
No. of shares (at 31 December)	000s	185,638	185,638	185,638	185,588
Cash dividend per share	€	3.70	3.45	3.15	3.00
<b>Group</b>					
Revenue	€ million	16,948	17,345	17,047	16,655
In Germany	%	7.2	7.5	7.4	7.9
Outside Germany	%	92.8	92.5	92.6	92.1
Operating profit <sup>2</sup>	€ million	4,098	4,087	3,920	3,966
Operating margin	%	24.2	23.6	23.0	23.8
EBIT	€ million	2,075	2,029	1,885	2,171
Profit for the year	€ million	1,206	1,133	1,162	1,430
Capital expenditure (excluding financial assets)	€ million	2,004	2,036	1,954	2,268
Equity ratio	%	44.0	43.7	41.4	41.5
Return on capital employed (ROCE)	%	9.4	9.5	9.5	9.7
Personnel expenses	€ bn	3.724	3.829	3.536	3.423
Personnel expenses (per employee)	1,000 €	62.4	64.1	53.9	53.9
Pension costs	€ million	248	278	293	281
Donations	€ million	2.7	2.4	2.8	2.7
<b>Gases Division</b>					
Revenue	€ million	14,892	15,168	13,982	13,971
Operating profit <sup>2</sup>	€ million	4,210	4,151	3,835	3,846
Operating margin	%	28.3	27.4	27.4	27.5
<b>Engineering Division</b>					
Revenue	€ million	2,351	2,594	3,074	2,879
Operating profit <sup>2</sup>	€ million	196	216	300	319
Operating margin	%	8.3	8.3	9.8	11.1

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> EBIT (before non-recurring items) adjusted for amortisation of intangible assets and depreciation of tangible assets.

## MORE ABOUT

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- Capital market
- Customer relations
- Innovation and products
- Group homepage
- Corporate history
- Gases Division
- Engineering Division
- Linde Healthcare
- Business review 2016  
(Financial Report p. 50 ff.)

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# GOVERNANCE

## SUSTAINABILITY STRATEGY

GRI G4-2, G4-14, G4-15, G4-31, G4-34, G4-35, G4-36, G4-37, G4-38, G4-42, G4-43, G4-45, G4-46, G4-47, G4-48, G4-50, G4-56, G4-57, G4-EN7, G4-EN27



1, 2, 3, 4, 5, 6, 7, 8, 9, 10



Sustainability is an important component of our Group strategy. We combine long-term business success with ecological and social responsibility. Therefore, we are constantly analysing the impact of our business operations on people and on the environment. Our innovations and products enable us to make a contribution towards sustainable development and support our customers' efforts, for example, to increase their energy efficiency or reduce their emissions. We underline our commitment to sustainable development by supporting the principles set out in the United Nations Global Compact. In 2016, we also reviewed our contribution to the targets relating to the UN's sustainable development goals which came into force during the year. The results were published on our [website](#).

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The sustainable development activities we pursue are based on established principles:

- **Materiality:** We concentrate on topics which are of great importance to our business success and to people and the environment.
- **Core business:** We incorporate aspects of sustainability into the key business processes of our Group. We consider the impact of our business activity throughout the life-cycle of our products.
- **Continuous improvement:** We continually analyse how sustainability enables us to exploit business opportunities and to minimise risks. We set ourselves quantitative and qualitative targets and use corporate responsibility indicators to measure our progress.
- **Transparency:** We report on a regular basis on our sustainability activities and engage with our stakeholders on this subject. We use the knowledge derived from this dialogue in our sustainability management.

## Values and principles

The values and principles of our Group are set out in the Linde Spirit and describe how we want to achieve our corporate goals.

### Our values:

- **Empowering people:** People are given the space to contribute and grow.
- **Innovating for customers:** We relentlessly pursue new ways to add value to external customers.
- **Thriving through diversity:** Diversity results in enriched collaboration and enhanced solutions.
- **Passion to excel:** We have the commitment and drive to pursue ever higher standards of excellence and we celebrate success.

### Our principles:

- **Safety:** The Linde Group will avoid harming people and society.
- **Integrity:** Our actions are honest, fair and ethical.
- **Sustainability:** We are focused on today's success, but accept our responsibility for future generations.
- **Respect:** Every human being deserves to be treated with respect.

## Global standards

Internal guidelines determine how we assume our obligations in the Group. Our Code of Ethics defines clear standards which govern the way our employees interact with each other as well as our conduct towards stakeholders such as customers, suppliers, the authorities and business partners. The Code of Ethics is binding for all employees in The Linde Group. Our Code of Ethics is supplemented by other global guidelines and standards which concern our commitment in core areas such as safety, environmental and health protection, product stewardship, supplier management and compliance. We base our standards on internationally recognised guidelines and principles. These include:

- the [German Corporate Governance Code](#),
- the [Universal Declaration of Human Rights](#),
- the [OECD Guidelines for Multinational Enterprises](#),
- the [ILO International Labour Standards](#),
- the [UN Guiding Principles for Business and Human Rights](#),
- the [ten principles of the UN Global Compact](#) and
- the [Responsible Care Global Charter](#).

### MORE ABOUT

- [CEO statement](#)
- [Engagement with stakeholders](#)
- [Key material topics](#)
- [Innovation and products](#)
- [The Linde Spirit](#)
- [Opportunities and risks](#)  
(Financial Report p. 82 ff.)

### DOWNLOADS

- ↓ [Code of Ethics](#)
- ↓ [Code of Conduct for Suppliers](#)
- ↓ [Health, Safety and Environment Policy](#)

# RESPONSIBILITY FOR SUSTAINABILITY

The Executive Board of Linde AG makes decisions about the key issues relating to sustainable development. In 2016, those decisions included setting a more specific transport safety target and adopting a new safety strategy. Experts from within the Group advise on key strategic elements of sustainability and prepare decision papers for the Executive Board.

Our departments and business units implement the guidelines and devise tailor-made measures for different sectors and regions. The Corporate Responsibility department coordinates the implementation of initiatives in consultation with the departments and those employees in the regions responsible for the topics. It is also the key point of contact for stakeholders on sustainability issues.

## MORE ABOUT

- CEO statement
- Executive Board Linde AG
- Management organisation  
(Financial Report p. 204 f.)

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# MATERIAL TOPICS

GRI G4-18, G4-19, G4-20, G4-21, G4-24, G4-25, G4-26, G4-27

We identify relevant sustainability topics using a materiality analysis. We conduct assessments to ascertain which topics are vital for our business success and to determine the areas in which Linde can make a particular contribution to sustainable development. One of the important aspects we consider are demands placed upon us by our stakeholders.

The topics we identify in this way enable us to decide on focus areas for our sustainability management and our reporting. This process also helps us identify important topics at an early stage. We review the results of this process on a regular basis to see if it is up to date and adjust accordingly if required.

We use numerous sources of information and dialogue formats to meet the diverse demands on our company from external stakeholders. These include surveys and dialogue with shareholders, customers and other business partners. In addition, we analyse enquiries from our stakeholders. In 2016, the Group's Corporate Responsibility department replied to more than 1,500 questions about sustainability at Linde. Other sources are legislative initiatives and political decisions.

Within Linde, we evaluate information from employee questionnaires, workshops with subject specialists and strategy experts, and interdisciplinary working parties. In 2016, for example, we conducted another survey about sustainability topics in all regions. Among other things, this covered local activities and areas of focus, collaborations with stakeholders and social projects at our locations. The results of this survey are included in our reporting. In addition, we consider findings derived from our Group risk management about environmental and social risks as well as procurement analyses and market analyses.

When we prioritise topics, we are also guided by internationally recognised standards. These include the principles set out in the UN Global Compact and sustainability ratings.

We also analyse the stage of the value chain at which topics have particular relevance.

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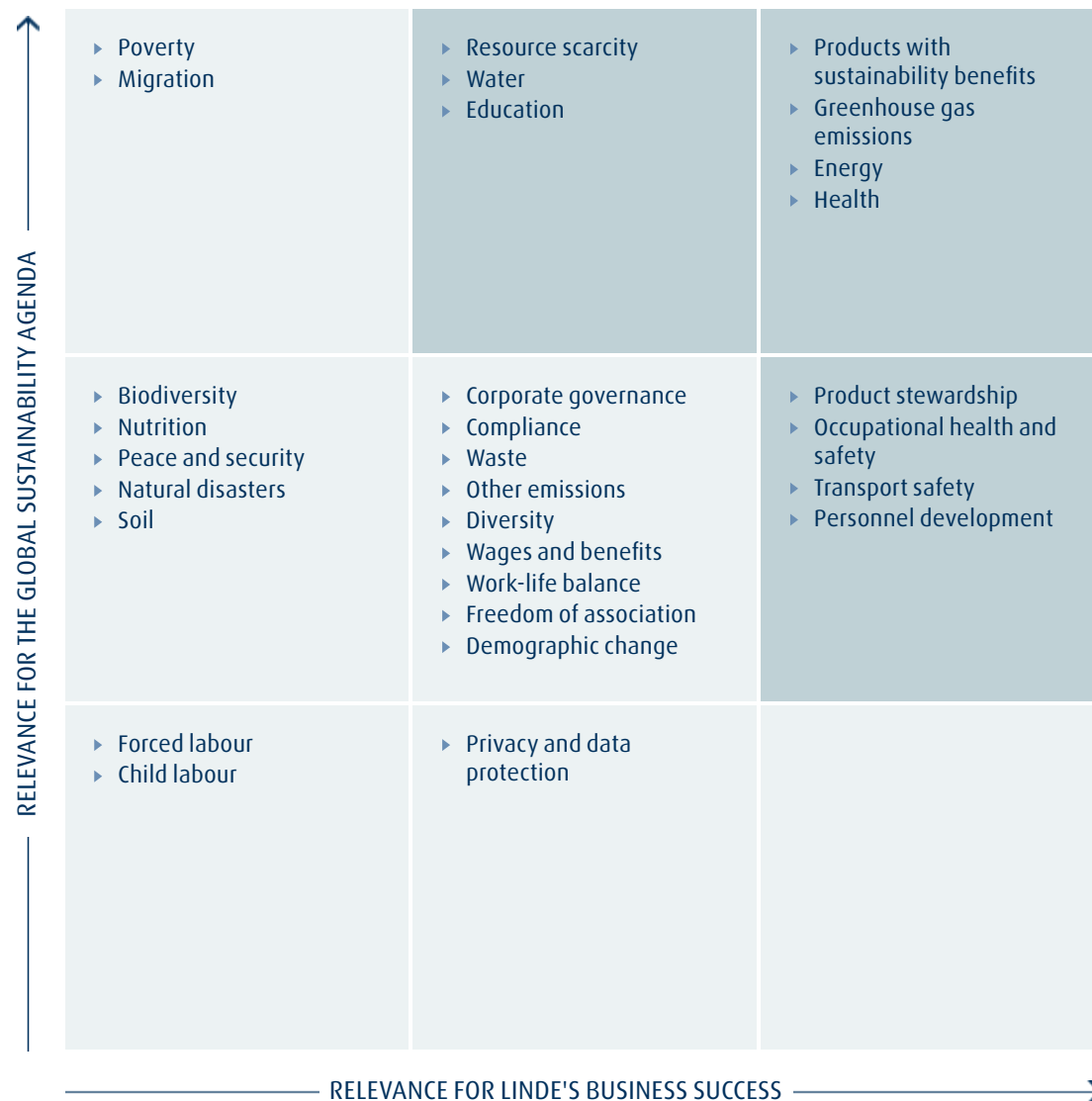
KEY FIGURES



## Relevance of sustainability topics for Linde

When we prioritise topics, we draw on a combination of impact analysis and evaluations by our stakeholders. Our focus is on the extent to which those topics

- are relevant to the business success of Linde. We also include here for example assessments made by our customers, investors and employees.
- are important for the sustainable development of society. Here, we evaluate the impact of our business activities on people and on the environment. Also included here are assessments made by experts, such as political figures and non-governmental organisations.



## MORE ABOUT






- Energy and climate protection
- Safety
- Innovation and products
- Engagement with stakeholders
- Opportunities and risks  
(Financial Report p. 82 ff.)

# GOALS

## STATUS

-  New goal
-  In progress
-  Target reached

## Corporate governance

Target/goal	Timeframe	Progress	Status
<b>Finance</b>			
Group revenue development after adjustments for exchange rate effects in for the current financial year in the range of -3 percent to +3 percent	2017	New target > More in the Annual Report, p. 97	
Group operating profit after adjustments for exchange rate effects on a par with the previous year could increase by up to 7 percent; based on the exchange rates that applied on balance sheet date of 31 December 2016, this corresponds to a Group operating profit of between EUR 4.2 bn and EUR 4.5 bn	2017	> More in the Annual Report, p. 97	
ROCE of between 9 percent and 10 percent in the 2017 financial year	2017	> More in the Annual Report, p. 97	
Reduce costs by around EUR 180 m through the Focus restructuring programme	2015 – 2017	New target > More in the Annual Report, p. 44	
Reduce costs by around EUR 370 m per annum through the LIFT programme	From 2019	New target > More in the Annual Report p. 44	

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Target/goal	Timeframe	Progress	Status
<b>Products</b>			
Develop products and technologies that unite customer value and sustainable development	Ongoing	<p>A new innovation strategy has been devised which focuses on five key areas: advanced materials, efficiency, environment &amp; resources, quality of life, and digitalisation</p> <p>Analysis of environmental benefits of selected technologies and applications</p> <p>500 patents in chemical and environmental sectors, clean energy and hydrogen technologies</p> <p>Around 50 percent of research projects aim to achieve an environmental benefit</p> <p>&gt; More about <a href="#">innovations</a></p> <p>&gt; More about <a href="#">climate protection</a></p> <p>&gt; More about <a href="#">water</a></p> <p>&gt; More about <a href="#">air emissions</a></p> <p>&gt; More about <a href="#">waste</a></p>	
<b>Engagement with stakeholders</b>			
Reflect the needs of our stakeholders in our sustainability management	Ongoing	<p>More than 1,500 questions from stakeholders answered about sustainability at Linde</p> <p>Key areas of focus with regard to sustainability reviewed again based on a materiality analysis, taking into account stakeholders' requirements</p> <p>Shareholders and potential investors offered the opportunity to meet us in person – at almost 40 conferences and roadshows worldwide, at several events for private investors and in the course of plant visits</p> <p>&gt; More about <a href="#">stakeholders</a></p> <p>&gt; More about <a href="#">the materiality analysis</a></p> <p>&gt; More about investor relations in the Annual Report, p. 38</p>	




## Safety

Target/goal	Timeframe	Progress	Status
<b>Occupational safety</b>			
Continuously reduce the number of workplace accidents per 1 million hours worked (base year 2012)	2020	<p>Achieved a 24 percent reduction in workplace accidents per 1 million hours worked in 2016 compared with 2015</p> <p>&gt; More about <a href="#">occupational safety</a></p>	



Target/goal	Timeframe	Progress	Status
<b>Health protection</b>			
Expand and harmonise occupational health management programmes	Ongoing	Regular medical check-ups, additional health insurance and in-house sports activities introduced in countries in the Middle East region  New health options launched for employees > More about <a href="#">work-life balance</a> > More about <a href="#">health protection</a>	
Reduce health risks arising from manual work	Ongoing	Occupational health and safety audits conducted at just under 49 percent of operating sites; around 17 percent of operating sites are audited in accordance with OHSAS 18001  Around 3,000 employees in Africa were reached by a health information campaign relating to manual work > More about <a href="#">production</a> > More about <a href="#">health protection</a>	
<b>Production</b>			
Conduct a standardised risk review of sites and define control mechanisms to minimise these risks to the greatest possible extent (Major Hazards Review Programme, MHRP)	Long-term goal	More than 95 percent of the sites concerned certified in line with the MHRP process by the end of 2016 > More about <a href="#">production</a>	
<b>Transport</b>			
Reduce the frequency of serious transport incidents per 1 million kilometres travelled by 20 percent compared with the base year 2015	2020	More specific target set (includes for the first time incidents previously classified as non-preventable)  Frequency of serious transport incidents based on this new definition has reduced by around 9 percent since 2015 > More about <a href="#">transport</a>	

## Environmental protection

Target/goal	Timeframe	Progress	Status
<b>Climate protection and energy efficiency</b>			
Avoid a total of 6 million tonnes of CO <sub>2</sub> emissions as a result of technical improvements in plant design and more efficient production processes in air separation plants and hydrogen plants (base year 2009)	2020	A total of 3.3 million tonnes of CO <sub>2</sub> emissions have been avoided since 2009, of which 0.8 million tonnes are direct emissions and 2.5 million tonnes are indirect emissions > More about <a href="#">energy and climate protection</a>	

Target/goal	Timeframe	Progress	Status
Evaluate ways to reduce emissions from transport vehicles (scope 1 emissions)	Ongoing	Measures implemented which are designed to optimise routes, make better use of transport capacity and provide training in defensive driving > More about <a href="#">energy and climate protection</a>	
<b>Water</b>			
Develop a strategy for sustainable use of water in regions experiencing water stress	2016	Reviewed key production sites worldwide on the basis of the criteria set out by the World Resources Institute regarding the situation in regions which experience water scarcity  Measures to optimise the use of water and cooling water systems are implemented, focusing on regions which experience water scarcity  — At four sites in Eastern Europe, Asia and South America, potential savings were identified of around 440,000 cubic metres of water, which would lead to cost savings of around EUR 70,000 per annum — Information campaigns were conducted in Africa and the Middle East on the economical use of water, which reached more than 3,000 employees  > More about <a href="#">water</a>	
Set other quantitative targets for environmental protection	Long-term goal	Water supplies at our key production sites worldwide reviewed for the first time on the basis of the criteria set out by the World Resources Institute  > More about <a href="#">water</a>	

## Employees

Target/goal	Timeframe	Progress	Status
<b>Management</b>			
Increase the proportion of female employees worldwide in the first management tier below the Executive Board to 14 percent in 2017 and 18 percent in 2022	2017	Proportion of women in the first management tier below the Executive Board was 16 percent in 2016 (2015: 11 percent)  > More about <a href="#">diversity</a>	
Increase the proportion of female employees worldwide in the second management tier below the Executive Board to 17 percent in 2017 and 22 percent in 2022	2017	Proportion of women in the second management tier below the Executive Board was 18 percent in 2016 (2015: 16 percent)  > More about <a href="#">diversity</a>	

Note: Some targets have been modified since 2015.

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# INNOVATIONS AND PRODUCTS

GRI G4-EN7, G4-EN27

 7, 8, 9

In 2016, we invested a total of EUR 121 m in research and development (2015: EUR 131 m). At 31 December 2016, we employed 345 staff in this field (2015: 348), 228 of whom were working in the Gases Division and 117 in the Engineering Division. To protect our innovations from the competition, we filed 360 new patents across the Group during the reporting year. On 31 December 2016, various Linde technologies were protected by 3,607 patents. Many of them feature sustainability aspects, with over 500 patents relating to the chemical and environmental sectors, clean energy and hydrogen technologies. More than half our research and development projects in 2016 also aimed to achieve benefits for environmental protection.

## Innovations



By drawing on the findings of our research, we are continuously tapping into new ways of using our gases and improving our existing processes, plant technologies and applications. Development is almost always set in the context of commissions and involves close liaison with our customers, taking their requirements into account. We take part in specific collaborative projects so that we can cooperate with leading external institutions and companies, and we rely as a result on a network of more than 90 partners in over 20 countries.

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## Research and development<sup>1</sup>

		2016	2015	2014	2013
Expenditure for research and development	€ million	121	131	106	92
Employees in the research and development field		345	348	390	367
New patents filed		360	287	260	263

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

During the reporting year, we devised a new innovation strategy which concentrates on five key topics: advanced materials, efficiency, environment & resources, quality of life, and the overarching topic of digitalisation.

### Advanced materials

In the field of advanced materials, we are concentrating on the impact which industrial gases have on the characteristics of materials and on production processes. We are assuming a leading role in researching the part played by industrial gases in additive manufacturing – also known as 3D printing. We have set up a Global Development Centre for this purpose at our Unterschleissheim site near Munich, Germany. This is where we developed ADDvance™ O2 precision, the first technology which enables exact analysis and control of oxygen and humidity levels within the printer chamber when metal powder is used in 3D printing.

In Taichung in Taiwan, we opened a research and development centre for electronics in autumn 2016. We invested around EUR 5m in the state-of-the-art laboratory for analysis and product development. We promote the ongoing technical progress of our customers in the electronics industry by supplying high-purity tailor-made products and helping them to develop high-tech materials.

### Efficiency

In a market environment characterised by ever tougher competition, boosting efficiency – even of established processes – is key. Welding and cutting processes have traditionally been one of the main areas of application for Linde gases. This area also still offers many opportunities for efficiency improvements. In 2016, we unveiled AVANTO™, an innovative process management system which significantly improves the efficiency and quality of welding operations.

### Environment & resources

In engineering processes, there is often an interrelationship between energy efficiency, cost-effectiveness and environmental compatibility. Most of our research and development activities are therefore aimed at continuing to optimise this interplay. We seek out partners to help us achieve our objectives. We are, for example, a member of a partnership comprising 17 companies and industrial and scientific institutions, which came together in 2016 under the umbrella of the Carbon2Chem climate protection research project. The project, which is set to run for ten years, is to investigate ways of using smelting gases from steelworks to extract chemical raw materials. The coke oven gas produced by steelworks contains more than 60 percent hydrogen by volume and has until now been a virtually untapped resource.

Coal-fired power plants are still being used across the globe to generate energy. They emit carbon dioxide (CO<sub>2</sub>) which is harmful to the climate. In 2016, we successfully completed a pilot project in collaboration with BASF which resulted in the development of an even more energy-efficient and cost-effective CO<sub>2</sub> capture process. The process was tested at the National Carbon Capture Center in Wilsonville, Alabama. Together with BASF, we are now aiming to test the improved technology on a larger scale and to forge ahead with its commercialisation.

We are also committed to the integration of renewable energy. We are, for example, involved in two Kopernikus projects subsidised by the German federal government: "Power-to-X" on the use of renewable electricity to produce synthetic fuels and basic chemicals, and "SynErgie" to make industrial facilities requiring electricity (such as air separation plants) more flexible.

In addition, for several years now we have also been supporting the ongoing development of hydrogen mobility. Since February 2015, we have been part of the joint venture H<sub>2</sub> Mobility which is based in Berlin. The aim of the partnership between various industrial groups is the gradual expansion of a nationwide fuelling station network in Germany. By 2023, around 400 fuelling stations should be in operation – at the end of 2016 there were 22. For demonstration purposes and to acquire practical experience, Linde set up car-sharing company BeeZero with a fleet of 50 hydrogen-powered fuel cell vehicles in Munich during the reporting year.

### Quality of life

In 2016, we developed the data platform Hospital IQ which builds on the benefits offered by the new generation of medical oxygen cylinders (LIV® IQ). The LIV® IQ cylinders can be centrally monitored by a hospital employee using a PC or another device with access to the Internet. This significantly reduces the need for time-consuming checks on each individual cylinder, giving staff more time to spend with their patients. Instead of a simple pressure indicator, a digital display indicates the time remaining for the oxygen supply. LIV® IQ calculates this automatically, based on the amount of oxygen left in the cylinder and the flow rate that has been set.

### Digitalisation

Digitalisation will result in long-term changes to business and methods of working in the gases industry and in plant construction. The networking of new and existing data sources opens up a number of additional opportunities for us and our customers. Against this backdrop, we have set up a centre of competence for digitalisation in Pullach in Germany, where digitalisation experts working on an interdisciplinary basis are using data derived from interactions with customers, engineering, operations and logistics to develop prototypes and services. In this context, we are looking for example at process automation using artificial intelligence.

### Products with benefits for people and the environment

We are constantly looking at ways in which our products can support customers so that they can develop more sustainable processes: for example, through greater energy efficiency or reduced emissions. One of the ways in which we do this is by continuing to expand our product range in the area of energy and environmental technologies. This range comprises processes and technologies required along the entire length of the value chain of renewable and fossil fuels: from production via conversion, transport and storage to their most efficient use.



Products



**Food  
& beverages**

**70%**

is our market share in technologies and applications used in salmon aquaculture farming in Norway



**Chemistry  
& energy**

Around  
**17,000**

tonnes of NO<sub>x</sub> emissions per annum can be avoided by our customers using our LoTOx™ technology in combustion processes



**Metallurgy  
& glass**

**30 million**

tonnes of CO<sub>2</sub> can be avoided by our customers in one year just by using two of our oxygen and hydrogen applications



**Manufacturing  
industry**

**850 million**

cubic metres of water per annum is brought up to drinking water quality by customers in just six countries using our Solvcarb® process



**Electronics**

The equivalent of  
**275,000**

tonnes of CO<sub>2</sub> per annum can be avoided by customers in the semiconductor industry by replacing environmentally harmful nitrogen trifluoride with fluorine



**Healthcare**

About  
**1.8 million**

patients with respiratory diseases worldwide are treated at home with our oxygen therapy and additional Homecare therapies



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Healthcare is an important growth market. In 2016, our Healthcare business generated revenue of EUR 3.740 bn. Our therapies for the treatment of respiratory disease and the services which we are able to provide in the care continuum from hospital to home contribute towards improving the lives of around 1.8 million patients and relieving the burden on healthcare systems. In the United States, for example, a stay in the emergency room to treat acute exacerbation of chronic obstructive pulmonary disease (COPD) costs around USD 2,000. If the patient then has to be admitted to hospital, the average cost of treatment may be as much as USD 4,000 per day. According to a calculation by Medicare, the US federal health insurance programme, the average cost for providing stationary oxygen in the home, depending on a patient's location, is a relatively modest USD 2.35 per day.

## MORE ABOUT

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- Energy and climate protection
- Water
- Emissions to the air
- Waste and recycling
- Key material topics
- Products for the environment
- Research and development (Financial Report p. 68 ff.)
- There's no place like home (Annual p. 60 ff.)

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# CORPORATE GOVERNANCE

**GRI** G4-14, G4-15, G4-37, G4-49, G4-50, G4-56, G4-57, G4-58, G4-EN29, G4-LA16, G4-HR2, G4-HR3, G4-HR12, G4-SO3, G4-SO4, G4-SO11, G4-PR8



1, 2, 3, 4, 5, 6, 7, 10

Good corporate governance is an essential prerequisite of our business success. Our corporate governance is based on the German Corporate Governance Code promulgated by the Government Commission. We comply to a great extent with the requirements of the Code and explain any deviations from the Code in our Annual Report.

Corporate governance also means ensuring compliance with laws, regulations and voluntary commitments. The core guidelines governing the way we do business are set out in our Code of Ethics. This describes the principles we expect all Linde employees to adopt when dealing with business partners, officials, colleagues and society. Issues covered in the Code of Ethics include not only corruption, antitrust law and the protection of company secrets, but also human rights, safety standards, labour standards and social standards. Our global compliance organisation helps us fulfil our commitments in our day-to-day business.

Moreover, we are a signatory to the United Nations Call to Action: Anti-Corruption and the Global Development Agenda. This means that we have joined other companies in demonstrating a commitment to the ongoing development of efficient anti-corruption measures.

## Compliance organisation

Our compliance organisation is led by the Chief Compliance Officer. The implementation of compliance is supported by compliance officers in the regions, divisions and business areas. Their tasks include advising employees, providing training and handling compliance cases. The Executive Board and the Audit Committee of the Supervisory Board are given regular updates about the activities of the compliance organisation and about progress achieved.

## Prevention is key

Our objective is to prevent compliance violations. In our global compliance programme, we therefore rely especially on providing information, training and personal advice.

We use various communication channels to keep our employees up to date. Our Intranet is our basic form of communication. Here, our employees worldwide are able to access information about compliance and compliance guidelines in up to 29 languages. We also involve the Executive Board in our communication measures relating to compliance.

We offer training on compliance to our employees. Some of this training, such as that relating to guidelines dealing with gifts, hospitality and invitations to events, is targeted at selected employees in relevant areas of the Group.

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During the reporting year, we completed the introduction of a new e-learning programme in twelve languages launched in 2015. By the end of 2016, more than 35,000 employees had successfully participated in this programme. Other training courses are addressed to all our employees, including training on the contents of our Code of Ethics. New Linde employees get to know our compliance guidelines during their induction. In 2016, a new compliance e-learning programme in nine languages was introduced for new employees. More than 3,000 sessions of this programme have been successfully completed until the end of the reporting year. Regular refresher courses complement our programme. Our range of training opportunities includes classroom-based training and e-learning courses. More than 22,000 members of staff across the globe were provided with classroom-based training between 2009 and 2016. Of these, over 3,000 received training in 2016. Between 2009 and 2016, employees completed around 160,000 e-learning training sessions. Just under 44,000 of these sessions were completed in 2016.

We operate compliance hotlines where our compliance officers provide support to all our employees, regardless of their role or seniority. In 2016, our compliance officers received more than 7,700 requests for legal advice. Most of the queries related to the prevention of corruption (23 percent) and to antitrust law (25 percent). We also received queries about export control (28 percent) and data protection (15 percent).

## Compliance<sup>1</sup>

	2016	2015	2014	2013
Contacts Integrity Line	348	300	734	393
Investigations as a result of reports to the Integrity Line	106	140	127	88
of which referring to personnel topics	% 30.1	25.7	26.8	36.4
of which referring to potential offences against property	% 30.7	26.4	32.3	33.0
of which referring to potential discrimination	% 1.3	2.8	1.6	2.3
of which referring to potential conflicts of interest	% 15.0	13.6	9.4	12.5

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

## Dealing with misconduct

As part of our global compliance programme, we have processes in place to identify and deal swiftly with any misconduct. We actively encourage our employees to ask for advice early if they have any concerns and to report any violations of our Code of Ethics, other Group guidelines or legal requirements. Staff members can approach their direct line manager or department head, or they can contact a representative from Human Resources, Compliance, Legal Services or Internal Audit. In addition, an important part of our compliance programme is our global reporting system, the Linde Integrity Line. This enables employees and external stakeholders such as customers and suppliers to report suspected violations, anonymously if they so wish. We ensure that each case is examined and generates a response. Our Integrity Line guideline sets out the entire process and ensures that reports remain confidential and that data is protected.

In 2016, the Integrity Line was contacted 348 times in total (2015: 300). There were 106 cases (2015: 140 cases) involving suspected misconduct. Most of these related to personnel issues (2016: 30 percent; 2015: 26 percent) or to offences against property (2016: 31 percent; 2015: 26 percent). We also investigated conflicts of interest (2016: 15 percent; 2015: 14 percent) and discrimination (2016: 1 percent; 2015: 3 percent). The investigations of these cases were conducted principally by Internal Audit as well as by Legal & Compliance and the department for Health, Safety & Environment.

Linde employees who violate laws or regulations or fail to comply with the Group's voluntary commitments must be prepared to face sanctions. All the cases which have been reported via the Integrity Line and prove to be justified once they have been investigated entail consequences. In 2016, these consequences included training, warnings and dismissals. We apply the knowledge we gain from dealing with these cases to make further improvements to our compliance programme.

## MORE ABOUT

- Strategy for sustainability
- Sustainable procurement
- Linde Integrity Line
- Corporate governance  
(Financial Report p. 14 ff.)

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# SUSTAINABLE INVESTMENT

The capital market evaluates responsible corporate management by making financial investments which take account of the principles of sustainable management (Socially Responsible Investment, SRI). In 2016, we continued our in-depth dialogue with participants in the capital markets. At almost 40 conferences and roadshows around the world, several events for private investors and in the course of plant visits, we offered our shareholders and potential investors the opportunity to speak personally to representatives of the Group, including members of our Executive Board. The proportion of investors among Linde shareholders who are oriented towards sustainability rose in 2016 to 12 percent (2015: 11 percent).

Linde is represented in a number of SRI funds, indices and rankings. These include the global Dow Jones Sustainability Index (DJSI World), the FTSE4Good Index Series, the Ethibel Sustainability Index (ESI) and the STOXX Global ESG Leaders Index.

## MORE ABOUT

- Energy and climate protection
- Investor Relations
- Ratings and rankings
- Linde shares (Financial Report p. 38 ff.)

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# ENGAGEMENT WITH STAKEHOLDERS

GRI G4-16, G4-24, G4-25, G4-26, G4-27, G4-S01, G4-S06

 7, 8, 9

We consult our major stakeholders about key topics. Our major stakeholders include our employees, customers, shareholders and suppliers. Other relevant interest groups are politicians, economists and scientists, non-governmental organisations and society. We publish an overview of existing dialogue formats and common topics discussed with our stakeholders on our corporate website.

## Partnerships and collaborations

We work in partnership with scientific institutions and other companies to promote the development of sustainable solutions: for example, in the field of energy supply and mobility. Linde is one of the founding members of the Clean Energy Partnership (CEP), the largest demonstration project for hydrogen-based mobility in Europe. With the support of the German government, the CEP is testing fuel cell vehicles and their refuelling systems. In the H<sub>2</sub> Mobility joint venture which forms part of the CEP, we are cooperating with five other leading industrial companies.

## Associations

We are an active member of a number of German, European and international industry associations and trade associations. These include the German Chemical Industry Association (VCI), the German Engineering Association (VDMA), the European Industrial Gases Association (EIGA), the European Chemical Industry Council (CEFIC) and the Asian Industrial Gases Association (AIGA). Linde is also a member of selected corporate responsibility networks. These include the UN Global Compact and econsense – Forum for Sustainable Development of German Business.

## Politics

In 2016, one of the key areas in our dialogue with representatives of politics and society was the role of innovative technologies in the implementation of the Paris Climate Agreement. The dialogue focused above all on environmentally friendly processes such as power-to-gas, a process in which electrolysis is used to produce hydrogen from electricity and water, for the storage of energy, and the expansion of low carbon emission electromobility through fuel cell vehicles.

In our contacts with political decision-makers in Germany and Europe, we also focused on competitive conditions in energy and climate policy. Two of the key issues here are the revision of the European Emissions Trading Directive and the regulatory organisation of the energy markets in Germany and Europe, both of which are of considerable significance for our production plants.

As a group, Linde does not make donations to political parties. In the United States, employees of Linde North America have formed a political action committee. Under the umbrella of this independent registered committee, employees collect donations to politicians, political parties and associations and make their own decisions as to how the funds will be used.

## Stakeholders



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- Employees across the world
- Customer relations
- Capital market
- Sustainable procurement
- Social commitment
- Key material topics
- Political interests

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# CUSTOMER RELATIONSHIPS

GRI G4-PR5

With our gases and services, we are a partner to more than two million customers around the world in virtually all industry sectors. A third of the revenue of our Gases Division is derived from around 500 major customers, who are the focus of our key customer management. We work constantly to enhance customer satisfaction and to create the greatest possible customer loyalty. We therefore analyse success factors worldwide and communicate them to other business units.

## Customer segmentation within the Gases Division

Food & beverages	Chemistry & energy	Metallurgy & glass	Manu- facturing industry	Electronics	Healthcare	Others
Aquaculture & Water Treatment	Energy	Glass & Fibre Optics	Aerospace	Solar	Hospital Care	Education & Research
Beverages	Fine & Petro-chemistry	Heat Treatment	Automotive	Semi-conductor	Homecare	Retail
Food	Pharma	Non-ferrous	Heavy Construction & Machinery	Chip Packaging	Gas Therapies	Distributors
	Other Chemistry	Steel	Light Metal Fab. & Prod.		Care Concepts	
		Other Metallurgy & Glass	Other manu- facturing			

In 2016, we expanded two initiatives which aim to optimise our customer focus and our order processing. During the year, we launched a number of projects in various business units which seek to make long-term improvements in our customers' experience of Linde. Some of these projects were completed. The projects were based on a customer survey in 2015 in the twelve countries in which our Gases Division generates the most revenue. The improvement projects focused on areas such as responding efficiently to customer queries about delivery information and about the availability of products and services. In 2016, we also prepared the next customer survey which is due to take place in 2017 as we conduct the surveys at 18-month intervals.

Since 2016, customers in the 29 countries in which we generate the most revenue have also been able to rate us online, by telephone or by text immediately after the completion of a transaction: for example, following a delivery or once the customer has received an invoice. By the end of the reporting year, we had received 190,000 responses to this survey.

In this way, we are also able to register, process and follow up suggestions promptly and thereby provide systematic solutions to problems. In addition, our customers receive information from us about the steps we are taking to avoid any recurrence. We use the feedback from our customers to improve our products and processes. In addition, we organise events for our customers, so that we can gain a better understanding of their needs.

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Since 2014, we have been conducting a twice-yearly global survey in our Healthcare segment of patients in the Linde REMEO® programme who rely on long-term ventilation in special REMEO centres or in their own homes on how satisfied they are with the service provided. The patients are asked to rate such aspects as the care they receive from medical and nursing staff, the catering and the rooms at the centres. In 2016, 723 patients took part in the survey. Based on the results of the survey, strengths and potential improvements are identified, successful models communicated and improvement projects launched in various countries.

MORE ABOUT

- Product stewardship
- Innovation and products

# SUSTAINABLE PROCUREMENT

GRI G4-12, G4-EC9, G4-EN32, G4-EN33, G4-LA14, G4-LA15, G4-HR1, G4-HR2, G4-HR10, G4-HR11, G4-SO9, G4-SO10



1, 2, 3, 4, 5, 6, 7, 8, 10

We have business relationships with suppliers in more than 100 countries. When selecting suppliers, we consider not only commercial criteria such as quality, price and availability, but also aspects such as safety and the environment. In 2016, we expanded the measures we adopt to promote diversity in the supply chain, especially in the United States and in South Africa.

The most important items we purchase include energy, gas cylinders and valves, tanks and tank equipment, vehicles, IT products, services, and components for production plants, as well as equipment and consumables for our Healthcare business. Budget spent in OECD countries accounted for around 80 percent of our expenditure on goods and services in 2016. We purchase about 70 percent of the goods and services locally in the countries where they are needed. This cuts down the distances travelled and reduces costs and emissions. Working with local companies also enables us to support the regional economy.

## Supplier management



## Global standards

Our global Code of Conduct for Suppliers sets out minimum requirements for safety, environmental protection, labour rights and human rights, and corporate integrity. Since 2013, it has been a mandatory part of the contract for all new suppliers. At the same time, there has been a continual process of ensuring that those suppliers with whom contracts were signed prior to also agree to be bound by the Code of Conduct for Suppliers. By the end of 2016, around 80 percent of our strategic suppliers had signed up to the Code of Conduct.

## Evaluating our suppliers

We conduct random checks to ensure that our suppliers comply with the guidelines set out in our Code of Conduct. We focus in particular on suppliers in higher-risk areas with regard to sustainability: for example, environmental protection, safety or social issues. In 2016, we reviewed over 900 suppliers to ensure that they complied with our guidance on environmental and safety issues and other issues relating to sustainability. We investigate any breaches of our requirements by our suppliers. When conducting reviews of construction sites during the reporting year, we identified around 270 deviations from the Code of Conduct, some of which related for example to risk assessments and work permit procedures, order and cleanliness, work involving a risk of falls, and environmental protection. We then worked together with the contractors affected to devise measures to improve the situation and to monitor their implementation. Eleven cases were reported in 2016 via our Integrity Line which also related to supplier relationships. In two cases, the supplier relationship was terminated. In 2017, we plan to develop and introduce new minimum requirements in our Engineering business for standards and processes when we are working together with suppliers and logistics service providers. The aim is to improve our partners' safety performance and avoid accidents.

We also involve suppliers in our own safety and environmental management. In 2016, we carried over the programme designed to promote safety-conscious behaviour on construction sites, which we launched in 2015, to all construction sites managed by our Linde Division. We were able to reach a total of around 6,400 contractors' employees in this way. Drivers who are contractors as well as our own Linde drivers regularly participate in driver education programmes and training. Measures such as these help to build reliable supply relationships and to ensure that suppliers comply with our requirements and improve their performance.

## MORE ABOUT

- Raw materials and resources
- Safety
- Human rights
- Energy and climate protection
- Transport
- Linde Integrity Line
- Opportunities and risks  
(Financial Report p. 82 ff.)

# SAFETY

GRI G4-2, G4-14, G4-EN2, G4-EN24, G4-EN29, G4-EN31, G4-LA6, G4-LA7, G4-LA9, G4-SO1, G4-SO2, G4-PR1

 1, 2


We operate a safety management system based on standards and guidelines which apply worldwide. The focus is on eliminating risks for our employees, business partners, neighbours and other third parties as far as possible.

Audits are conducted to verify compliance with the prescribed standards at our business locations. Incidents which have particular relevance for safety in order to identify areas of weakness are recorded worldwide. In addition, we document near misses from which we can learn lessons. We prepare for events which might occur, such as natural disasters, serious crime and pandemics, by drawing up risk management plans. When doing so, cooperations with the municipalities in the areas surrounding our business locations are key. In the course of 2016, we carried out safety training or emergency drills at over 90 sites worldwide, for example in conjunction with fire brigades or other local organisations.

In 2016, the Executive Board revised our safety strategy, introducing measures for improvement covering the years 2017 to 2020. We also continued to engage in numerous activities to support our safety culture. Again in the reporting year, safety targets were set for all executives in the operating business units. These targets were linked to salaries, so as to increase the sense of personal responsibility of those executives for safety at work. Furthermore, we held workshops during the year

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for around 190 managers in all regions and divisions to teach them how to promote safety-conscious behaviour. It is planned that all managers will have received this training by the end of 2017. In addition, we have implemented many other training programmes and awareness-raising activities with a regional focus, in order to continue to reduce the number of accidents in the workplace and traffic accidents occurring in the course of our business operations.

#### *Production sites with occupational health and safety management system<sup>1</sup>*

		2016	2015	2014	2013
Production sites where occupational health and safety audits have been conducted	%	48.9	51.7	57.4	58.1
Number of conducted occupational health and safety audits		706	687	749	790
Production sites certified to OHSAS 18001 <sup>✓</sup>	%	17.1	16.5	15.7	17.8

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

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- Strategy for sustainability
- Key material topics

# OCCUPATIONAL SAFETY AND HEALTH PROTECTION

GRI G4-14, G4-LA6, G4-LA7



We have set out global guidelines governing occupational safety and health protection. To ascertain whether the right conditions are in place to ensure safety at work we carry out risk assessments and audits. In 2016, audits were conducted at 48.9 percent of our operating sites (2015: 51.7 percent).

## Occupational health and safety<sup>1</sup>

	2016	2015	2014	2013
Workplace accidents of employees with at least one day of absence ✓	269	358	318	304
Workplace accidents of contractors with at least one day of absence ✓	131	151	140	150
Workplace accidents with at least one day of absence (employees) ✓ <i>per million hours worked</i>	2.2	2.9	2.4	2.3
Workplace accidents with at least one day of absence (contractors) <i>per million hours worked</i>	2.2	2.2	1.8	1.7
Fatal workplace accidents involving employees ✓	1	2	2	4
Fatal workplace accidents involving contractors ✓	1	1	3	6
Sick days <i>per employee</i>	5.4	5.6	5.3	4.7

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

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We have set ourselves the target of continuing to reduce the number of workplace accidents resulting in at least one lost working day per million hours worked by employees by 2020. The base year is 2012. In 2016, the rate of workplace accidents at our sites around the world per one million hours worked was 2.2 (2015: 2.9). The equivalent figure for contractors during 2016 was 2.2, the same as in 2015. It is with the deepest regret that we must report that in 2016 one of our employees lost his life in a fall in Algeria and one contractor's employee lost his life in a vehicle fire in Germany while working for us.

In order to prevent severe injuries and fatalities, we made improvements during the reporting year to our global reporting process for incidents. The process involves recording and investigating thoroughly actual and potential incidents with a high risk. We also provided training in 2016 for managers and employees to improve how they identify, report and investigate incidents.

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During the reporting year, we launched numerous measures as part of our global safety initiative. One of these was the first global Linde Safety Day which took place in virtually all countries with Linde locations and at most Linde Engineering project construction sites. This involved hundreds of events for employees and contractors on various aspects of safety.

For our Engineering Division we also launched a programme for managers which aims to improve the safety culture and to strengthen the sense of personal responsibility for safety. Through this programme, we delivered around 500 training courses for managers and contractors at our project construction sites worldwide. In 2017, we want to build on this and to develop and introduce a behavioural safety programme for employees at production sites.

In many countries and regions, we launched new health options for our employees. We were able to reach around 3,000 employees, for example, when we conducted an information campaign in Africa which related to manual activities.

Once again during the reporting year, we received several awards in recognition of our commitment to occupational safety and health protection. Twelve sites in France, Hungary, the Czech Republic and Slovakia, for example, received awards from the European Industrial Gases Association for several years of work with no accidents with days of employee absence.

#### MORE ABOUT

- Sustainable procurement
- Key material topics



# PRODUCTION

GRI G4-EN24



1, 2, 7, 8

Risks that may arise from production are identified and evaluated by our experts at locations around the world. In addition, we use our Major Hazards Review Programme (MHRP) to conduct a systematic assessment of process risks which might result in accidents or damage to property or to the environment. This programme is constantly being refined to ensure that we are in a position to react to new potential risks. By the end of 2016, we had audited more than 95 percent of the relevant plants in accordance with the MHRP process. During the year 2016, we also continued to introduce a global standard for quantitative risk analyses on sites with an increased safety risk.

We pay attention to production safety from the initial planning stage of our new plants. An individual safety plan is devised for each new plant. This plan is based on our own standards, the rules which apply in the relevant country and our customers' guidelines. Environmental protection is also taken into consideration.

## Production sites with environmental and quality management system<sup>1</sup>

		2016	2015	2014	2013
Production sites certified to ISO 9001 ✓	%	63.0	67.1	72.1	77.9
Production sites certified to ISO 14001 ✓	%	31.7	31.7	30.5	31.8
Production sites where environmental audits have been conducted	%	46.0	42.6	50.0	51.8
Number of conducted environmental audits		629	586	639	657

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

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In 2016, around 1,300 environment, safety and health protection audits were carried out on our sites by us or by third parties. Our internal audits are conducted in accordance with the provisions of the international certification processes for quality and occupational health and safety, ISO 9001 and OHSAS 18001. Several of our sites also have external certifications. In 2016, additional sites in Ukraine, Argentina, Poland and Finland were externally certified for the first time according to OHSAS 18001, the standard for occupational health and safety management systems. Our plants supplying CO<sub>2</sub> to the food industry for the production of carbonated drinks are also certified under the food safety system certification FSSC 22000.

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→ Sustainable procurement

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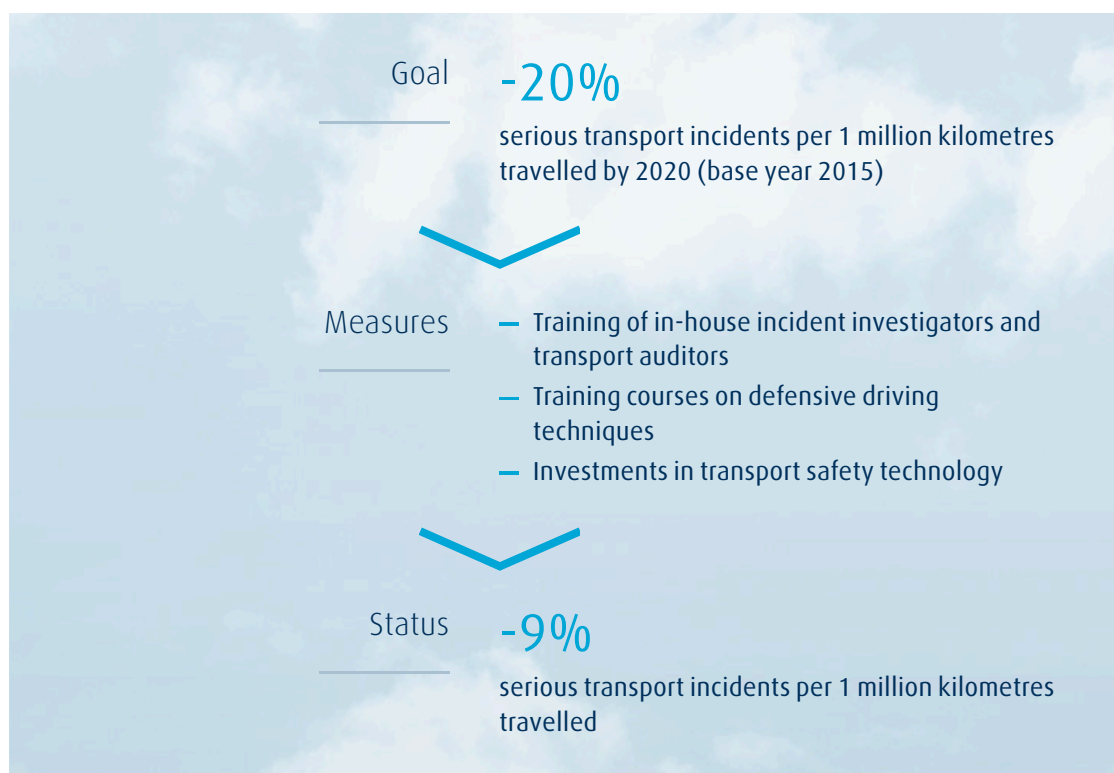
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# TRANSPORT

GRI G4-EN30, G4-LA6



Our global safety management also covers the transportation of products. We have set ourselves the target of minimising the number of transport incidents. In 2016, our Executive Board specified this target. Incidents previously classified as non-preventable are included in the new target. By the end of 2020, we want to reduce the number of serious transport incidents per one million kilometres travelled by 20 percent in comparison with the year 2015. In 2016, we were able to reduce the frequency of serious transport incidents based on this expanded definition by around 9 percent.



During the reporting year, we continued to train more than 70 employees worldwide as in-house incident investigators and 13 employees as transport auditors. The aim is to conduct incident investigations and transport audits consistently throughout the company, in order to obtain information vital to the improvement of transport safety. This will enable us to learn from root causes and reduce similar risks in future. We are planning to provide more training courses in 2017 in, for example, the UK and South Africa.

In addition, we continued to deliver driver theory and practical training courses. These included information on defensive driving techniques and on how to recognise and avoid situations that could result in a commercial vehicle rollover. These courses are mandatory at least once every three years for our drivers and our contractors' drivers. Moreover, we have invested in transport safety technology. One example of this is that from 2016 onwards, we have decided that in Europe and the United States we will only purchase new vehicles which have integrated emergency brake systems.

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## Transport<sup>1</sup>

		2016	2015	2014	2013
Distance driven by Linde's transport fleet and its contractors <sup>✓</sup>	million km	878	857	975	963
Serious transport incidents involving trucks <sup>2 ✓</sup>	per 1 million km	0.105	0.115	0.104	0.139

✓ Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> Severe traffic incidents, e.g. with serious effects on the health of the employees involved or with reportable emissions to the environment, as well as transport incidents leading to material costs above a defined threshold. The performance indicator was redefined in 2015. The new definition includes not only preventable transport incidents but also incidents previously classified as non-preventable. The figure has been recalculated for previous years.

In 2016, a Linde Deliver Team Day took place in ten countries in South East Asia at the same time. The purpose of this day was to develop a common understanding that successful accident prevention requires cooperation from all those involved. The day included a number of transport safety activities and was aimed at Linde drivers and drivers working for our transport service providers, and mechanics, as well as their families. Altogether the campaign reached teams and their families at around 50 locations.

Once again in 2016, we were recognised for our efforts in the area of transport safety, receiving awards in various regions. In Sri Lanka, our subsidiary Ceylon Oxygen was presented with the National Occupational Safety & Health Excellence Award 2016 in the transport safety category. During the reporting year, Linde Gas Austria received the Road Safety Award from the European Industrial Gases Association for the second time. This safety prize is an award for the lowest accident rate in the cylinder transport category for between 500,000 and 2 million kilometres travelled per annum.

## MORE ABOUT

- Sustainable procurement
- Energy and climate protection

# PRODUCT STEWARDSHIP

GRI G4-14, G4-EN27, G4-PR1, G4-PR3, G4-PR5



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We monitor product safety along the entire product value chain, based on global standards which relate not only to the manufacture of products and their transportation but also to the use of those products. We conduct a systematic review of potential risks which might arise from our established products, products which are used in new applications or products which have been recently launched onto the market. Crucial factors to consider when we conduct risk assessments are the quantities of products sold and the properties of products, such as toxicity. We hold around 25,000 safety data sheets for our products in a variety of languages. We have also brought together all existing provisions relating to the handling of products in a global guideline on product stewardship.

Depending on the risk potential, we also assess whether conditions are in place for the proper handling of gases on customer sites. In addition, we offer services such as inspection, maintenance and repairs relating to the supply of gases on site to our customers. An in-house training programme was used in 2016 to deliver training on the safe handling of gases to more than 5,800 participants in seven European countries alone. Our customers also take part in our training programme.

## International standards

We continuously check that we are complying with legal regulations in the Group. In the reporting year, we prepared for the third registration phase of REACH, the EU Regulation on chemicals, in 2018. Only a small number of the substances we produce are required to be registered under REACH. We provide clear information on an Internet platform about how we comply with the provisions of REACH and which substances are registered. To ensure the successful implementation of the provisions, we engage with customers and suppliers and cooperate with the European Industrial Gases Association.

As the manufacturer of medical devices, we implement the requirements of the European RoHS Directive (Restriction of Hazardous Substances) in our Healthcare business around the world. When operating production plants for medical gases, we comply worldwide with the Good Manufacturing Practice for pharmaceutical products.

Through our product stewardship programme, we also support the Global Product Strategy (GPS) devised by the International Council of Chemical Associations for the safe handling of chemical substances and the United Nations' Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

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- Sustainable procurement
- Linde REACH website

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GRI G4-2, G4-14, G4-EN2, G4-EN24, G4-EN29, G4-EN31, G4-SO1, G4-SO2, G4-PR1

 7, 8

PROGRESS	<b>Energy</b> 200 energy efficiency projects identified, generating cost savings of more than EUR 30 m →	<b>Water</b> Water supplies at key production sites worldwide reviewed for the first time based on criteria set out by the World Resources Institute →	<b>Water</b> 3,000 employees in Africa and the Middle East reached by information campaigns on the economical use of water →
	<b>Climate protection</b> <b>-3.3 million</b> tonnes CO <sub>2</sub> emissions in production processes since 2009 →	<b>Products</b> <b>-30 million</b> tonnes CO <sub>2</sub> emissions due to customers using our products →	<b>Products</b> <b>-17,000</b> tonnes NO <sub>x</sub> emissions avoided by our customers →
KEY FIGURES			
OUTLOOK	<b>Climate protection</b> Save 4.8 million tonnes of CO <sub>2</sub> emissions from the operation of air separation plants by 2020 (base year 2009) →	<b>Climate protection</b> Save 1.2 million tonnes of CO <sub>2</sub> emissions from the operation of HyCO plants by 2020 (base year 2009) →	<b>Environmental management</b> Certify additional sites in accordance with international environmental management standard ISO 14001 revised in 2015

A global process helps us to record and evaluate incidents and near misses which have particular relevance for environmental protection. We have set ourselves global targets in those areas in which environmental protection is most relevant.

### Environmental incidents<sup>1</sup>

	2016	2015	2014	2013
Environmental complaints	22	14	25	24
Reportable environmental incidents	19	13	21	25

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

We follow up suggestions about how we can make further improvements. In 2016, we received 22 complaints relating to the environment (2015: 14). Most of these complaints were concerned with the issue of noise. In addition, there were 19 reportable environmental incidents in 2016 (2015: 13). As in 2015, no fines were payable as a result.

### MORE ABOUT

- Strategy for sustainability
- Occupational safety and health protection
- Production
- Innovation and products
- Products for the environment

# RAW MATERIALS

GRI G4-EN1, G4-EN2, G4-EN32, G4-EN33



Efficient use of resources enables us to reduce our environmental impact and cut costs. Air is the most important raw material we use in the production of our gases. Carbon dioxide and natural gas are also key raw materials used by Linde. When manufacturing products, our other principal input is energy. The main packaging material we use is gas cylinders. A typical Linde cylinder has a lifespan of many years and is refilled on average four times a year. At the end of 2016, there were more than 25 million Linde cylinders in circulation. In addition, key materials processed by the Group include steel and aluminium, which are used in particular for the manufacture of components in plant construction.

## Minerals

We examine our supply chain for conflict minerals listed in the US Dodd-Frank Act. Against this background, all suppliers to our electronics segment for instance are required to confirm that their products are free of conflict minerals. We check that this is the case when conducting our supplier audits.

### Usage of resources and materials (in tonnes)<sup>1</sup>

	2016	2015	2014	2013
Raw materials and supplies✓	55,590	54,170	52,770	57,750
Packaging materials✓	3,510	3,160	5,580	3,990

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

✓ Assured by KPMG

## Renewable raw materials

More than 80 percent of the gases sold by Linde in 2016 measured by weight was derived from the natural raw material air. In the case of carbon dioxide, another of our main products, we recover around 80 percent of the raw material required from recycling processes, of which around 10 percent comes from purely organic processes. Carbon dioxide is, for example, a by-product from the fermentation of renewable raw materials.

The use of renewable energy and renewable raw materials as well is underpinned by Linde technologies. We are participating for example in a pilot project in Mainz, Germany: in what is currently the largest polymer electrolyte membrane electrolysis plant in the world, renewable energy has been used to produce hydrogen since 2015. The plant is designed to produce 200 tonnes of hydrogen per annum. In 2016, inspection and certification provider TÜV SÜD confirmed that greenhouse gas emissions from the production of hydrogen using this method at this plant are 75 percent lower than for hydrogen produced from fossil fuels. In Sweden, we generated around 450 tonnes of hydrogen entirely from water power in 2016. Fuel cell vehicles can fill their tanks with hydrogen at the hydrogen filling stations at Stockholm's Arlanda Airport and at Sandviken. Since 2012, we have also produced hydrogen using steam reforming technology from biomethane instead of natural gas at our Leuna site in Germany.

## MORE ABOUT

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- Sustainable procurement
- Energy and climate protection
- Waste and recycling
- Technologies for renewable energy
- Opportunities and risks  
(Financial Report p. 82 ff.)

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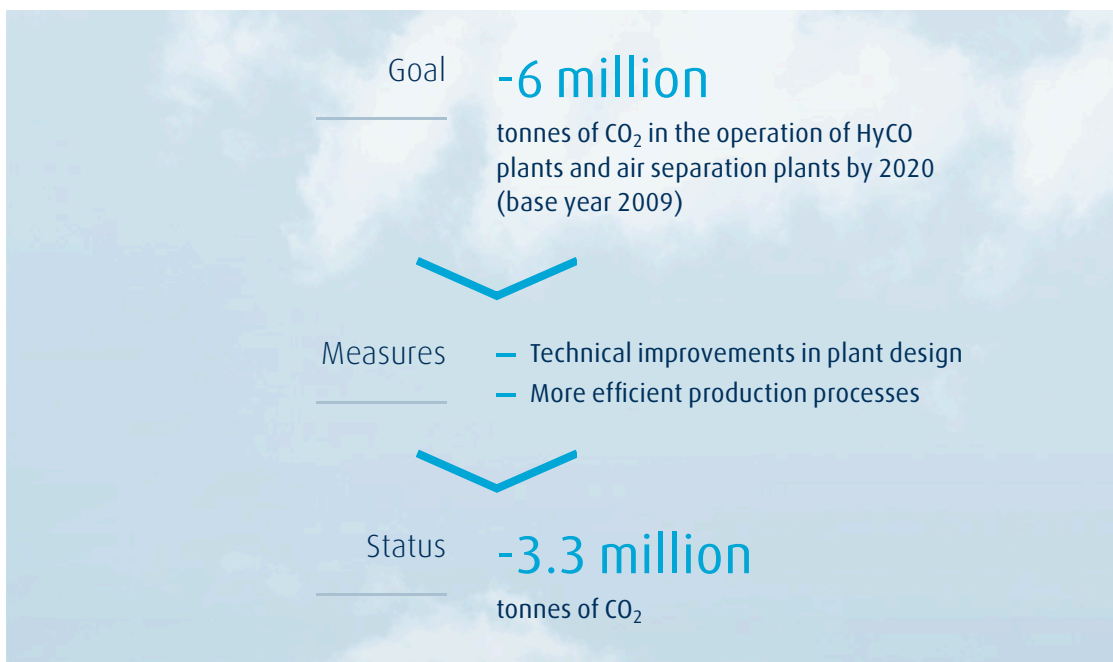
# ENERGY AND CLIMATE PROTECTION

**GRI** G4-EC2, G4-EN1, G4-EN3, G4-EN4, G4-EN5, G4-EN6, G4-EN7, G4-EN15, G4-EN16, G4-EN17, G4-EN18, G4-EN19, G4-EN20, G4-EN21, G4-EN24, G4-EN30



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We are constantly working on ensuring the efficient use of energy and on reducing greenhouse gas emissions. To do so, we rely on global energy management of plants and processes around the world. We control our energy consumption and greenhouse gas emissions worldwide and report thereon, complying for example with the international standards set out in the Greenhouse Gas Protocol. We offer our customers gases and technologies which reduce the consumption of natural resources and promote the use of renewable energy. To make the CO<sub>2</sub> balance sheet of the main air gases produced transparent for our customers, we use a standardised method which has been externally certified.



## Global targets

Most of the electricity required by Linde is used for the operation of our air separation plants. Around 60 percent of our total CO<sub>2</sub> emissions are the by-product of the generation of this electricity by energy providers and are reported by us as indirect emissions. Our direct emissions stem mainly from the operation of hydrogen and synthesis gas plants (HyCO plants).

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By 2020, we are seeking to avoid a total of 6 million tonnes of CO<sub>2</sub> emissions compared to the year 2009, of which 4.8 million tonnes in air separation plants (scope 2 emissions) and 1.2 million tonnes in HyCO plants (scope 1 emissions). To meet this target, we are focusing on technical improvements in plant design and more efficient production processes in HyCO and air separation plants. By the end of 2016, we had avoided a total of 3.3 million tonnes of CO<sub>2</sub> emissions, of which 0.8 million tonnes were direct emissions and 2.5 million tonnes were indirect emissions. In 2016, we identified more than 200 projects worldwide that helped reduce our energy consumption and CO<sub>2</sub> emissions – for example by using more efficient compressors and by exchanging valves. Implementing these projects generated cost savings for the Group of more than EUR 30 m in 2016. We avoided around 220,000 tonnes of CO<sub>2</sub> emissions as a result.

**Climate protection target: avoidance of 6 million tonnes of CO<sub>2</sub> by 2020 (in million t, cumulated)**



Another focus of our climate protection measures is the transportation of products. Around 900 million kilometres were covered by our own transport fleet and transport service providers carrying our goods in 2016. Optimised routes, better use of transport capacity and defensive driving training help us reduce the number of kilometres travelled, cut the amount of fuel consumed and bring down the level of transport emissions.

## Greenhouse gas emissions<sup>1</sup>

		2016	2015	2014	2013
<b>Direct greenhouse gas emissions (Scope 1)</b>					
CO <sub>2</sub> emissions <sup>✓</sup>	million t	7.0	7.1	7.3	7.2
of which by HyCO plants <sup>✓</sup>	million t	4.7	4.0	4.0	4.2
Linde transport fleet <sup>2 ✓</sup>	million t CO <sub>2</sub> e	0.80	0.78	0.88	0.49
Other greenhouse gases <sup>3 ✓</sup>	million t CO <sub>2</sub> e	1.8	1.7	1.5	1.5
Total <sup>✓</sup>	million t CO <sub>2</sub> e	9.6	9.6	9.7	9.2
<b>Indirect greenhouse gas emissions (Scope 2)</b>					
CO <sub>2</sub> emissions <sup>✓</sup>	million t	16.2	15.4	15.0	13.0
of which by air separation plants <sup>✓</sup>	million t	14.7	13.7	13.5	11.8
Total scope 1 and 2 emissions <sup>✓</sup>	million t CO <sub>2</sub> e	25.8	25.0	24.7	22.2
Emissions per million EUR sales	t CO <sub>2</sub> e	1,522	1,440	1,449	1,333
Emissions per Linde employee	t CO <sub>2</sub> e	432	418	377	350
<b>Other indirect greenhouse gas emissions (Scope 3)</b>					
Business travel <sup>4 ✓</sup>	thousand t CO <sub>2</sub> e	58.7	68.5	72.9	81.0

✓ Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> From 2015, this figure also includes greenhouse gas emissions generated by Linde's transport contractors. The 2014 figure has been recalculated.

<sup>3</sup> This includes greenhouse gases specified in the Kyoto Protocol: methane (CH<sub>4</sub>), nitrous oxide (laughing gas, N<sub>2</sub>O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). In 2014, Linde has refined the determination method of the indicator for these GHGs to include additional emitters and emission sources. The reported figure for 2013 was recalculated based on this new method.

<sup>4</sup> Since 2014, we also include the Radiative Forcing Index (RFI) to calculate emissions from business travel. Thereby, we take into account the higher impact of air travel on the greenhouse effect. Emissions for the year 2013 have been recalculated accordingly.

## Energy consumption

As an energy-intensive company, we require a reliable and competitively priced energy supply and we are constantly optimising the energy efficiency of our production processes. The increase in our energy consumption over the past few years is mainly due to the expansion of our business operations. Other factors which may have an impact on our energy consumption are fluctuations in product demand and capacity utilisation at individual plants. Our energy consumption increased by around 2 percent in the reporting year compared with the prior year.

In 2016, we took part in the European Union's Emissions Trading System at ten of our hydrogen and synthesis gas production sites. There were around 1.2 million tonnes of CO<sub>2</sub> emissions from these plants during the year. Our Group was allocated emissions allowances for around 0.9 million tonnes of CO<sub>2</sub> in 2016. Further certificates were purchased.

### Energy consumption (in million MWh)<sup>1</sup>

	2016	2015	2014	2013
Electricity consumption <sup>✓</sup>	27.5	26.8	26.2	23.4
of which by air separation plants <sup>✓</sup>	24.8	23.9	23.5	20.7
Natural gas consumption <sup>✓</sup>	39.4	39.5	39.5	36.4
of which by HyCO plants <sup>✓</sup>	29.3	25.4	24.9	23.0
Consumption of other energy sources <sup>2</sup> <sup>✓</sup>	12.8	12.1	12.2	14.8

<sup>✓</sup> Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> Examples of other energy sources are heating oil, biofuel energy, propane, butane, thermal energy and diesel fuel. From 2015, this figure also includes diesel consumption by Linde's transport contractors. The 2014 figure has been recalculated.

In Europe, we worked during the reporting year on the implementation of the provisions of the European Union's Energy Efficiency Directive. These include among other issues regular energy audits for companies at production sites, distribution sites and offices, or alternatively energy certification in accordance with ISO 50001. Since 2012, around 85 percent of Linde Gas production sites in Germany have been certified in accordance with this global standard. In addition, in the course of 2016, filling plants in Germany were among the facilities to be certified for the first time in accordance with ISO 50001.

We review the use of renewable energy, the current level of which largely reflects the regional energy mix available in each country. In Germany, we extract our medical oxygen CONOXIA<sup>®</sup> using only electricity from renewable energy sources. In 2016, this covered 40,000 MWh of our electricity consumption.

## Products for energy efficiency and climate protection

We offer our customers a variety of solutions to make production and energy generation processes more efficient and more environmentally friendly. Our gases and technologies help our customers reduce emissions to a large extent. A particularly high proportion of this reduction in emissions is generated by the use of oxygen in a special combustion process and the use of hydrogen in the desulphurisation of fuel. In oxyfuel plants, which are used for example by the glass and steel industries, the combustion air is enriched with oxygen, resulting in much more efficient combustion than if ambient air were used. Our hydrogen is utilised by the oil industry in fuel desulphurisation. Combining desulphurised fuel with a filter significantly cuts emissions of soot particles, which like CO<sub>2</sub> contribute to the greenhouse effect. The use of these two technologies alone enables our customers to avoid around 30 million tonnes of CO<sub>2</sub> emissions per annum.

We are also researching ways to recycle and store CO<sub>2</sub>. Since 2015, we have been testing new processes for the production of synthesis gas using CO<sub>2</sub> at our own pilot facility on the Pullach site in Germany. Through a joint venture in the Netherlands, we are supplying more than 580 greenhouses with 400,000 tonnes of CO<sub>2</sub> from an oil refinery. Recycling this greenhouse gas means that it is possible to avoid CO<sub>2</sub> emissions equivalent to the annual CO<sub>2</sub> emissions from a Western European city.

For a customer in Saudi Arabia, we built a CO<sub>2</sub> purification and liquefaction plant during the reporting year. This processes around 1,500 tonnes of carbon dioxide per day so that it can be reused in the petrochemical industry. This results in a reduction in CO<sub>2</sub> emissions of around 500,000 tonnes per annum.

Our products are also deployed in other parts of the mobility sector to reduce environmental pollution. The use of liquefied natural gas (LNG) or hydrogen significantly reduces emissions from cars, buses, trucks and ships. We are not only investing in the development of efficient hydrogen refuelling technology but are also cooperating with partners to set up a supply infrastructure.

### MORE ABOUT

- Innovation and products
- Key material topics
- Collection of data
- Products for the environment
- Regulatory risks (Financial Report p. 92 f.)
- Climate risks in the Group risk management (Financial Report p. 94)

# AIR EMISSIONS

GRI G4-EN19, G4-EN20, G4-EN21, G4-EN24

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We monitor emissions worldwide not only of greenhouse gases but also of air pollutants in accordance with relevant local legislation. The operation of our air separation plants results in hardly any direct emissions to air. Other production processes, for example in hydrogen plants and steam boilers, can result in emissions of inorganic gases such as carbon monoxide (CO), sulphur oxides (SO<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>). Volatile organic compounds (VOCs) are mainly released during the coating and cleaning of metals used for instance in gas cylinders, storage tanks and plant components.

## Emissions to air (in tonnes)<sup>1,2</sup>

	2016	2015	2014	2013
VOC (volatile organic compounds)✓	531	598	657	92
NH <sub>3</sub> (ammonia) <sup>3</sup> ✓	45	73	165	12
CO (carbon monoxide)✓	2,634	3,213	3,325	2,177
NO <sub>x</sub> (nitrogen oxides)✓	4,879	6,443	6,762	6,273
SO <sub>x</sub> (sulphur oxides) <sup>4</sup> ✓	685	708	447	122

✓ Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> In 2014, Linde has refined the determination method for emissions to the air. Where available, measurements were used for the new methodology. For production sites for which no measurements were available, we estimated the figures. Where possible, the reported figures for 2013 were recalculated based on these new methods. The determination method for VOC emissions could not be applied retroactively. Therefore, the values for this indicator are not comparable for the years 2013 and 2014.

<sup>3</sup> The determination method for ammonia was revised during 2015. Reported ammonia emissions include uncontrolled releases to the atmosphere and since 2015 have been extended to include controlled releases to abatement systems at certain sites. The figure for 2014 has been restated accordingly.

<sup>4</sup> The figure for SO<sub>x</sub> emissions disclosed in the Corporate Responsibility Report 2015 was too low and has been restated retrospectively.

We work together with our customers and with scientific and research partners to devise solutions which will minimise emissions to air. Our LoTOx™ technology is being used for example in the chemical industry to capture and store nitrogen oxides and other pollutants from waste gases arising from combustion processes. By the end of 2016, we had installed more than 30 such systems in customers' plants around the world, especially in the United States and China. With these systems, we enable our customers to avoid more than 17,000 tonnes of NO<sub>x</sub> emissions per annum. Our COROX® LowNOx technology also enables us to reduce nitrogen oxide emissions in the chemical industry through the use of oxygen.

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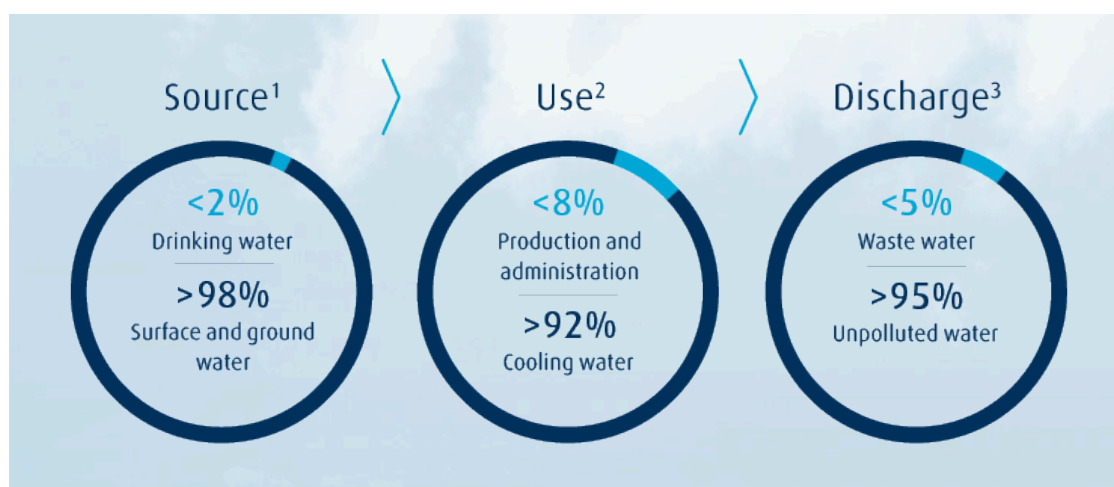
# WATER

GRI G4-EN8, G4-EN9, G4-EN10, G4-EN11, G4-EN12, G4-EN13, G4-EN22, G4-EN24, G4-EN26

 7, 8, 9

We use water as efficiently as possible and work to ensure that our emissions to water are constantly being reduced. More than 90 percent of our annual water requirement is used in cooling processes. Most of this cooling water is just heated, and can subsequently be fed back into the water system without the need for treatment. We take care to ensure that the temperature reached does not pose any risk to the surrounding ecosystem. The rest of the water we use is applied to production, used as a source of steam or in office buildings. We employ closed-loop systems as a means of reducing our water consumption, as these enable water to be used several times.

## Water balance



- <sup>1</sup> More than 98% of the water used at Linde's sites comes from surface water, sea water or ground water sources which do not meet drinking water quality standards. Less than 2% of the demand at Linde's sites is covered by water which meets drinking water quality standards.
- <sup>2</sup> More than 92% of the water used in Linde's processes is used for cooling purposes, including once-through cooling water and sea water. Less than 8% of the water used in Linde's processes is consumed in the process or discharged into the sewerage system after use.
- <sup>3</sup> More than 95% of the water discharged is unpolluted cooling water which can be fed back into the water system without need for further treatment. Less than 5% of the discharged water is piped to a waste water treatment plant or facility: e.g. boiler blowdown, purge from cooling towers, and sanitary foul water.

Total water use in 2016 was 716 million cubic metres (2015: 681 million cubic metres). Of this amount, water consumption excluding once-through water was 54.8 million cubic metres (2015: 52.6 million cubic metres). The amount of waste water at all our locations worldwide in 2016 was 13.1 million cubic metres (2015: 13.8 million cubic metres). The increase in our water use over the past few years reflects the expansion of our business operations. Fluctuations in demand for our products and changes in capacity utilisation at individual plants may also have an impact on our water use. In addition, warm weather conditions may increase our use of cooling water. We also measure emissions of phosphates, nitrates and organic compounds to water in accordance with local regulatory requirements.

## Water<sup>1</sup>

		2016	2015	2014	2013
Water use ✓	million m <sup>3</sup>	716	681	682	681
of which ground and surface water ✓	%	98.7	98.6	98.5	98.6
of which drinking water ✓	%	1.3	1.4	1.5	1.4
Total water consumption <sup>2</sup> ✓	million m <sup>3</sup>	54.8	52.6	50.7	44.5
of which industrial and process water ✓	million m <sup>3</sup>	45.3	42.8	40.8	34.8
of which drinking water ✓	million m <sup>3</sup>	9.5	9.8	9.9	9.7
Waste water ✓	million m <sup>3</sup>	13.1	13.8	13.2	13.8

✓ Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> Water consumption relates to drinking water and industrial water used. Once-through water is drawn from a natural or other sources, solely warmed and ultimately piped back to the original source at a temperature not posing any risk to the surrounding ecosystem.

## Initiatives for efficient use of water

In 2016, we reviewed water supplies at our key production sites worldwide for the first time on the basis of the criteria set out by the World Resources Institute. Based on these criteria, 9 percent of our sites are in regions which experience water scarcity. The measures we are taking to optimise the use of water and cooling water systems focus in particular on those regions. At four sites in Eastern Europe, Asia and South America, potential savings were identified in 2016 of around 440,000 cubic metres of water, which would lead to cost savings of around EUR 70,000 annually. Furthermore, during the reporting year, we conducted information campaigns in Africa and in the Middle East on the economical use of water, which reached more than 3,000 of our employees.

## Emissions to water (in tonnes)<sup>1,2</sup>

	2016	2015	2014	2013
Chemical oxygen demand (COD) ✓	1,561	1,425	1,585	2,157
Biochemical oxygen demand (BOD) ✓	511	496	544	163
Nitrates ✓	339	335	295	89
Phosphates ✓	45	47	39	3

✓ Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> In 2015, we have further improved the determination method for emissions to water (COD, BOD, nitrates, phosphates) applying measurement and extrapolation models. Although there are inherent limitations by applying this methodology, full measurement of these emissions by all Linde sites is considered economically not viable. The reported figures of the water emission indicators of the Linde Group therefore serve as an approximation. The figures for 2014 have been restated accordingly.



## Products for water protection

Our gases and technologies are used to eliminate harmful substances in drinking water and bodies of water and to treat waste water. They also enable us to support our industrial customers in meeting demanding environmental regulations. With the help of Linde's Solvcarb® process, our customers were able to bring around 850 million cubic metres of water in just six countries up to drinking water quality in 2016. During the reporting year, our Solvox® process was used for example in Australia to enrich the water of the Canning River in Perth with 260,000 cubic metres of oxygen, thus contributing to the conservation of the surrounding ecosystem. The process is also being used successfully in the desalination of rivers. In Norway, we received an award for a new Solvox solution for supplying oxygen to sea cages used in fish farming in 2016.

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- Innovation and products
- Technologies for water

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# WASTE

GRI G4-EN23, G4-EN25

 7, 8, 9

We keep our consumption of resources as low as possible and are constantly reviewing how waste can be avoided. Our most common waste products are oil and oleaginous materials, waste which contains metal, and gas cylinders which have reached the end of their useful life. By using closed-loop systems for products, we increase both material efficiency and resource efficiency and cut the volume of waste produced. One example is lime slurry, a by-product of acetylene production, which can be used in other industries without any treatment being required. We dispose of any waste which cannot be recycled in an environmentally sound manner. We comply with local regulations and classify our waste as hazardous or non-hazardous in accordance with relevant legislation in the country in which we are operating. We focus in particular on hazardous waste when devising measures to achieve further reductions in waste. As the amount of waste at different sites depends on the type of business operations being carried out there, our waste management objectives are based on regional requirements. When making a multi-year comparison of the volume of waste produced, there can be significant fluctuations, as the volume of waste is dependent on the extent of our construction operations. The overall amount of waste fell in 2016 compared with 2015, as less non-hazardous waste was produced. During the reporting year, we achieved a recycling rate of about 33 percent (2015: 39 percent) for the waste we produced around the world.

## Waste and recycling<sup>1</sup>

		2016	2015	2014	2013
Total waste <sup>✓</sup>	thousand t	63.6	66.1	94.1	124.9
Non-hazardous waste <sup>✓</sup>	%	63	66	76	76
Hazardous waste <sup>✓</sup>	%	37	34	24	24
Recycled waste <sup>✓</sup>	%	33	39	56	65
Incineration waste <sup>2</sup> <sup>✓</sup>	%	27	21	15	14
Landfill waste <sup>✓</sup>	%	21	22	19	10
Other disposal methods <sup>✓</sup>	%	19	18	10	11

<sup>✓</sup> Assured by KPMG

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> Incineration waste is partly used for heat recovery.

Since 2009, we have been involved in a joint venture with a Californian waste service provider in the US to extract fuel and energy from waste for around 8,500 households. Around 2.3 million tonnes of waste is recycled annually, which is sufficient to provide landfill gas to power 485 refuse trucks, replacing just under 9.5 million litres of diesel fuel per year.

We also offer our customers numerous solutions to help them avoid or recycle waste. One of our customers in the chemical industry, for example, uses our hydrogen to treat around 150,000 tonnes of waste oil per annum, saving around 130,000 tonnes of CO<sub>2</sub> every year as a result.

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GRI G4-EN11, G4-EN12, G4-EN13, G4-EN14



When planning new sites, we use standardised processes to examine the impact on the environment. In our efforts to protect ecosystems, we also follow internationally recognised guidelines, such as the Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment issued by the United Nations. Our evaluation considers ecologically sensitive areas, bodies of water and the impact on plants and animals. Most of our sites are located in industrial zones or business parks. If these sites are directly adjacent to protected areas or other sensitive habitats, we seek to minimise any potential negative impact we might have on such areas.

In 2016, we conducted a review of more than 600 of our production sites. The aim of the review was to establish whether any of these sites were located in the vicinity of international protected areas. None of the sites investigated lay within or in the vicinity of a particularly sensitive protected area as defined by the International Union for Conservation of Nature.

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# EMPLOYEES

GRI G4-10, G4-13, G4-EC7, G4-EC8, G4-LA1



6



Qualified and committed employees are important success factors for Linde. Our personnel strategy therefore focuses on winning and promoting talent and on providing attractive working conditions.

At 31 December 2016, we employed 59,715 staff (2015: 59,774). During the reporting year, 12.1 percent left the Group at their own request (2015: 10.7 percent). This turnover rate varied by region, from 2.0 percent in Southern Europe to 26.9 percent in North America. The overall staff turnover rate, which includes employees retiring and being dismissed as well as employees reaching the end of temporary contracts, was 20.8 percent (2015: 18.4 percent).

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## Employees worldwide<sup>1</sup>

		2016	2015	2014	2013
Group	<i>as of Dec. 31</i>	59,715	59,774	65,591	63,487
Gases Division		52,907	52,395	53,436	51,536
EMEA		20,309	21,067	21,779	21,544
Asia/Pacific		11,343	11,533	12,175	12,122
Americas		21,255	19,795	19,482	17,870
Engineering Division		6,432	7,038	7,330	6,997
Other activities		376	341	4,825	4,954
Employees in production		20,466	21,194	21,684	20,200
Employees in sales, marketing and distribution		27,293	27,021	31,851	31,778
Employees in research and development		345	348	390	367
Employees in administration		11,611	11,211	11,666	11,141
Temporary staff	%	8.4	8.8	8.6	6.2
Staff turnover rate <sup>2</sup>	%	12.1	10.7	10.0	9.4
Average length of service	<i>years</i>	9.1	9.1	8.4	8.9

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

<sup>2</sup> Staff turnover rate relates to employees who left the Group voluntarily during the period under review.

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- Key material topics

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# WINNING TALENT

GRI G4-EC7, G4-LA10, G4-LA11

We work with universities and research institutions worldwide to attract qualified students and graduates and to retain them long term. We also provide training opportunities in various technical and commercial areas as well as programmes for trainees. The number of apprentices and trainees as a proportion of the total number of Linde employees was 0.8 percent in 2016 (2015: 0.9 percent), of which 54.7 percent (2015: 52.3 percent) were in non-German companies. In Germany, we offer training in 25 (2015: 21) different professions. During the reporting year, 103 apprentices and trainees were recruited in Germany (2015: 82). In 2016, we took on 36 percent (2015: 50 percent) of one year's cohort of apprentices and trainees in Germany as permanent employees at the end of their vocational training and we offered a further 51 percent (2015: 47 percent) a fixed-term contract. Most of the apprentices and trainees who left us after completing their training are pursuing further studies at school, college or university.

In addition, the new cohort of our European Graduate Programme started in autumn 2016. This programme offers talented young people the opportunity to work in Linde subsidiaries in different countries to gain practical insights into various areas of the Group.

## Employee training<sup>1</sup>

	2016	2015	2014	2013
Employees who attended training opportunities	% 38.2	61.0	66.2	60.3
Average training days per employee	3.7	2.9	3.1	3.0
Average expenditure on training programmes per employee	€ 372	369	350	341
Apprentices and trainees in total workforce	% 0.8	0.9	0.9	0.9
Apprentices and trainees in Germany	% 3.4	3.0	3.2	3.1

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

During the reporting year, we continued to expand our activities aimed at winning talented employees, for example by stepping up our online marketing directed at this target group.

## Professional development

We invested around EUR 8.5 m in 2016 (2015: EUR 13.5 m) in the professional development of our staff. Our professional development offerings are provided through our Linde University programme. These cover such subject areas as personnel management, intercultural communications and diversity. As part of the Group-wide Lean Six Sigma programme, we provide our employees with training to enable them to tap into improvement potential in all areas of the Group. In 2016, training courses for Lean Six Sigma Black Belts were provided in Europe and Asia. In addition, we delivered two methodology training programmes for innovation project managers in Europe for the first time.

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We continued during the year to apply our globally standardised succession planning process. In the course of this process, discussions take place about the performance and potential of employees. Individual development plans are also agreed. This is how we seek to ensure that vacancies for the most important positions are duly filled.

In 2016, the first employees also completed our Future Manager Programme. This programme targets employees who have the potential to assume their first management position. It was launched during the year in the EMEA region. We also offer programmes designed to prepare employees for management roles in many other regions.

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[➤ Linde Careers on Facebook](#)

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# DIVERSITY AND EQUAL OPPORTUNITIES

GRI G4-10, G4-34, G4-38, G4-EC6, G4-LA12, G4-LA13, G4-HR3



6

As a group with global operations, we rely on employees who understand local markets and customers, and who are able to apply their experience and their different perspectives to enrich the work of their team. At 31 December 2016, our workforce comprised employees from 135 countries, while 67 nations were represented in the German companies alone. The proportion of senior managers from countries other than Germany was 67.5 percent in 2016. During the reporting year, around 190 of our employees were sent on secondment to subsidiaries abroad.



Diversity is one of the four values set out in the Linde Spirit, which applies to all employees around the world. The Linde Competency Model, which is based on it, is used by us in most countries in the evaluation and training of managers.

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## Diversity<sup>1</sup>

		2016	2015	2014	2013
Staff up to 30 years old	%	17.1	17.5	18.4	18.2
Staff between 31 and 50 years old	%	57.9	58.3	57.5	58.0
Staff over 50 years old	%	25.0	24.2	24.1	23.8
Nationalities of employees in Germany		67	64	65	65
Non-German nationalities among senior managers in Germany	%	67.5	67.3	71.0	72.9
Proportion of female employees					
in total workforce	%	32.5	30.7	28.7	27.3
in Germany	%	23.8	25.4	25.4	25.9
in senior management positions	%	16.2	14.5	13.9	13.2
in the Executive Board	%	0	0	0	0
in the Supervisory Board	%	25.0	25.0	16.6	16.6
Severely disabled employees (Germany)	%	3.4	3.6	3.4	3.5

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

An important priority in our actions to promote diversity is to increase the proportion of women in management positions. We have set ourselves the target of increasing the proportion of women in the first management tier below the Executive Board to 14 percent by mid-2017 and 18 percent by mid-2022. At 31 December 2016, the proportion of female senior managers in this tier was already around 16 percent (2015: 11 percent). In the second management tier below the Executive Board, we are aiming for the proportion of women to be at least 17 percent by mid-2017 and 22 percent by mid-2022. This figure was around 18 percent at 31 December 2016 (2015: 16 percent). In order to meet these targets, the Linde Executive Board is supporting various measures including employee initiatives. In Europe, Asia and Australia, for example, we undertook numerous activities in 2016 which seek among other things to encourage potential female executives, such as networking events, workshops and a mentoring programme. In accordance with statutory regulation, we have also set ourselves targets for the proportion of women on the Supervisory Board and Executive Board.

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- Strategy for sustainability
- Supervisory Board Linde AG

# WORK-LIFE BALANCE

GRI G4-LA2, G4-LA3

We help our employees achieve a better work-life balance by providing a variety of opportunities. In particular, these include flexible working models such as flexitime, part-time work and teleworking. In 2016, flexible working and teleworking were introduced for example in Middle Eastern countries and in Singapore. The proportion of the total workforce working part-time during the reporting year was 2.5 percent (2015: 1.7). In Germany, 454 employees took parental leave in 2016 (2015: 434), 42 percent of which were men (2015: 42 percent).

## Work-life balance<sup>1</sup>

		2016	2015	2014	2013
Part-time employees	%	2.5	1.7	2.1	1.9
Employees on parental leave (Germany)		454	434	369	344

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

We also focus on supporting employees who are reliant on childcare or have a family member requiring care, and on providing assistance to employees during periods of poor health or social hardship. The measures we take are designed to suit the specific local situation and demands.

Another focus area is promoting the physical and mental health of our employees. We provide advice on coping with family crises and addiction problems and drive initiatives designed to prevent illness. One such instance was in countries in the Middle East region, where 2016 saw the introduction of regular medical check-ups, additional health insurance and in-house sports activities.

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GRI G4-37, G4-49, G4-LA4, G4-LA5, G4-LA8, G4-LA9, G4-HR4



3

We encourage our employees to contribute their knowledge and ideas to the Group to support improvements and innovations. Against this background, we have already conducted a number of global employee surveys, most recently in 2014. In many countries around the world, we award employees and teams who have demonstrated particular commitment to our corporate objectives and values. We granted prizes for outstanding performance, for example, to employees in Southern Europe, East Asia, Australia, the UK, as well as North America, Central America and South America in the reporting year.

In 2016, the first Linde Global Innovation Challenge took place. We called upon all our employees worldwide to submit their ideas for innovations – especially ideas which will improve the quality of life, environmental protection and resource efficiency, and will lead to more efficient processes. Those employees who did not submit ideas themselves could take part in online polls and discussions and contribute their expertise. In total, 1,350 ideas were received. The teams of finalists presented their projects at the Linde Technology Day under the theme entrepreneurial spirit. Around 200 company experts from around the world then voted to select the winning team.

## Dialogue with employee representatives

Linde strives to work together with employee representatives and trade unions based on partnership and trust, aiming to reconcile the interests of the Group and the workforce. Linde's system of employee representation in Germany is two-tiered, consisting of a central works council for the Group as a whole and works councils in the decentralised units. Cross-border issues are dealt with by the European Works Council, which currently has 28 members and protects the rights of employees in Europe to information, consultation and advice. In many other countries, there are regional-level works councils or employee interest groups, with which Linde cooperates constructively.

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→ Engagement with stakeholders

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# REMUNERATION AND SOCIAL BENEFITS

GRI G4-11, G4-51, G4-52, G4-EC5, G4-EC7, G4-EC8, G4-LA2, G4-LA13



The remuneration package of our employees comprises a salary in line with the market as well as variable remuneration components depending on the position of the employee within the Group. We also offer our staff various additional benefits such as occupational pensions and contributions towards health insurance or medical screening. These benefits reflect regional conditions and local competition. Personnel expenses in 2016 totalled EUR 3.724 bn (2015: EUR 3.829 bn), with EUR 3.185 bn (2015: EUR 3.177 bn) attributable to salaries (including social security contributions) and EUR 248 m to pensions (2015: EUR 278 m).

We use a Group-wide performance evaluation system to support fair staff appraisals. This system includes for example performance evaluations which are binding for managers. We provide our managers with training to enable them to deliver fair and transparent appraisals. Managers' pay is based in part on the extent to which Group targets and the employees' individual targets have been achieved. Depending on the business area, sustainability targets such as safety and diversity may also be relevant to the calculation. Senior managers also participate directly in the company's growth in value through share option schemes. In 2016, managers below Executive Board level invested in 25,371 Linde shares via the schemes (2015: 21,134 shares). For each of these shares, the participants are entitled to an additional Linde share on the expiry of the four-year qualifying period.

Over the past few years, we have paid special attention to fair remuneration for female and male employees in similar positions. When we have conducted analyses of remuneration and salary increases in a number of different regions, we have not identified any significant differences for comparable positions.

## Remuneration and social benefits<sup>1</sup>

		2016	2015	2014	2013
Personnel expenses	€ bn	3.724	3.829	3.536	3.423
Pension costs	€ million	248	278	293	281
Staff covered by collective wage agreements	%	42.3	41.2	46.5	45.6
Retired employees receiving pensions from Linde		28,722	29,116	30,941	31,006

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation.

Employees in more than 50 countries had access to occupational pensions and healthcare benefits in 2016. Around 80 percent of our employees were members of an occupational pension scheme. In the reporting year, 25,116 employees had a claim to an occupational pension from defined benefit plans (2015: 26,088). A further 16,459 former employees had a vested claim to a company pension (2015: 16,416). In total, 28,722 pensioners drew an occupational pension from the Group (2015: 29,116).

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- [Remuneration of the Executive Board](#)  
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# HUMAN RIGHTS AND LABOUR STANDARDS

GRI G4-15, G4-56, G4-EC5, G4-LA16, G4-HR5, G4-HR6, G4-HR9, G4-HR12



1, 2, 3, 4, 5, 6

We commit to the principles of the UN Human Rights Charter, the core labour standards of the International Labour Organisation (ILO), and other international obligations and industry standards. For our human rights management, the UN Guiding Principles on Business and Human Rights are a source of guidance.

## Guidelines and topics

Our Group guidelines take human rights into account. These guidelines include our Code of Ethics, purchasing guidelines and purchasing agreements, the Integrity Line policy and Group risk management. In The Linde Group position on human rights adopted in 2014, we describe the processes which confirm our commitment, covering the following topics:

- safety and health protection
- the prevention of discrimination and harassment in the workplace
- equal opportunities and equal treatment
- fair pay
- compliance with regulations on working hours
- the right to privacy
- freedom of association and freedom of assembly
- the exclusion of any form of child labour or forced labour, including human trafficking

Our human rights management focuses in particular on the protection of and on preventing discrimination against vulnerable groups such as employees under 18 years of age or representatives of ethnic minorities. In terms of equal opportunities, we are looking especially at the promotion of women. As far as safety is concerned, we pay particular attention to the protection of employees working in production, as well as to employees and contractors who work for Linde on construction sites or who transport our products.

## Implementation and monitoring

Risk analyses provide us with information as to which topics are most relevant to Linde in which business areas or in the supply chain. In addition, we conduct an annual due diligence process at country level to establish whether procedures have been set up to ensure compliance with our guidelines on the protection of human rights and social standards. Moreover in 2016, we conducted more than 80 audits at our business locations which covered social topics.

To detect potential weaknesses, we also evaluate the information provided to the Integrity Line. Our employees and external stakeholders can use this service to report any breaches of the Group's commitment. In 2016, around 31 percent of the reports received by the Integrity Line related to human resources issues (2015: 26 percent). We investigate any deviations or breaches. If necessary, we take corrective action. The measures taken might include training, coaching, the issuing of verbal and written warnings or dismissals.

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- Strategy for sustainability
- Corporate governance
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- Linde Integrity Line

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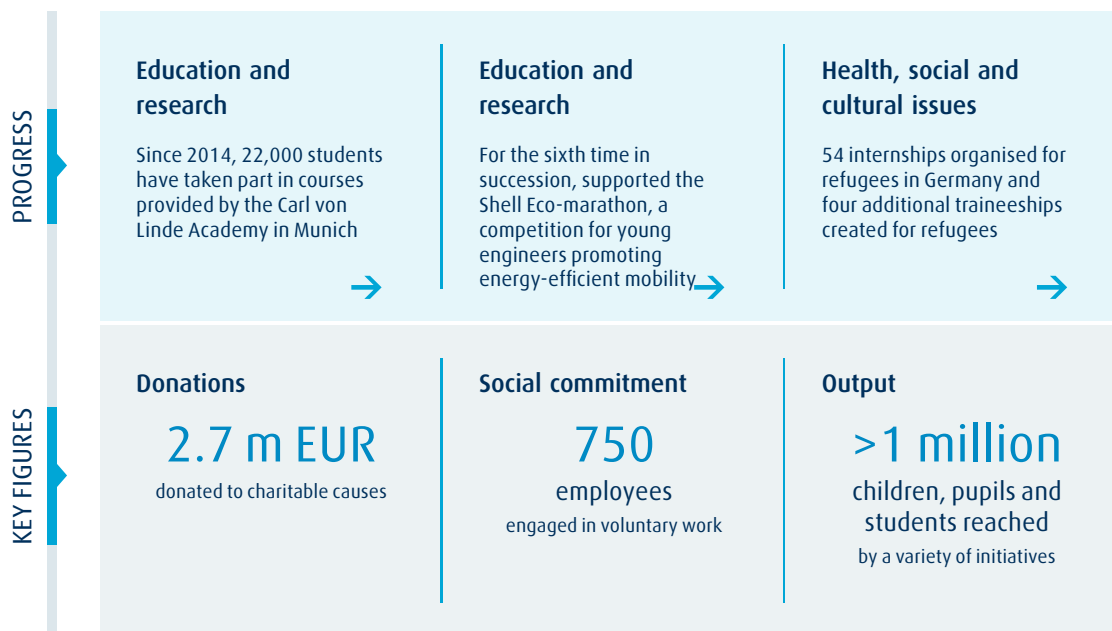
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# SOCIAL COMMITMENT

GRI G4-16, G4-EC1, G4-EC7, G4-EC8, G4-SO1, G4-SO6



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We are involved in numerous projects near our business locations worldwide. Our main focus is on education and research. In addition, we support a variety of initiatives relating to safety, environmental protection, health, and social and cultural affairs. Cross-regional involvement in such projects is managed by our Corporate Centre, while local measures are coordinated by employees in the region concerned. In 2016, we provided funding of around EUR 7.8 m for projects and initiatives worldwide, of which around EUR 2.7 m was donated by the Group. As a result of our social commitment during the year under review, we were able to reach more than 1 million children, school pupils and students. We support the voluntary work of our employees in various ways, which include granting staff time off work and in some regions matching employees' donations. In 2016, we supported over 750 of our employees around the world in such ways.

## Education and research

We support technical and science education projects and educational institutions in many countries. In 2004, we provided foundation capital of more than EUR 8 m to set up the Carl von Linde Academy at the Technical University of Munich. This institution offers engineering and science students the opportunity to acquire key skills which complement their academic subjects, covering areas such as business ethics, risks associated with innovation, and cultural competence. By the end of 2016, around 22,000 students had taken part in courses provided by the Academy.

### Competitions and scholarships

As part of our commitment to educational and research projects, we encourage young people to take part in technology and science competitions and we award selected scholarships to school pupils and young scientists. In 2016, for the sixth consecutive year, we sponsored the Shell Eco-marathon, a competition for young engineers which takes place every year in Europe, the Americas and Asia and promotes energy-efficient mobility. Once again, we assumed responsibility for supplying the hydrogen to fill the fuel cell vehicles used in the competition. Our engineers supported the event organisers and participants – students from vocational schools and universities all over the world – through their technical expertise. During the reporting year, a competition for young engineers was also held in China. More than 20 of our employees helped a team of pupils taking part in a technology

competition called FIRST (For Inspiration and Recognition of Science and Technology) to build a robot. Around 2,000 young people in total participated in the competition.

Through our REALfund initiative, we awarded three research grants in 2016 to scientists in Germany and the United States. The projects selected have the potential to make a significant difference to the lives of patients with chronic respiratory disorders.

### Support for training

A well-trained and skilled workforce is crucial to the success of Linde as a technology group. In various regions, we are therefore keen to promote a number of projects which spark an interest in mathematics, IT, science and technology in children, adolescents and young adults.

In Finland, we are a founding member of Heureka, the Finnish Science Centre, which helps around 300,000 children and adults every year to learn more about the world of science and technology in an entertaining way. In 2016, we provided the centre with liquefied nitrogen and dry ice for its demonstrations of gases in everyday life.

Our production sites were also used in many countries for teaching during the year. In the UK for example, seven school classes visited a production site for air separation plants. In addition, employees gave demonstrations about the physical properties of liquefied nitrogen and oxygen to schools and told the children how they were used in everyday life. More than 500 children took part in the two activities.

In several countries, we support welding technology schools and training centres by providing the necessary equipment and expertise – especially in regions with a low average income. In South Africa, for example, we provided the necessary equipment in 2016 to open a welding technology school which focuses on training unemployed young people.

### Safety and environmental protection

Safety is a highly relevant topic for Linde. In several countries in 2016, we supported road safety initiatives, most of which were aimed at schoolchildren. For example since 2004, when we were one of the founding members of a road safety initiative in Australia and New Zealand, we have provided safety training for over 400,000 young people in those countries learning to drive. In 2016, around 50,000 school pupils took part in the scheme. In Malaysia, working together with the country's road safety ministry and with other companies, we launched a three-year nationwide campaign aimed at motorcyclists. Motorcyclists are involved in more than 60 percent of all traffic accidents on Malaysia's roads. The campaign promotes careful riding and the use of protective clothing.

In some countries, our Group and our employees are also active in environmental protection, taking part for example in reforestation projects in Asia.

### Health, social and cultural issues

As a producer of medical gases, we are particularly committed to the issue of health, especially pulmonary and respiratory health. We therefore support a selection of scientific and medical institutions and charitable organisations in various countries, such as the UK, Spain, Portugal, the United States and Australia.

In many countries, we participate in selected projects which have a direct and long-term impact on local living conditions for people. For many years we have, for example, been supporting projects for children in South Africa via an employee programme which comprises cash donations, donations in kind and voluntary work. One of the ways we can help every year is by donating propane gas. In 2016, we donated propane gas for around 35 nursery schools and schools, so that more than 30,000 children could be given a hot meal. Other projects invest in training for young people.



At our Corporate Centre, the focus in 2016 was on the promotion of projects supporting refugees fleeing war and crisis zones. We also organised 54 internships for refugees in Germany in 2016. Four of these interns were taken on as trainees. We created these traineeships in addition to our regular traineeships. In 2016, we also provided funds for disaster relief: for example, for the victims of the flood in the US state of Louisiana and the victims of the earthquake in Ecuador.

We act as a partner for a variety of cultural events and institutions near our business locations. In Munich, home to our Corporate Centre, we are a founding member of the Deutsches Museum Future Initiative, the aim of which is to modernise the largest technology museum in the world. By 2018, we will have provided financial backing of EUR 5 m for this cause. We also promote quality of life at our business locations. This is demonstrated by our support for selected opera houses and cultural events.

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- ✓ Included in the group management report of the Annual Report 2016
- ✓ Assured by KPMG

## Financials, Compliance and Innovation<sup>1</sup>

### Financial indicators✓

		2016	2015	2014	2013	2012
<b>Share</b>						
Closing price	€	156.10	133.90	154.20	152.05	132.00
Year high	€	163.55	193.85	157.30	153.90	136.15
Year low	€	115.85	128.05	139.15	128.60	114.20
Market capitalisation (at year-end closing price)	€ million	28,978	24,857	28,625	28,219	24,445
No. of shares (at 31 December)	000s	185,638	185,638	185,638	185,588	185,189
Cash dividend per share	€	3.70	3.45	3.15	3.00	2.70
<b>Group</b>						
Revenue	€ million	16,948	17,345	17,047	16,655	15,833
In Germany	%	7.2	7.5	7.4	7.9	8.2
Outside Germany	%	92.8	92.5	92.6	92.1	91.8
Operating profit <sup>2</sup>	€ million	4,098	4,087	3,920	3,966	3,686
Operating margin	%	24.2	23.6	23.0	23.8	23.3
EBIT	€ million	2,075	2,029	1,885	2,171	2,055
Profit for the year	€ million	1,206	1,133	1,162	1,430	1,341
Capital expenditure (excluding financial assets)	€ million	2,004	2,036	1,954	2,268	2,038
Equity ratio	%	44.0	43.7	41.4	41.5	39.8
Return on capital employed (ROCE)	%	9.4	9.5	9.5	9.7	10.2

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# Financials, Compliance and Innovation<sup>1</sup>

## Financial indicators ✓

		2016	2015	2014	2013	2012
Personnel expenses	€ bn	3.724	3.829	3.536	3.423	3.117
Personnel expenses (per employee)	1,000 €	62.4	64.1	53.9	53.9	49.7
Pension costs	€ million	248	278	293	281	241
Donations	€ million	2.7	2.4	2.8	2.7	2.8
<b>Gases Division</b>						
Revenue	€ million	14,892	15,168	13,982	13,971	13,214
Operating profit <sup>2</sup>	€ million	4,210	4,151	3,835	3,846	3,566
Operating margin	%	28.3	27.4	27.4	27.5	27.0
<b>Engineering Division</b>						
Revenue	€ million	2,351	2,594	3,074	2,879	2,561
Operating profit <sup>2</sup>	€ million	196	216	300	319	312
Operating margin	%	8.3	8.3	9.8	11.1	12.2

## Compliance

		2016	2015	2014	2013	2012
Contacts Integrity Line		348	300	734	393	309
Investigations as a result of reports to the Integrity Line		106	140	127	88	77
of which referring to personnel topics	%	30.1	25.7	26.8	36.4	42.9
of which referring to potential offences against property	%	30.7	26.4	32.3	33.0	24.7
of which referring to potential discrimination	%	1.3	2.8	1.6	2.3	2.6
of which referring to potential conflicts of interest	%	15.0	13.6	9.4	12.5	15.6

## Innovation ✓

		2016	2015	2014	2013	2012
Expenditure for research and development	€ million	121	131	106	92	101
Employees in the research and development field		345	348	390	367	385
New patents filed		360	287	260	263	269

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# Safety<sup>1</sup>

## Production sites with occupational health and safety management system

	2016	2015	2014	2013	2012
Production sites where occupational health and safety audits have been conducted ✓	48.9	51.7	57.4	58.1	62.4
Number of conducted occupational health and safety audits	706	687	749	790	769
Production sites certified to OHSAS 18001 ✓✓	✓✓ 17.1	✓✓ 16.5	✓✓ 15.7	✓✓ 17.8	✓ 17.7

## Occupational health and safety

	2016	2015	2014	2013	2012
Workplace accidents of employees with at least one day of absence ✓✓	269	358	318	304	324
Workplace accidents of contractors with at least one day of absence ✓	131	151	140	150	155
Workplace accidents with at least one day of absence (employees) ✓✓ <i>per million hours worked</i>	2.2	2.9	2.4	2.3	2.5
Workplace accidents with at least one day of absence (contractors) ✓ <i>per million hours worked</i>	2.2	2.2	1.8	1.7	1.3
Fatal workplace accidents involving employees ✓✓	1	2	2	4	4
Fatal workplace accidents involving contractors ✓✓	1	1	3	6	4
Sick days <i>per employee</i>	5.4	5.6	5.3	4.7	4.7

## Transport

	2016	2015	2014	2013	2012
Distance driven by Linde's transport fleet and its contractors ✓✓ <i>million km</i>	878	857	975	963	969
Serious transport incidents involving trucks <sup>3</sup> ✓✓ <i>per 1 million km</i>	0.105	0.115	0.104	0.139	0.121

# Environmental protection<sup>1</sup>

## Production sites with environmental and quality management system

		2016	2015	2014	2013	2012
Production sites certified to ISO 9001	%	✓✓ 63.0	✓✓ 67.1	✓✓ 72.1	✓✓ 77.9	✓ 79.6
Production sites certified to ISO 14001	%	✓✓ 31.7	✓✓ 31.7	✓✓ 30.5	✓✓ 31.8	✓ 31.8
Production sites where environmental audits have been conducted	%	46.0	42.6	50.0	51.8	54.5
Number of conducted environmental audits		629	586	639	657	661

## Resources consumed

		2016	2015	2014	2013	2012
<b>Energy</b>						
Electricity consumption	million MWh	27.5	26.8	26.2	23.4	23.5
of which by air separation plants	million MWh	24.8	23.9	23.5	20.7	20.8
Natural gas consumption	million MWh	39.4	39.5	39.5	36.4	35.9
of which by HyCO plants	million MWh	29.3	25.4	24.9	23.0	22.8
Consumption of other energy sources <sup>4</sup>	million MWh	12.8	12.1	12.2	14.8	13.4
<b>Water</b>						
Water use	million m <sup>3</sup>	716	681	682	681	632
of which ground and surface water	%	98.7	98.6	98.5	98.6	98.5
of which drinking water	%	1.3	1.4	1.5	1.4	1.5
Total water consumption <sup>5</sup>	million m <sup>3</sup>	54.8	52.6	50.7	44.5	47.4
of which industrial and process water	million m <sup>3</sup>	45.3	42.8	40.8	34.8	38.1
of which drinking water	million m <sup>3</sup>	9.5	9.8	9.9	9.7	9.3
Waste water	million m <sup>3</sup>	13.1	13.8	13.2	13.8	12.5
<b>Resources and materials</b>						
Raw materials and supplies	t	55,590	54,170	52,770	57,750	57,170
Packaging materials	t	3,510	3,160	5,580	3,990	4,765

## Emissions

		2016	2015	2014	2013	2012
<b>Direct greenhouse gas emissions (Scope 1)</b>						
CO <sub>2</sub> emissions ✓✓	million t	7.0	7.1	7.3	7.2	7.6
of which by HyCO plants ✓✓	million t	4.7	4.0	4.0	4.2	4.3
Linde transport fleet <sup>6</sup> ✓✓	million t CO <sub>2</sub> e	0.80	0.78	0.88	0.49	0.50
Other greenhouse gases <sup>7</sup> ✓✓	million t CO <sub>2</sub> e	1.8	1.7	1.5	1.5	0.4
Total ✓✓	million t CO <sub>2</sub> e	9.6	9.6	9.7	9.2	8.5
<b>Indirect greenhouse gas emissions (Scope 2)</b>						
CO <sub>2</sub> emissions ✓✓	million t	16.2	15.4	15.0	13.0	12.8
of which by air separation plants ✓✓	million t	14.7	13.7	13.5	11.8	11.6
Total Scope 1 and 2 emissions ✓✓	million t CO <sub>2</sub> e	25.8	25.0	24.7	22.2	21.3
Emissions per million EUR sales	t CO <sub>2</sub> e	1,522	1,440	1,449	1,333	1,345
Emissions per Linde employee	t CO <sub>2</sub> e	432	418	377	350	339
<b>Other indirect greenhouse gas emissions (Scope 3)</b>						
Business travel <sup>8</sup> ✓	thousand t CO <sub>2</sub> e	58.7	68.5	72.9	81.0	34.1
<b>Emissions to air<sup>9</sup></b>						
VOC (volatile organic compounds) ✓	t	531	598	657	92	109
NH <sub>3</sub> (ammonia) <sup>10</sup> ✓	t	45	73	165	12	11
CO (carbon monoxide) ✓	t	2,634	3,213	3,325	2,177	2,895
NO <sub>x</sub> (nitrogen oxides) ✓	t	4,879	6,443	6,762	6,273	5,556
SO <sub>x</sub> (sulphur oxides) <sup>11</sup> ✓	t	685	708	447	122	391
<b>Emissions to water<sup>12</sup></b>						
Chemical oxygen demand (COD) ✓	t	1,561	1,425	1,585	2,157	201
Biochemical oxygen demand (BOD) ✓	t	511	496	544	163	97
Nitrates ✓	t	339	335	295	89	52
Phosphates ✓	t	45	47	39	3	4

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### Waste and recycling

		2016	2015	2014	2013	2012
Total waste ✓✓	thousand t	63.6	66.1	94.1	124.9	81.5
Non-hazardous waste ✓✓	%	63	66	76	76	70
Hazardous waste ✓✓	%	37	34	24	24	30
Recycled waste ✓✓	%	33	39	56	65	41
Incineration waste <sup>13</sup> ✓	%	27	21	15	14	18
Landfill waste ✓	%	21	22	19	10	26
Other disposal methods ✓	%	19	18	10	11	15

### Environmental incidents

	2016	2015	2014	2013	2012
Environmental complaints	22	14	25	24	14
Reportable environmental incidents	19	13	21	25	29

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# Employees<sup>1</sup>

## Employment structure

		2016	2015	2014	2013	2012
Group ✓	as of Dec. 31	59,715	59,774	65,591	63,487	62,765
Gases Division ✓		52,907	52,395	53,436	51,536	51,405
EMEA ✓		20,309	21,067	21,779	21,544	21,636
Asia/Pacific ✓		11,343	11,533	12,175	12,122	11,809
Americas ✓		21,255	19,795	19,482	17,870	17,960
Engineering Division ✓		6,432	7,038	7,330	6,997	6,564
Other activities ✓		376	341	4,825	4,954	4,796
Employees in production		20,466	21,194	21,684	20,200	19,829
Employees in sales, marketing and distribution		27,293	27,021	31,851	31,778	31,249
Employees in research and development ✓		345	348	390	367	385
Employees in administration		11,611	11,211	11,666	11,141	11,302
Part-time employees ✓	%	2.5	1.7	2.1	1.9	1.7
Temporary staff ✓	%	8.4	8.8	8.6	6.2	6.4
Employees on parental leave (Germany) ✓		454	434	369	344	328
Staff covered by collective wage agreements ✓	%	42.3	41.2	46.5	45.6	45.1
<b>Employee retention and benefits</b>						
Number of new hires ✓		9,513	10,290	12,049	8,955	–
thereof women ✓	%	50.5	49.2	46.2	41.6	–
Staff turnover rate <sup>14</sup> ✓	%	12.1	10.7	10.0	9.4	10.1
Average length of service ✓	years	9.1	9.1	8.4	8.9	9.3
Retired employees receiving pensions from Linde ✓		28,722	29,116	30,941	31,006	31,118



## Diversity

		2016	2015	2014	2013	2012
Staff up to 30 years old ✓	%	17.1	17.5	18.4	18.2	17.6
Staff between 31 and 50 years old ✓	%	57.9	58.3	57.5	58.0	58.4
Staff over 50 years old ✓	%	25.0	24.2	24.1	23.8	24.0
Nationalities of employees in Germany ✓		67	64	65	65	67
Non-German nationalities among senior managers in Germany ✓	%	67.5	67.3	71.0	72.9	69.7
Proportion of female employees ✓						
in total workforce ✓	%	32.5	30.7	28.7	27.3	26.9
in Germany ✓	%	23.8	25.4	25.4	25.9	25.4
in senior management positions ✓	%	16.2	14.5	13.9	13.2	12.3
in the Executive Board	%	0	0	0	0	0
in the Supervisory Board	%	25.0	25.0	16.6	16.6	8.3
Severely disabled employees (Germany) ✓	%	3.4	3.6	3.4	3.5	3.1

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## Employee training

		2016	2015	2014	2013	2012
Employees who attended training opportunities ✓	%	38.2	61.0	66.2	60.3	61.0
Average training days per employee ✓		3.7	2.9	3.1	3.0	2.6
Average expenditure on training programmes per employee ✓	€	372	369	350	341	386
Apprentices and trainees in total workforce ✓	%	0.8	0.9	0.9	0.9	0.9
Apprentices and trainees in Germany ✓	%	3.4	3.0	3.2	3.1	3.2

<sup>1</sup> In line with the information in the Financial Report 2016, the figures provided for the years 2015 and 2016 exclude the business of the logistics service provider Gist, as it has been reported as a discontinued operation. As a result of the first-time application of the revised accounting standards, the sites in the scope of our reporting changed in the 2013 financial year. Accordingly, the key financial, environmental and employee KPIs for 2012 were adjusted retrospectively in the year 2013. In addition, the KPIs for employees, occupational health and safety and environmental protection for the year 2012 were retrospectively adjusted to account for the effects of the acquisition of the US homecare company Lincare.

<sup>2</sup> EBIT (before non-recurring items) adjusted for amortisation of intangible assets and depreciation of tangible assets.

<sup>3</sup> Severe traffic incidents, e.g. with serious effects on the health of the employees involved or with reportable emissions to the environment, as well as transport incidents leading to material costs above a defined threshold. The performance indicator was redefined in 2015. The new definition includes not only preventable transport incidents but also incidents previously classified as non-preventable. The figure has been recalculated for previous years.

<sup>4</sup> Examples of other energy sources are heating oil, biofuel energy, propane, butane, thermal energy and diesel fuel. From 2015, this figure also includes diesel consumption by Linde's transport contractors. The 2014 figure has been recalculated.

<sup>5</sup> Water consumption relates to drinking water and industrial water used. Once-through water is drawn from a natural or other sources, solely warmed and ultimately piped back to the original source at a temperature not posing any risk to the surrounding ecosystem.

<sup>6</sup> From 2015, this figure also includes greenhouse gas emissions generated by Linde's transport contractors. The 2014 figure has been recalculated.

<sup>7</sup> This includes greenhouse gases specified in the Kyoto Protocol: methane (CH<sub>4</sub>), nitrous oxide (laughing gas, N<sub>2</sub>O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). In 2014, Linde has refined the determination method of the indicator for these GHGs to include additional emitters and emission sources. The reported figure for 2013 was recalculated based on this new method.

<sup>8</sup> Since 2014, we also include the Radiative Forcing Index (RFI) to calculate emissions from business travel. Thereby, we take into account the higher impact of air travel on the greenhouse effect. Emissions for the year 2013 have been re-calculated accordingly.

<sup>9</sup> In 2014, Linde has refined the determination method for emissions to the air. Where available, measurements were used for the new methodology. For production sites for which no measurements were available, we estimated the figures. Where possible, the reported figures for 2013 were recalculated based on these new methods. The determination method for VOC emissions could not be applied retroactively. Therefore, the values for this indicator are not comparable for the years 2013 and 2014.

<sup>10</sup> The determination method for ammonia was revised during 2015. Reported ammonia emissions include uncontrolled releases to the atmosphere and since 2015 have been extended to include controlled releases to abatement systems at certain sites. The figure for 2014 has been restated accordingly.

<sup>11</sup> The figure for SO<sub>x</sub> emissions disclosed in the Corporate Responsibility Report 2015 was too low and has been restated retrospectively.

<sup>12</sup> In 2015, we have further improved the determination method for emissions to water (COD, BOD, nitrates, phosphates) applying measurement and extrapolation models. Although there are inherent limitations by applying this methodology, full measurement of these emissions by all Linde sites is considered economically not viable. The reported figures of the water emission indicators of the Linde Group therefore serve as an approximation. The figures for 2014 have been restated accordingly.

<sup>13</sup> Incineration waste is partly used for heat recovery.

<sup>14</sup> Staff turnover rate relates to employees who left the Group voluntarily during the period under review.

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# GLOBAL COMPACT

GRI G4-15

We support the United Nations Global Compact. In our Corporate Responsibility Report, we explain how we implement the ten Global Compact principles. Content relevant to the Global Compact is identified as such at the beginning of each section of the report. This content is also listed in the GRI and Global Compact Index in the online report.

We report in accordance with the Advanced Level of the UN Global Compact, the highest reporting level of the Communication on Progress (COP). To meet the requirements of this reporting level, we provide [voluntary information about 24 criteria on the UN Global Compact website](#) alongside the Corporate Responsibility Report. We also consider the [Blueprint for Corporate Sustainability Leadership](#), an action plan initiated by the Global Compact LEAD platform.



The following table provides an overview of the commitments, standards and management systems which help us incorporate the principles of the UN Global Compact into our business processes. We also report on how we measure and monitor our performance and on the progress we have made, the measures we propose to implement and the goals we have set ourselves.

## Human rights

**Principle 1:** Support and respect the protection of internationally proclaimed human rights

**Principle 2:** Make sure that the company is not complicit in human rights abuses

<b>Strategy</b>	<p>Linde undertakes to respect and protect human rights. We comply with international principles and guidelines such as</p> <ul style="list-style-type: none"> <li>— the UN Universal Declaration of Human Rights,</li> <li>— the UN Guiding Principles on Business and Human Rights and</li> <li>— the OECD Guidelines for Multinational Enterprises.</li> </ul> <p>Our aim is to make a contribution towards supporting human rights within the sphere of influence of our company: in our business activities, in the protection of our employees and in relationships with our stakeholders.</p>	<p><a href="#">Labour standards</a></p> <p><a href="#">Occupational health &amp; safety</a></p> <p><a href="#">Suppliers</a></p>
<b>Implementation and monitoring</b>	<p>Our commitments to protect human rights are set out in our Group guidelines which are binding on all our employees. These include our Code of Ethics and a position paper on human rights. Our Code of Ethics is supplemented by other global guidelines and standards, including the global policy on health, safety, and environmental protection. In our Code of Conduct for Suppliers, we also require our suppliers to protect human rights and comply with minimum social standards.</p> <p>We review our commitments to protect human rights by applying a multistage implementation and monitoring process:</p> <ul style="list-style-type: none"> <li>— We provide our employees with training on the contents of our Code of Ethics.</li> <li>— Training and audits are an integral part of our safety management system. We include contractors and other business partners in our training.</li> <li>— We use global surveys in all regions to verify the implementation of fair working conditions.</li> <li>— Our dialogue with employee representatives also includes discussions and consultation about labour standards.</li> <li>— We address the impact of our procurement practices and set out minimum standards for suppliers. We test compliance on a sample basis.</li> </ul>	<p><a href="#">Code of Ethics</a></p> <p><a href="#">Position paper on human rights</a></p> <p><a href="#">Policy on health, safety and environmental protection</a></p> <p><a href="#">Code of Conduct for Suppliers</a></p> <p><a href="#">Labour standards</a></p> <p><a href="#">Occupational health &amp; safety</a></p> <p><a href="#">Suppliers</a></p> <p><a href="#">Compliance</a></p>

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## Human rights

- Employees and external shareholders can use the confidential Linde Integrity Line to report grievances, anonymously if they so wish. [Integrity Line](#)

## Progress in the reporting year

- Global survey conducted within the Group on processes which ensure respect for human rights [Safety](#)
- 80 audits covering social topics were conducted [Labour standards](#)
- Occupational health and safety audits were conducted at just under 48.9 percent of operating sites; around 17 percent of operating sites certified in accordance with OHSAS 18001 [Occupational health & safety](#)
- First global Safety Day took place; in addition, health and safety awareness-raising activities and training carried out in many countries for managers, employees and contractors [Suppliers](#)
- Reduction of around 24 percent in workplace accidents per 1 million hours worked compared with 2015
- Reduction of around 9 percent in serious transport incidents per 1 million kilometres travelled compared with 2015
- New health options introduced for employees
- 80 percent of our strategic suppliers have signed up to our Code of Conduct for Suppliers (since 2013)
- Over 900 suppliers reviewed to ensure they comply with guidance on environmental and safety issues and other issues relating to sustainability

## Outlook

- Implement measures to achieve our global targets: [Targets](#)
  - Continuously reduce workplace accidents by 2020 (base year 2012)
  - Increase proportion of female managers
  - Reduce frequency of serious transport incidents per 1 million kilometres travelled by 20 percent compared with base year 2015
- Devise and introduce additional minimum safety requirements for suppliers and logistics service providers
- Devise and roll out a behavioural safety programme for employees at production sites

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## Labour standards

**Principle 3:** Uphold the freedom of association and recognise the right to collective bargaining

**Principle 4:** Uphold the elimination of all forms of forced labour

**Principle 5:** Uphold the abolition of child labour

**Principle 6:** Uphold the elimination of discrimination in respect of employment and occupation

<b>Strategy</b>	<p>Linde is committed to upholding international labour rights and standards and to dealing fairly with its employees. We are guided here by the principles set out in the core labour standards of the International Labour Organisation (ILO).</p> <p>These include:</p> <ul style="list-style-type: none"> <li>— recognising the right of employees to freedom of association and collective bargaining to the extent that this is permitted by local legislation and promoting open dialogue between employees and management where there are no designated employee representatives;</li> <li>— rejecting any form of forced labour or human trafficking;</li> <li>— complying with requirements about the minimum age for employees, as set out in local legislation and international agreements;</li> <li>— observing guidelines on equal opportunities and fair treatment and adopting a policy of zero tolerance for any form of illegal discrimination or employee harassment.</li> </ul> <p>We also expect our suppliers to comply with these labour standards.</p>	<p><a href="#">Labour standards</a></p> <p><a href="#">Diversity</a></p> <p><a href="#">Involving employees</a></p> <p><a href="#">Suppliers</a></p>	CONTENTS
<b>Implementation and monitoring</b>	<p>Our commitments to the protection of human rights are set out in mandatory guidelines for employees. These include our Code of Ethics and a position paper on human rights. Our Code of Ethics is supplemented by other global guidelines and standards. These include the global policy on health, safety, and environmental protection. In our Code of Conduct for Suppliers, we also require our suppliers to protect human rights and comply with minimum social standards.</p> <p>We have implemented various measures to ensure compliance with labour rights:</p> <ul style="list-style-type: none"> <li>— Linde has a central works council for the Group as a whole as well as a European Works Council which currently has 28 members and is responsible for cross-regional topics. In other countries, employee representation is at regional level. Our dialogue with employee representatives also includes discussions and consultation about labour standards.</li> <li>— Employees are provided with training on the content of our Code of Ethics.</li> <li>— Our diversity management programme aims to exclude any form of discrimination and actively promote equal opportunities.</li> <li>— We use a global survey to conduct a regular review of the extent to which systems are implemented to exclude any form of forced labour or child labour.</li> <li>— We set out minimum requirements in the area of social standards with which our suppliers must comply. We test compliance on a sample basis.</li> <li>— Any grievances can be reported via the Linde Integrity Line, anonymously if so desired.</li> </ul>	<p><a href="#">Code of Ethics</a></p> <p><a href="#">Position paper on human rights</a></p> <p><a href="#">Policy on health, safety and environmental protection</a></p> <p><a href="#">Code of Conduct for Suppliers</a></p> <p><a href="#">Labour standards</a></p> <p><a href="#">Diversity</a></p> <p><a href="#">Involving employees</a></p> <p><a href="#">Suppliers</a></p> <p><a href="#">Compliance</a></p> <p><a href="#">Integrity Line</a></p>	THE REPORT
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## Labour standards

Progress in the reporting year	— Global survey conducted within the Group on processes which ensure <a href="#">Labour standards</a> that human rights are being respected	
	— 80 audits covering social topics were conducted	<a href="#">Suppliers</a>
	— Support provided for networking events, workshops, training programmes and mentoring schemes for women with management responsibility and leadership potential	<a href="#">Diversity</a>
	— Numerous activities undertaken which seek among other things to encourage potential female executives; for example, in Europe, Asia and Australia	
	— Proportion of women in the first management tier below the Executive Board is 16 percent (2015: 11 percent)	
	— Proportion of women in the second management tier below the Executive Board is 18 percent (2015: 16 percent)	
	— Over 900 suppliers reviewed to ensure they comply with guidance on environmental and safety issues and other issues relating to sustainability	
	— 80 percent of our strategic suppliers have signed up to our Code of Conduct for Suppliers	

Outlook	— Implement measures to achieve our global target: to increase the proportion of female managers	<a href="#">Targets</a>
	— Increase the proportion of women in the first management tier below the Executive Board to 14 percent in 2017 and 18 percent in 2022	
	— Increase the proportion of women in the second management tier below the Executive Board to 17 percent in 2017 and 22 percent in 2022	
	— Expand across Europe a new programme for employees who have the potential to assume their first management role	
	— Expand childcare options	

## Environmental protection

**Principle 7:** Support a precautionary approach to environmental challenges

**Principle 8:** Undertake initiatives to promote greater environmental responsibility

**Principle 9:** Encourage the development and diffusion of environmentally friendly technologies

Strategy	Linde is committed to making a contribution towards protecting the environment. We focus in particular on the Group's sites, the transportation of products and their use by customers. We concentrate on minimising safety risks and our environmental impact, as well as on the efficient use of energy, resources and materials.	<a href="#">Safety</a>
		<a href="#">Environment</a>
	Our products and services support our customers' efforts to make their business processes safer and more environmentally friendly.	<a href="#">Innovations &amp; products</a>
	Within the context of our social commitment, we also support environmental protection.	<a href="#">Clean Technology by Linde</a>
		<a href="#">Social commitment</a>

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## Environmental protection

### Implementation and monitoring

Our commitment to protecting the environment is outlined in our mandatory Code of Ethics for employees and Code of Conduct for Suppliers. Our global guidelines on health, safety and environmental protection and on product stewardship define the framework for implementation in this area.

Our environmental management system and our risk management system are geared towards minimising the environmental risks that might arise from our processes and products. Measures include risk analyses and certification of our sites in accordance with international standards as well as control mechanisms such as audits.

Training is one of the ways in which we raise awareness of environmental and safety issues among our employees.

We have a wide-ranging portfolio of technologies which help reduce the environmental impact of fossil fuels and cut CO<sub>2</sub> emissions. We are also driving forward the development of alternative fuels and renewable energy sources. Furthermore, our gases are used to improve the quality of untreated water and drinking water as well as to clean waste water.

[Code of Ethics](#)

[Code of Conduct for Suppliers](#)

[Policy on health, safety and environmental protection](#)

[Product stewardship policy](#)

[Environment](#)

[Innovations & products](#)

[Clean Technology by Linde](#)

### Progress in the reporting year

- We have conducted around 1,300 health, safety and environmental audits.
- Since 2009, we have avoided a total of 3.3 million tonnes of CO<sub>2</sub> emissions, of which 0.8 million tonnes were direct emissions and 2.5 million tonnes were indirect emissions.
- Around 200 projects identified which increase energy efficiency; their implementation has generated cost savings of more than EUR 30 m and has reduced CO<sub>2</sub> emissions by around 220,000 tonnes.
- Water supplies at key production sites worldwide reviewed for the first time on the basis of the criteria set out by the World Resources Institute
- Potential savings of around 440,000 cubic metres of water and cost savings of around EUR 70,000 per annum identified in Eastern Europe, Asia and South America
- More than 600 production sites around the world reviewed for their proximity to international protected areas; water supply studied at our key production sites
- More than 50 percent of our research and development projects aimed to achieve an environmental benefit.
- 500 patents in the chemical and environmental sectors, clean energy and hydrogen technologies
- 30 million tonnes of CO<sub>2</sub> emissions avoided just as a result of customers using two key Linde technologies
- Over 17,000 tonnes of NO<sub>x</sub> emissions avoided at customers' plants by using LoTOx™ systems
- Around 850 million cubic metres of water brought up to drinking water quality in six countries using Linde's Solvcarb® process installed by our customers
- Over 900 suppliers reviewed to ensure they comply with guidance on environmental and safety issues and other issues relating to sustainability

[Safety](#)

[Environment](#)

[Innovations & products](#)

[Production](#)

[Energy & climate protection](#)

[Water](#)

### Outlook

- Avoid a total of 6 million tonnes of CO<sub>2</sub> emissions by 2020 compared with 2009
- Certify other sites in accordance with the updated environmental standard ISO 14001 which was revised in 2015

[Targets](#)

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## Anti-corruption

### Principle 10: Work against corruption in all its forms, including extortion and bribery

Strategy	Good corporate governance is an essential prerequisite of our business success. It involves complying with laws, regulations and voluntary commitments.	<a href="#">Code of Ethics</a>
	The aim of our global compliance programme is to prevent misconduct and to investigate and follow up any violations.	<a href="#">Code of Conduct for Suppliers</a> <a href="#">Compliance</a>
Implementation and monitoring	Our key compliance guidelines are set out in our Code of Ethics for employees and our Code of Conduct for Suppliers and in other supplementary guidelines. To prevent misconduct, our global compliance programme is based on three pillars: communication, training and personal advice.	<a href="#">Compliance</a> <a href="#">Integrity Line</a>
	At the same time, we encourage our employees to report any violations of our Code of Ethics, other Group guidelines or legal regulations, and we offer them advice on doing so. Employees and third parties can use the Linde Integrity Line to report any doubts or suspicions they may have. Each report to the Integrity Line is examined. Our Integrity Line guideline defines the exact process to be followed and ensures that reports remain confidential and that data is protected. If the suspicion proves justified, this entails consequences.	
Progress in the reporting year	We apply the knowledge we gain from dealing with these cases to make further improvements in our compliance programme.	
	<ul style="list-style-type: none"> <li>— Just under 44,000 e-learning sessions on our Code of Ethics completed</li> <li>— 3,000 employees provided with on-site training by qualified instructors</li> <li>— 7,700 queries handled by compliance officers</li> <li>— The introduction was completed of a new e-learning programme in 12 languages which relates to guidelines dealing with gifts, hospitality and invitations to events</li> <li>— E-learning programme in nine languages introduced for new employees</li> </ul>	<a href="#">Compliance</a>
Outlook	Further measures to expand the compliance programme	<a href="#">Targets</a>

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# GRI AND GLOBAL COMPACT INDEX

GRI G4-32

## General Standard Disclosure: Strategy und analysis

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-1	Statement from the most senior decision-maker of the organisation	<a href="#">CR Report 2016: CEO statement</a>		CONTENTS
	G4-2	Key impacts, risks and opportunities	<a href="#">Financial Report 2016: Opportunity areas (p. 82)</a> <a href="#">Financial Report 2016: Risk areas (p. 86)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">Linde website: Clean Technology by Linde</a>		

## General Standard Disclosure: Organisational profile

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-3	Name	<a href="#">CR Report 2016: Corporate profile</a>		ABOUT LINDE
	G4-4	Primary brands, products and services	<a href="#">CR Report 2016: Corporate profile</a> <a href="#">Linde website: About Linde</a> <a href="#">Linde website: Clean Technology by Linde</a>		
	G4-5	Location of headquarters	<a href="#">CR Report 2016: Imprint</a>		
	G4-6	Countries of operations	<a href="#">CR Report 2016: Corporate profile</a> <a href="#">Linde website: Linde worldwide</a>		GOVERNANCE
	G4-7	Nature of ownership and legal form	<a href="#">Financial Report 2016: Linde in the capital market (p. 38 ff.)</a> <a href="#">Linde website: Management</a>		
	G4-8	Markets served	<a href="#">Financial Report 2016: Corporate profile (p. b)</a> <a href="#">Financial Report 2016: Business review / Gases Division (p. 50 ff.)</a> <a href="#">CR Report 2016: Corporate profile</a>		SAFETY
	G4-9	Scale of the organisation	<a href="#">Financial Report 2016: Linde financial highlights (p. a)</a> <a href="#">CR Report 2016: Corporate profile</a> <a href="#">CR Report 2016: Key figures</a>		
	G4-10	Total number of employees	<a href="#">CR Report 2016: Corporate profile</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Key figures</a>	<p>We include gender-specific data where relevant for The Linde Group: for example, the percentage of female staff and the percentage of women in senior management positions. Contractors are working for Linde mainly on construction sites and as transport service providers. We involve these contractors in our safety and environmental protection management systems.</p>	ENVIRONMENT
1; 3	G4-11	Employees covered by collective bargaining agreements	<a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">CR Report 2016: Key figures</a>		
	G4-12	Supply chain	<a href="#">CR Report 2016: Supply chain</a>		EMPLOYEES
	G4-13	Significant changes during the reporting period	<a href="#">Financial Report 2016: Acquisitions (p. 116 f.)</a> <a href="#">CR Report 2016: Corporate profile</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">Linde website: Shareholder structure</a>		
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## General Standard Disclosure: Organisational profile

UNGC	GRI	GRI indicator	Links and downloads	Explanations
	G4-14	Precautionary approach or principle	<a href="#">Financial Report 2016: Risk management (p. 84 ff.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">CR Report 2016: Occupational safety and health protection</a>	
	G4-15	Externally developed sustainability charters, principles or other initiatives	<a href="#">CR Report 2016: Global Compact</a> <a href="#">CR Report 2016: Values and standards</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a>	
	G4-16	Memberships of associations	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Social commitment</a>	We publish information about our most important memberships of associations.

## General Standard Disclosure: Identified material aspects and boundaries

UNGC	GRI	GRI indicator	Links and downloads	Explanations
	G4-17	Entities included in the organisation's consolidated financial statements	<a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Corporate profile</a>	We do not publish any indicators on the CR performance of other companies (e.g. joint ventures, suppliers), if we have no operational control over these companies.
	G4-18	Process for defining the report content	<a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Material topics</a>	
	G4-19	Material Aspects	<a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Material topics</a>	We have covered the material aspects in our Corporate Responsibility Report. They are also included in this table. We set out the main issues under the heading "Material topics".
	G4-20	Aspect Boundary within the organisation	<a href="#">Financial Report 2016: List of shareholdings (p. 178 ff.)</a> <a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">CR Report 2016: Key figures</a>	
	G4-21	Aspect Boundary outside the organisation	<a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">CR Report 2016: Key figures</a>	On the Group's corporate responsibility website, we have identified which stage of the value chain is relevant for each topic. In each case, this information is given at the end of the pages on that particular topic: e.g. on the climate protection page.
	G4-22	Restatements of information provided in previous reports	<a href="#">CR Report 2016: About this report</a> <a href="#">CR Report 2016: Key figures</a>	
	G4-23	Changes from previous reporting periods	<a href="#">Financial Report 2016: List of shareholdings (p. 178 ff.)</a> <a href="#">CR Report 2016: About this report</a>	

## General Standard Disclosure: Stakeholder engagement

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-24	Stakeholder groups engaged by the organisation	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">Linde website: Stakeholders</a>		CONTENTS
	G4-25	Criteria for the selection of stakeholders	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">Linde website: Stakeholders</a>		
	G4-26	Approach to stakeholder engagement	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">Linde website: Stakeholders</a>		
	G4-27	Key topics and concerns raised through stakeholder engagement	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Material topics</a> <a href="#">Linde website: Stakeholders</a>		

## General Standard Disclosure: Report profile

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-28	Reporting period	<a href="#">CR Report 2016: About this report</a>		ABOUT LINDE
	G4-29	Date of most recent previous report	<a href="#">CR Report 2016: About this report</a>		
	G4-30	Reporting cycle	<a href="#">CR Report 2016: About this report</a>		
	G4-31	Contact point for questions	<a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">Linde website: Corporate Responsibility Contact</a>		
	G4-32	GRI Content Index	<a href="#">CR Report 2016: GRI and Global Compact index</a>	With this CR Report we comply with the 'comprehensive' level of the G4 guidelines of the Global Reporting Initiative.	GOVERNANCE
	G4-33	External assurance	<a href="#">CR Report 2016: Assurance</a>		

## General Standard Disclosure: Governance

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-34	Governance structure of the organisation	Financial Report 2016: Executive Board (p. 4 f.) Financial Report 2016: Supervisory Board (p. 6 f.) Financial Report 2016: Diversity on the Supervisory Board (p. 17 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Promotion of women</a> <a href="#">Linde website: Executive Board</a>		ENVIRONMENT
	G4-35	Process for delegating authority for sustainability topics from the highest governance body to senior executives and other employees	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a>		
	G4-36	Executive-level positions with responsibility for economic, environmental and social topics	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a>		
	G4-37	Processes for consultation between stakeholders and the highest governance body	Financial Report 2016: Supervisory Board and Executive Board procedures (p. 15 ff.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Involving employees</a>		

## General Standard Disclosure: Governance

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-38	Composition of the highest governance body and its committees	Financial Report 2016: Executive Board (p. 4 f.) Financial Report 2016: Members and committees of the Supervisory Board (p. 6 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Promotion of women</a>		CONTENTS
	G4-39	Chair of the highest governance body	Financial Report 2016: Members and committees of the Supervisory Board (p. 6 f.)		
	G4-40	Nomination and selection processes for the highest governance body and its committees	Financial Report 2016: Supervisory Board and Executive Board procedures (p. 15 ff.)		
	G4-41	Process to avoid and manage conflicts of interest for the highest governance body	Financial Report 2016: Corporate governance practices (p. 15 ff.)		THE REPORT
	G4-42	Highest governance body's and senior executives' roles in goals related to sustainability impacts	Financial Report 2016: Responsibilities (p. 204 f.) Financial Report 2016: Identification of opportunities (p. 82 ff.) Financial Report 2016: Role of the Executive Board and the Supervisory Board regarding risk management (p. 84 ff.) <a href="#">CR Report 2016: Sustainability strategy</a>		
	G4-43	Highest governance body's collective knowledge of sustainability topics	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a>		ABOUT LINDE
	G4-44	Evaluation of the highest governance body's performance with respect to sustainability topics	Financial Report 2016: Supervisory Board and Executive Board procedures (p. 15 ff.)		
	G4-45	Highest governance body's role in the identification and management of impacts, risks, and opportunities related to sustainability	Financial Report 2016: Identification of opportunities (p. 82 ff.) Financial Report 2016: Role of the Executive Board and the Supervisory Board in the management of risk (p. 84 ff.) Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a>		GOVERNANCE
	G4-46	Highest governance body's role in reviewing the effectiveness of the organisation's risk management processes for sustainability topics	Financial Report 2016: Role of the Executive Board and the Supervisory Board in the management of risk (p. 84 ff.) Financial Report 2016: Committees and meetings of the Supervisory Board (p. 7) <a href="#">CR Report 2016: Sustainability strategy</a>		
	G4-47	Frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities	Financial Report 2016: Identification of opportunities (p. 82 ff.) Financial Report 2016: Role of the Executive Board and the Supervisory Board in the management of risk (p. 84 ff.) <a href="#">CR Report 2016: Sustainability strategy</a>	The Linde AG Executive Board regularly makes decisions on sustainability topics at its meetings.	SAFETY
	G4-48	Highest committee or position that reviews and approves the sustainability report	<a href="#">CR Report 2016: CEO statement</a> <a href="#">CR Report 2016: Sustainability strategy</a>		
	G4-49	Process for communicating critical concerns to the highest governance body	Financial Report 2016: Supervisory Board and Executive Board procedures (p. 15 ff.) <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Involving employees</a>		EMPLOYEES
	G4-50	Critical concerns that were communicated to the highest governance body	<a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Compliance</a>		
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## General Standard Disclosure: Governance

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-51	Remuneration policies for the highest governance body and senior executives	Financial Report 2016: Corporate governance practices (p. 15 ff.) Financial Report 2016: Remuneration of the Executive Board and the Supervisory Board <a href="#">CR Report 2016: Remuneration and social benefits</a>		CONTENTS
	G4-52	Process for determining remuneration	Financial Report: Remuneration of the Executive Board and the Supervisory Board (p. 22 ff.) <a href="#">CR Report 2016: Remuneration and social benefits</a>		
	G4-53	Expression and consideration of stakeholders' views	Financial Report 2016: Remuneration of the Executive Board and the Supervisory Board (p. 22 ff.)		
	G4-54	Ratio of the annual total compensation for the organisation's highest-paid individual to the median annual total compensation for all employees		In our Code of Ethics, we set out our commitment to fair remuneration. To ensure that we provide this, we regularly review remuneration in the regions where we operate to ensure that it is appropriate and in line with the market. We do not consider that the information required for this GRI G4 performance indicator is appropriate in evaluating the fairness of the remuneration system at Linde.	
	G4-55	Ratio of percentage increase in annual total compensation for the organisation's highest-paid individual to the median percentage increase in annual total compensation for all employees		In our Code of Ethics, we set out our commitment to fair remuneration. To ensure that we provide this, we regularly review remuneration in the regions where we operate to ensure that it is appropriate and in line with the market. We do not consider that the information required for this GRI G4 performance indicator is appropriate in evaluating the fairness of the remuneration system at Linde.	THE REPORT
					ABOUT LINDE
					GOVERNANCE
					SAFETY

## General Standard Disclosure: Ethics und integrity

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
	G4-56	Values, principles, standards and norms of behaviour	<a href="#">CR Report 2016: Values and standards</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Company guidelines and position papers</a>		ENVIRONMENT
	G4-57	Internal and external mechanisms for seeking advice on ethical and lawful behaviour, and matters related to organisational integrity	<a href="#">CR Report 2016: Values and standards</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Integrity Line</a> PDF: <a href="#">Linde Integrity Line guideline</a>		
	G4-58	Internal and external mechanisms for reporting concerns about unethical or unlawful behaviour, and matters related to organisational integrity	<a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Integrity Line</a> PDF: <a href="#">Linde Integrity Line guideline</a>		
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## Economic indicators

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
<b>Economic performance</b>					
7	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) Financial Report 2016: Business model (p. 42) Financial Report 2016: Targets and strategy (p. 44) Financial Report 2016: Business review (p. 50 f.) Financial Report 2016: Corporate governance practices (p. 15 ff.)		CONTENTS
	G4-EC1	Direct economic value generated and distributed	Financial Report 2016: Linde shares (p. 38 ff.) Financial Report 2016: Remuneration and social benefits (p. 72 f.) Financial Report 2016: Group financial statements (p. 105 ff.) <a href="#">CR Report 2016: Social commitment</a>	We do not publish information about tax payments at country level, as we classify this as confidential.	THE REPORT
7	G4-EC2	Financial implications and other risks and opportunities due to climate change	Financial Report 2016: Opportunities arising from increased climate protection efforts (p. 82 f.) Financial Report 2016: Regulatory and legal risks (p. 92 f.) <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CDP website</a>		ABOUT LINDE
7	G4-EC3	Coverage of the organisation's defined benefit plan obligations	Financial Report 2016: Provisions for pensions and similar obligations (p. 144 f.) Financial Report 2016: Remuneration and social benefits (p. 72 f.)		GOVERNANCE
	G4-EC4	Financial assistance received from government		We do not publish a total figure for financial assistance received from governments, as we classify this information as confidential. Subsidies for large projects (mainly research or pilot projects that are of public interest) are reported on an ad-hoc basis: for example, through press releases.	SAFETY
<b>Market presence</b>					
	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) Financial Report 2016: Business model (p. 42) Financial Report 2016: Targets and strategy (p. 44) <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Diversity</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most material sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.	ENVIRONMENT
1	G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage	<a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">PDF: Code of Ethics (p. 38)</a>	In our Code of Ethics, we set out our commitment to fair remuneration. To ensure that we provide this, we regularly review remuneration in the regions where we operate to ensure that it is appropriate and in line with the market. We do not publish figures on entry level wages, as we classify this information as confidential.	EMPLOYEES
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## Economic indicators

UNGC	GRI	GRI indicator	Links and downloads	Explanations
6	G4-EC6	Proportion of senior management hired from the local community	<a href="#">CR Report 2016: Diversity</a>	In 2012, we looked at our senior managers in the key emerging markets and ascertained that about 70 percent of them had been hired from the local community. We are not aware of any significant subsequent change to this figure.

## Indirect economic impacts

1; 6	G4-DMA	Management approach	<a href="#">CR Report 2016: Employees</a> <a href="#">CR Report 2016: Social commitment</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.
2	G4-EC7	Development and impact of infrastructure investments and services supported	Financial Report 2016: Targets and strategy (p. 44) <a href="#">CR Report 2016: Social commitment</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">CR Report 2016: Winning talent</a> <a href="#">CR Report 2016: Remuneration and social benefits</a>	
2	G4-EC8	Significant indirect economic impacts	<a href="#">CR Report 2016: Social commitment</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">Linde website: Linde worldwide</a>	

## Procurement practices

1;2;3; 4;5;6	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Raw materials</a> <a href="#">Linde website: Supply chain</a> <a href="#">PDF: Code of Conduct for Suppliers</a> <a href="#">PDF: Ethical-Legal Principles of Procurement</a>	
	G4-EC9	Proportion of spending on local suppliers	<a href="#">CR Report 2016: Supply chain</a>	

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## Materials

8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">CR Report 2016: Raw materials</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">Linde website: Supply chain</a> <a href="#">Linde website: Product stewardship</a> <a href="#">Linde website: Raw materials</a> <a href="#">Policy on health, safety and environmental protection</a>	
8	G4-EN1	Materials used by weight or volume	<a href="#">CR Report 2016: Raw materials</a> <a href="#">CR Report 2016: Key figures</a> <a href="#">CR Report 2016: Energy and climate protection</a>	<p>The most important renewable resource for Linde is air from the atmosphere. The Group derives its products from the components of air. We report air gases sold in the financial year as a proportion of total gases sold, measured by weight. The consumption of other key resources and materials we publish as a total figure for raw materials and supplies used. We do not distinguish here between renewable and non-renewable materials, as this information is not strategically meaningful for our Group. The key packaging material for Linde is gas cylinders, which are reused and have therefore not been included in the performance indicator for packaging materials.</p>
8;9	G4-EN2	Materials used that are recycled input materials	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Raw materials</a>	<p>This performance indicator is only relevant for certain areas of our business operations and the information is therefore not strategically meaningful for the Group.</p> <p>The most important renewable resource for Linde is air from the atmosphere. The Group derives many of its products from the components of air. We report air gases sold in the financial year as a proportion of total gases sold, measured by weight as well as the proportion of CO<sub>2</sub> products derived from recycling processes.</p>

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<b>Energy</b>					
8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">Financial Report 2016: Opportunities arising from increased climate protection efforts (p. 82 f.)</a> <a href="#">Financial Report 2016: Regulatory and legal risks (p. 92 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Innovation and products</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">Linde website: Clean Technology by Linde</a> <a href="#">Linde website: Energy</a> <a href="#">Policy on health, safety and environmental protection</a>		CONTENTS
8	G4-EN3	Energy consumption within the organisation	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report our direct consumption of natural gas and other fuels, including heating oil, thermal energy, refinery gases and synthesis gases, diesel fuel, butane and propane. Standard conversion factors are used. Our total energy consumption including electricity consumption in 2016 was around 80 million MWh (2015: 79 million MWh). We do not break direct energy consumption down further into renewable and non-renewable primary energy sources, as the cost of collecting the data is not strategically meaningful for the Group. We do not publish information on the sale of energy, as we classify this as confidential.	ABOUT LINDE
8	G4-EN4	Energy consumption outside of the organisation	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report scope 3 emissions from business travel. The underlying energy consumption is thereby presented indirectly.	GOVERNANCE
8	G4-EN5	Energy intensity	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	Total energy consumption (in MWh) within the Group per million euro of revenue rose in the 2016 reporting year to 4,703 MWh per million euro (2015: 4,520 MWh per million euro).	SAFETY
2	G4-EN6	Reduction of energy consumption	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>		ENVIRONMENT
2	G4-EN7	Reduction in energy requirements of products and services	<a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Innovation and products</a> <a href="#">CR Report 2016: Energy and climate protection</a>	Our products and technologies support our customers' efforts to increase energy efficiency in their processes. In our reports, we provide examples of selected Linde products which have generated energy savings and resulted in reduced CO <sub>2</sub> emissions for our customers.	EMPLOYEES
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<b>Water</b>				
8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Water</a> <a href="#">Linde website: Water</a> <a href="#">Policy on health, safety and environmental protection</a>	
8	G4-EN8	Total water withdrawal by source	<a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Key figures</a>	<p>Most of the water used by Linde is taken from surface water and used as cooling water. In most cases, it can be fed back into the water system without the need for further treatment. The performance indicator for water use is based, where available, on measurements taken. If measurements are not available, we use estimates.</p> <p>The data requested for this GRI indicator on total water withdrawal is only of limited relevance to Linde and therefore does not constitute a strategically meaningful control parameter for our Group.</p>
8;9	G4-EN9	Water sources affected by withdrawal of water	<a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Key figures</a>	<p>We report the proportion of Linde sites in regions with water stress or water scarcity as defined by the World Resource Institute (WRI).</p>
8	G4-EN10	Water recycled and reused	<a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Key figures</a>	<p>Most of the water used by Linde is taken from surface water and used as cooling water. In most cases, it can be fed back into the water system without the need for further treatment.</p>

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<b>Biodiversity</b>					
8	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Ecosystems</a> <a href="#">Linde website: Biodiversity</a> <a href="#">Policy on health, safety and environmental protection</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.	CONTENTS
8	G4-EN11	Operational sites in or adjacent to protected areas	<a href="#">CR Report 2016: Ecosystems</a> <a href="#">CR Report 2016: Water</a> <a href="#">Linde website: Biodiversity</a>		THE REPORT
8	G4-EN12	Impacts on biodiversity in protected areas	<a href="#">CR Report 2016: Ecosystems</a> <a href="#">CR Report 2016: Water</a> <a href="#">Linde website: Biodiversity</a>		
8	G4-EN13	Habitats protected or restored	<a href="#">CR Report 2016: Ecosystems</a> <a href="#">CR Report 2016: Water</a> <a href="#">Linde website: Biodiversity</a>		ABOUT LINDE
8	G4-EN14	Endangered species	<a href="#">CR Report 2016: Ecosystems</a> <a href="#">Linde website: Biodiversity</a>		
<b>Emissions</b>					
7;8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">Financial Report 2016: Opportunities arising from increased climate protection efforts (p. 82 f.)</a> <a href="#">Financial Report 2016: Regulatory and legal risks (p. 92 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Innovation and products</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Emissions to air</a> <a href="#">Linde website: Air</a> <a href="#">Linde website: Clean Technology by Linde</a> <a href="#">Policy on health, safety and environmental protection</a>		GOVERNANCE
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UNGC	GRI	GRI indicator	Links and downloads	Explanations	
8	G4-EN15	Direct greenhouse gas emissions (Scope 1)	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report direct (Scope 1) and indirect (Scope 2) emissions in accordance with the standards set out in the Greenhouse Gas Protocol. As a source for global warming potential, we use publications by the IPCC (Intergovernmental Panel on Climate Change). Calculations of emissions from direct and indirect energy consumption (electricity) are based on local conversion factors, where these are available. If this is not the case, we use average country factors. The source for these is data from the IEA (International Energy Agency) and DEFRA (the Department for Environmental and Rural Affairs). Our reports include all Linde production sites over which Linde has operational control.	CONTENTS
8	G4-EN16	Energy indirect greenhouse gas emissions (Scope 2)	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report direct (Scope 1) and indirect (Scope 2) emissions in accordance with the standards set out in the Greenhouse Gas Protocol. As a source for global warming potential, we use publications by the IPCC (Intergovernmental Panel on Climate Change). Calculations of emissions from direct and indirect energy consumption (electricity) are based on local conversion factors, where these are available. If this is not the case, we use average country factors. The source for these is data from the IEA (International Energy Agency) and DEFRA (the Department for Environmental and Rural Affairs). Our reports include all Linde production sites over which Linde has operational control. Linde does not emit significant quantities of biogenic CO <sub>2</sub> .	THE REPORT
8	G4-EN17	Other indirect greenhouse gas emissions (Scope 3)	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report scope 3 emissions from business travel. The effect of radiative forcing in aviation is taken into consideration. The data used is based on statistics provided by the travel service provider which organises all the Group's business trips. Emission factors are provided by DEFRA (the Department for Environmental and Rural Affairs). Linde does not emit significant quantities of biogenic CO <sub>2</sub> .	ABOUT LINDE
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UNGC	GRI	GRI indicator	Links and downloads	Explanations
8	G4-EN18	Greenhouse gas emissions intensity	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report the following ratios: The ratio of scope 1 + scope 2 emissions (in t CO <sub>2</sub> e) to revenue (in EUR million) The ratio of scope 1 + scope 2 emissions (in t CO <sub>2</sub> e) to the number of employees at the year-end.
7;8;9	G4-EN19	Reduction of greenhouse gas emissions	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Emissions to air</a>	We report on current climate protection targets in the section entitled accordingly. In 2015, the Group set itself a new climate target (Scope 1 and 2). By 2020, Linde wants to avoid a total of 6 million tonnes of CO <sub>2</sub> e in direct and indirect greenhouse gas emissions compared with the year 2009.
8	G4-EN20	Emissions of ozone-depleting substances	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Emissions to air</a> <a href="#">CR Report 2016: Key figures</a>	For Linde, the most relevant emissions in terms of climate protection are CO <sub>2</sub> emissions from its own business operations. We present detailed information about these emissions. We are currently assessing how useful it would be for us to include this GRI indicator in our reporting by 2020.
8	G4-EN21	NO <sub>x</sub> , SO <sub>x</sub> , and other air emissions	<a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Emissions to air</a> <a href="#">CR Report 2016: Key figures</a>	Global emissions of air pollutants (NO <sub>x</sub> , SO <sub>x</sub> , CO, VOC and NH <sub>3</sub> ) are calculated when available on the basis of measured data. For sites where no measurements have been taken, estimates are made.

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## Effluents and waste

7;8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Waste</a> <a href="#">Linde website: Water</a> <a href="#">Linde website: Waste</a> <a href="#">Linde website: Clean Technology by Linde</a> <a href="#">Policy on health, safety and environmental protection</a>	
8	G4-EN22	Total water discharge	<a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Key figures</a>	<p>Most of the water used by Linde is taken from surface water and used as cooling water. In most cases, it can be fed back into the water system without the need for further treatment.</p> <p>The data requested for this GRI indicator on total water discharge is only of limited relevance to Linde and therefore does not constitute a strategically meaningful control parameter for our Group.</p>
8	G4-EN23	Total weight of waste by type and disposal method	<a href="#">CR Report 2016: Waste</a> <a href="#">CR Report 2016: Key figures</a>	<p>Not only do we disclose the total amount of hazardous and non-hazardous waste we produce, we also give details about the proportions of waste we dispose of in different ways. Some of the relevant information is provided by waste disposal contractors. Other data required for this GRI indicator on waste and waste disposal methods is not relevant to Linde and therefore does not constitute a strategically meaningful control parameter for our Group.</p>
8	G4-EN24	Significant spills	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Water</a> <a href="#">CR Report 2016: Production</a> <a href="#">CR Report 2016: Emissions to air</a> <a href="#">CR Report 2016: Key figures</a>	<p>Serious emissions from process losses are included in our key figures on emissions to air and emissions to water. We disclose the number of reportable environmental incidents together with information on the background to those incidents. Spills are included in these figures.</p>

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8	G4-EN25	Hazardous waste	<a href="#">CR Report 2016: Waste</a> <a href="#">CR Report 2016: Key figures</a>	Not only do we disclose the total amount of hazardous and non-hazardous waste we produce, we also give details about the proportions of waste we dispose of in different ways. All the information relevant to the topic of waste in The Linde Group has therefore been covered. In most cases, hazardous waste is handled by specialist waste disposal companies. Linde does not import any significant quantities of waste.
8	G4-EN26	Water bodies and related habitats affected	<a href="#">CR Report 2016: Water</a>	Where necessary, waste water from our production processes and sanitary facilities is either dealt with directly in our own waste water treatment plants or fed into municipal or industrial treatment systems. We comply here with permitted emission levels.

## Products and services

7;8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">Linde website: Environment and safety</a> <a href="#">Linde website: Clean Technology by Linde</a> <a href="#">Policy on health, safety and environmental protection</a>	Linde has global guidelines in place for potential cases of recalls.
7;8;9	G4-EN27	Impact mitigation of environmental impacts of products and services	<a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Innovations and products</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: Clean Technology by Linde</a>	
8;9	G4-EN28	Products sold and packaging materials reclaimed		Data on the total volume of products sold is classified as confidential. In our report, we disclose the total volume of packaging material, as well as major initiatives for taking back packaging material. Gas cylinders for deliveries to our customers are reused on average four times a year and refilled. The gas cylinders have a lifespan of many years. In individual cases, Linde assumes responsibility for disposing of other packaging materials for its customers. Sometimes we also offer customers waste collection and disposal services.

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## Compliance

8	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) Financial Report 2016: Risk management (p. 84 ff.) <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Compliance</a>	
8	G4-EN29	Fines and sanctions for non-compliance with environmental laws and regulations	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Compliance</a>	We report the number of reportable environmental incidents, the number of environmental complaints received and payments arising as a result.

## Transport

8	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Transport</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">Linde website: Transport</a> <a href="#">Policy on health, safety and environmental protection</a>	
8	G4-EN30	Environmental impacts	<a href="#">CR Report 2016: Transport</a> <a href="#">CR Report 2016: Energy and climate protection</a> <a href="#">CR Report 2016: Key figures</a>	We report an estimated number for fuel consumption of the Linde transport fleet and related direct greenhouse gas emissions.

## Overall

8	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Policy on health, safety and environmental protection</a>	
7;8;9	G4-EN31	Environmental protection expenditures and investments	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environment</a>	Key figures are collected at local level in accordance with local legislation. We do not publish these figures, as we classify this information as confidential.

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## Supplier environmental assessment

	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Transport</a> <a href="#">CR Report 2016: Raw materials</a> <a href="#">Linde website: Supply chain</a> <a href="#">Code of Conduct for Suppliers</a>	In 2013, we commissioned an external analysis of sustainability risks in our supply chain. This enables us to classify every individual supplier according to its risk potential in the area of sustainability.
7;8;9	G4-EN32	Suppliers screened using environmental criteria	<a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Raw materials</a>	In 2015, all new suppliers automatically signed up to the Code of Conduct for Suppliers. There is also a continual process in place to ensure that those suppliers with whom contracts were signed prior to 2013, the year the Code of Conduct for Suppliers was introduced, agree to be bound by the Code.
7;8;9	G4-EN33	Environmental impacts in the supply chain	<a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Raw materials</a>	By way of example, we report key figures on impacts in the supply chain and measures taken for contractors on construction sites.

## Environmental grievance mechanisms

7;8;9	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Compliance</a> <a href="#">Policy on health, safety and environmental protection</a>	
7;8;9	G4-EN34	Grievances		We report the number of reportable environmental incidents, the number of environmental complaints received and payments arising as a result.

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## Social indicators: Labour practices and decent work

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<b>Employment</b>					
	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">Financial Report 2016: Personnel opportunities (p. 71 ff.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">Code of Ethics (p. 4 ff.)</a>		CONTENTS
	G4-LA1	New employee hires and employee turnover	<a href="#">CR Report 2016: Employees across the world</a> <a href="#">CR Report 2016: Key figures</a>	We report the number of new employee hires by gender and the employee turnover rate. We do not publish any other data on hiring employees as we classify this information as confidential. Where it is relevant for The Linde Group, we also provide gender-specific data, such as the percentage of female staff and the percentage of women in senior management positions.	THE REPORT
	G4-LA2	Benefits provided to full-time employees	<a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">CR Report 2016: Work-life balance</a> <a href="#">CR Report 2016: Key figures</a>		ABOUT LINDE
	G4-LA3	Return to work and retention rates after parental leave	<a href="#">CR Report 2016: Work-life balance</a> <a href="#">CR Report 2016: Key figures</a>	Where it is relevant for The Linde Group, we provide gender-specific data, such as the percentage of female staff and the percentage of women in senior management positions.	GOVERNANCE
<b>Labour/management relations</b>					
1;3	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Involving employees</a> <a href="#">Linde website: Involving employees</a> <a href="#">Position paper on human rights</a>		SAFETY
3	G4-LA4	Minimum notice periods regarding operational changes	<a href="#">CR Report 2016: Involving employees</a>	We notify our employees and/or employee representative bodies promptly of any significant company agreements. In 2015, the Executive Board of Linde AG and the European Works Council entered into an agreement on minimum standards for efficiency improvement measures which have an impact on staff numbers. These measures should be implemented in a socially responsible manner. Provisions set out in the agreement include an open and transparent information and consultation process to be conducted with employee representatives and ways in which compulsory redundancies can be avoided.	ENVIRONMENT
					EMPLOYEES
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## Social indicators: Labour practices and decent work

UNGC	GRI	GRI indicator	Links and downloads	Explanations
<i>Occupational health and safety</i>				
1	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">Financial Report 2016: Safety risks (p. 89)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Occupational safety and health protection</a> <a href="#">Linde website: Labour standards</a> <a href="#">Linde website: Occupational health and safety</a> <a href="#">Policy on health, safety and environmental protection</a>	
1	G4-LA5	Workforce represented in formal joint management-worker health and safety committees	<a href="#">CR Report 2016: Involving employees</a>	We do not record any key figures for this GRI indicator, as it does not constitute a strategically meaningful control parameter for our Group.
1	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Transport</a> <a href="#">CR Report 2016: Occupational safety and health protection</a> <a href="#">CR Report 2016: Key figures</a>	We record and publish those key figures which are relevant to the evaluation and improvement of our health and safety performance. These include the number of workplace accidents per million hours worked by employees and contractors (LTIR), the number of workplace accidents resulting in fatalities of employees and contractors, the number of accidents with at least one day of absence, etc. We do not break down these figures by region, as we classify this information as confidential. Where it is relevant for The Linde Group, we provide gender-specific data, such as the percentage of female staff and the percentage of women in senior management positions.
1	G4-LA7	Workers with a high incidence or high risk of diseases	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Occupational safety and health protection</a>	
1	G4-LA8	Health and safety topics covered in formal agreements with trade unions	<a href="#">CR Report 2016: Involving employees</a> <a href="#">CR Report 2016: Key figures</a>	We report the proportion of employees covered by collective wage agreements. We do not record other data included as part of this GRI indicator, as this information does not constitute a strategically meaningful control parameter for our Group.

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UNGC	GRI	GRI indicator	Links and downloads	Explanations	
<b>Training and education</b>					
	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">Financial Report 2016: Personnel opportunities (p. 71 ff.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Employees across the world</a> <a href="#">CR Report 2016: Winning talent</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Competing for talent</a>		CONTENTS
	G4-LA9	Hours of training and education per employee	<a href="#">CR Report 2016: Involving employees</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Key figures</a>	Where it is relevant for The Linde Group, we provide gender-specific data, such as the percentage of female staff and the percentage of women in senior management positions. We also provide information on the number of women participating in talent programmes. We do not break down this information further by employee category, as it does not constitute a strategically meaningful control parameter for our Group.	THE REPORT
	G4-LA10	Lifelong learning	<a href="#">CR Report 2016: Winning talent</a>		ABOUT LINDE
	G4-LA11	Performance and career development reviews	<a href="#">CR Report 2016: Winning talent</a>	We conduct regular staff appraisals to ensure that our employees are presented with targeted professional development opportunities. To date, we have not reported any data relating to these appraisals.	GOVERNANCE
					SAFETY
<b>Diversity and equal opportunity</b>					
1;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Values and standards</a> <a href="#">Linde website: Diversity</a> <a href="#">Linde website: Labour standards</a> <a href="#">Code of Ethics (p. 38 f.)</a> <a href="#">Position paper on human rights</a>		ENVIRONMENT
1;6	G4-LA12	Composition of governance bodies	<a href="#">Financial Report 2016: Diversity on the Supervisory Board (p. 17 f.)</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Key figures</a> <a href="#">Linde website: Executive Board and Supervisory Board</a>	We report on all aspects which are key to our diversity management. We classify information on our employees' membership of minority groups as confidential. The composition of the Executive Board and the Supervisory Board by gender, age and origin is published on our website.	EMPLOYEES
					SOCIETY
					KEY FIGURES

UNGC	GRI	GRI indicator	Links and downloads	Explanations
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1;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">Linde website: Diversity</a> <a href="#">Code of Ethics (p. 38 f.)</a> <a href="#">Position paper on human rights</a>	
1;6	G4-LA13	Ratio of the basic salary and remuneration of women to men	<a href="#">CR Report 2016: Remuneration and social benefits</a> <a href="#">CR Report 2016: Diversity</a>	<p>The remuneration of individual Linde Group employees is dependent on their function and their qualifications and is not determined by gender-specific aspects. We regularly review remuneration in the regions where we operate to ensure that it is appropriate and in line with market conditions. We do not publish data relating to this issue, as we classify this information as confidential.</p>

1;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Transport</a> <a href="#">CR Report 2016: Raw materials</a> <a href="#">Linde website: Supply chain</a> <a href="#">Code of Conduct for Suppliers</a>	In 2013, we commissioned an external analysis of sustainability risks in our supply chain. This enables us to classify every individual supplier according to its risk potential in the area of sustainability. This enables us to classify individual suppliers according to their risk potential in the area of sustainability.
1;6	G4-LA14	New suppliers screened	<a href="#">CR Report 2016: Supply chain</a> <a href="#">Code of Conduct for Suppliers</a>	In 2016, all new suppliers automatically signed up to the Code of Conduct for Suppliers. There is also a continual process in place to ensure that those suppliers with whom contracts were signed prior to 2013, the year the Code of Conduct for Suppliers was introduced, agree to be bound by the Code.
1;6	G4-LA15	Impacts for labour practices in the supply chain	<a href="#">CR Report 2016: Supply chain</a>	By way of example, we report key figures on impacts in the supply chain and measures taken for contractors on construction sites.

## Social indicators: Labour practices and decent work

UNGC	GRI	GRI indicator	Links and downloads	Explanations
<b>Labour practices grievance mechanisms</b>				
1;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Linde Integrity Line guideline (p. 3)</a>	
1;6	G4-LA16	Grievances about labour practices	<a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Linde Integrity Line guideline (p. 7)</a>	

## Social indicators: Human rights

UNGC	GRI	GRI indicator	Links and downloads	Explanations
<b>Investment</b>				
1;2;3; 4;5;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Values and standards</a> <a href="#">Linde website: UN Global Compact</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Position paper on human rights</a> <a href="#">Code of Ethics (p. 38)</a> <a href="#">Code of Conduct for Suppliers</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.
1;2;3; 4;5;6	G4-HR1	Investment agreements and contracts that include human rights clauses	<a href="#">CR Report 2016: Supply chain</a>	
1;2;3; 4;5;6	G4-HR2	Employee training on human rights policies	<a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">Code of Ethics (p. 8)</a>	In this report, we provide information on the number of training sessions completed on our Code of Ethics, which also covers the issue of human rights. Moreover, we report the proportion of employees working in procurement who were provided with training on the content of the Code of Conduct for Suppliers. In addition, Linde is training security personnel on this subject (see GRI indicator G4-HR7).

## Social indicators: Human rights

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
<b>Non-discrimination</b>					
1;2;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">Linde website: Diversity</a> <a href="#">Linde website: Labour standards</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Position paper on human rights</a> <a href="#">Code of Ethics (p. 39)</a> <a href="#">Code of Conduct for Suppliers</a>		CONTENTS
1;2;6	G4-HR3	Incidents of discrimination	<a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Diversity</a> <a href="#">CR Report 2016: Key figures</a>		THE REPORT
<b>Freedom of association and collective bargaining</b>					
1;2;6	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Involving employees</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">Linde website: Involving employees</a> <a href="#">Linde website: Labour standards</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Position paper on human rights</a> <a href="#">Code of Ethics (p. 38)</a> <a href="#">Code of Conduct for Suppliers</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.	ABOUT LINDE
	G4-HR4	Risk to the right to exercise freedom of association and collective bargaining	<a href="#">CR Report 2016: Involving employees</a> <a href="#">Linde website: Labour standards</a>	In our Code of Ethics, which is binding on all employees, and our Code of Conduct for Suppliers, we set out our commitment to safeguarding freedom of assembly and association. In 2016 again, we investigated risks relating to the right to freedom of assembly and association as part of a global labour and social standards survey. In 2013, Linde commissioned an external analysis of sustainability risks in the supply chain which focused on country and product risks and also covered the right to freedom of assembly and association.	GOVERNANCE
					SAFETY
					ENVIRONMENT
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					SOCIETY
					KEY FIGURES

UNGC	GRI	GRI indicator	Links and downloads	Explanations
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1;2;5	G4-DMA	Management approach	<p>Financial Report 2016: Responsibilities (p. 204 f.)</p> <p><a href="#">CR Report 2016: Sustainability strategy</a></p> <p><a href="#">CR Report 2016: Sustainability organisation</a></p> <p><a href="#">CR Report 2016: Human rights and labour standards</a></p> <p><a href="#">CR Report 2016: Compliance</a></p> <p><a href="#">CR Report 2016: Supply chain</a></p> <p><a href="#">Linde website: Labour standards</a></p> <p><a href="#">Linde website: Integrity Line</a></p> <p><a href="#">Position paper on human rights</a></p> <p><a href="#">Code of Ethics (p. 38)</a></p> <p><a href="#">Code of Conduct for Suppliers</a></p>	<p>This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.</p>
1;2;5	G4-HR5	Risks for incidents of child labour	<p><a href="#">CR Report 2016: Human rights and labour standards</a></p> <p><a href="#">Linde website: Labour standards</a></p>	<p>In our Position paper on human rights, in our Code of Ethics, which is binding on all employees, and in our Code of Conduct for Suppliers, we set out our commitment to respecting human rights worldwide. In 2016 again, we investigated child labour risks as part of a global labour and social standards survey. In 2013, Linde commissioned an external analysis of sustainability risks in the supply chain which focused on country and product risks and also covered the subject of child labour.</p>

1;2;4	G4-DMA	Management approach	<p>Financial Report 2016: Responsibilities (p. 204 f.)</p> <p><a href="#">CR Report 2016: Sustainability strategy</a></p> <p><a href="#">CR Report 2016: Sustainability organisation</a></p> <p><a href="#">CR Report 2016: Human rights and labour standards</a></p> <p><a href="#">CR Report 2016: Compliance</a></p> <p><a href="#">CR Report 2016: Supply chain</a></p> <p><a href="#">Linde website: Labour standards</a></p> <p><a href="#">Linde website: Integrity Line</a></p> <p><a href="#">Position paper on human rights</a></p> <p><a href="#">Code of Ethics (p. 38)</a></p> <p><a href="#">Code of Conduct for Suppliers</a></p>	<p>This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.</p>
1;2;4	G4-HR6	Risks for incidents of forced or compulsory labour	<p><a href="#">CR Report 2016: Human rights and labour standards</a></p> <p><a href="#">Linde website: Labour standards</a></p>	<p>In our Position paper on human rights, in our Code of Ethics, which is binding for all employees, and in our Code of Conduct for Suppliers, we set out our commitment to respecting human rights worldwide. In 2016 again, we investigated forced labour risks as part of a global labour and social standards survey. In 2013, Linde commissioned an external analysis of sustainability risks in the supply chain which focused on country and product risks and also covered the subject of forced labour.</p>



## Social indicators: Human rights

UNGC	GRI	GRI indicator	Links and downloads	Explanations
<b>Security practices</b>				
1;2	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Labour standards</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Position paper on human rights</a> <a href="#">Code of Ethics (p. 37)</a> <a href="#">Code of Conduct for Suppliers</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us. Security personnel at our sites have to undergo a rigorous vetting process. Our security officers must respect human dignity and human rights and act in accordance with local laws and regulations. In safeguarding the security of our sites, we comply with international standards such as the UN Basic Principles on the Use of Force. Linde security personnel all receive training on these issues.
1;2	G4-HR7	Security personnel trained		Security personnel at our sites have to undergo a rigorous vetting process. Our security officers must respect human dignity and human rights and act in accordance with local laws and regulations. In safeguarding the security of our sites, we comply with international standards such as the UN Basic Principles on the Use of Force. Linde security personnel all receive training on these issues.
<b>Indigenous rights</b>				
1;2	G4-DMA	Management approach		This aspect is not one of the key sustainability topics for The Linde Group, as our business activities are not associated with any violations of indigenous rights. For this reason, we do not provide any further information on this topic.
1;2	G4-HR8	Incidents of violations involving the rights of indigenous peoples		We are not aware of any instances where the rights of indigenous peoples were violated in 2016.
<b>Assessment</b>				
1;2	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Labour standards</a>	
1;2	G4-HR9	Review of operations	<a href="#">CR Report 2016: Human rights and labour standards</a>	

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*Supplier human rights assessment*

1;2	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">Linde website: Supply chain</a> <a href="#">Linde website: Code of Conduct for Suppliers</a> <a href="#">Code of Conduct for Suppliers</a>	In 2013, we commissioned an external analysis of sustainability risks in our supply chain. This enables us to classify every individual supplier according to its risk potential in the area of sustainability.
1;2;3;4;5;6	G4-HR10	Suppliers screened	<a href="#">CR Report 2016: Supply chain</a>	In 2016, all new suppliers automatically signed up to the Code of Conduct for Suppliers. There is also a continual process in place to ensure that those suppliers with whom contracts were signed prior to 2013, the year the Code of Conduct for Suppliers was introduced, agree to be bound by the Code.
1;2;3;4;5;6	G4-HR11	Human rights impacts in the supply chain	<a href="#">CR Report 2016: Supply chain</a>	By way of example, we report key figures on impacts in the supply chain and measures taken for contractors on construction sites.

*Human rights grievance mechanisms*

1;2	G4-DMA	Management approach	<a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a> <a href="#">Linde website: Code of Conduct for Suppliers</a> <a href="#">Linde website: Compliance</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Linde Integrity Line guideline</a>	
1;2	G4-HR12	Grievances	<a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Human rights and labour standards</a>	

## Social indicators: Society

UNGC	GRI	GRI indicator	Links and downloads	Explanations
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*Local communities*

	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Production</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">CR Report 2016: Social commitment</a> <a href="#">Linde website: Social commitment</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.
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## Social indicators: Society

UNGC	GRI	GRI indicator	Links and downloads	Explanations
	G4-S01	Operations with local community engagement programmes	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Social commitment</a>	Around the world, we review the local and global impact of our business activities on people and the environment. Our community investment programmes are coordinated at a regional level. These involve voluntary work with communities in the vicinity of our business locations. The needs of those local communities are identified in consultation with our stakeholders.
	G4-S02	Impacts on local communities	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a>	Our business operations have no significant negative impacts on local communities beyond the risks outlined in the environment and safety section. We monitor and minimise potential risks through our corporate responsibility management.

## Anti-corruption

10	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Compliance</a> <a href="#">Code of Ethics (p. 34)</a>	
10	G4-S03	Assessment of operations for risks related to corruption	<a href="#">CR Report 2016: Compliance</a> <a href="#">Financial Report 2016: Compliance (p. 15)</a>	A binding risk analysis process (compliance risk assessment) was introduced in 2014, covering the issues of general compliance, antitrust law and corruption.
10	G4-S04	Communication and training	<a href="#">CR Report 2016: Compliance</a> <a href="#">Code of Ethics (p. 9)</a>	Our aim is to train 100 percent of our employees on our Code of Ethics. All employees receive a copy of the Code of Ethics when they start working at the company and must confirm in writing that they have read and understood it. Furthermore, we organise a Group-wide e-learning programme and classroom-based courses to familiarise our employees with the Code of Ethics. We report total figures for both. We do not evaluate the annual percentage as the effort involved in doing so would be disproportionate to the benefit.
10	G4-S05	Confirmed incidents of corruption	<a href="#">Financial Report 2016: Legal risks (p. 93)</a> <a href="#">Financial Report 2016: Litigation (p. 175)</a>	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.

## Social indicators: Society

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
<b>Public policy</b>					
1;2;3; 4;5;6; 7;8;9; 10	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Social commitment</a> <a href="#">CR Report 2016: UN Global Compact</a> <a href="#">Linde website: Stakeholders</a> <a href="#">Code of Ethics (p. 42)</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.	CONTENTS
10	G4-S06	Political contributions	<a href="#">CR Report 2016: Stakeholders</a> <a href="#">CR Report 2016: Social commitment</a>		THE REPORT
<b>Anti-competitive behaviour</b>					
10	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">Linde website: Compliance</a> <a href="#">Code of Ethics (p. 16)</a>		ABOUT LINDE
10	G4-S07	Legal actions	Financial Report 2016: Legal risks (p. 93) Financial Report 2016: Litigation (p. 175)	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.	GOVERNANCE
<b>Compliance</b>					
	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Values and standards</a> <a href="#">Linde website: Compliance</a> <a href="#">Code of Ethics (p. 7 ff.)</a>		SAFETY
	G4-S08	Monetary value of fines and non-monetary sanctions	Financial Report 2016: Legal risks (p. 93) Financial Report 2016: Litigation (p. 175)	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.	ENVIRONMENT
<b>Supplier assessment for impacts on society</b>					
	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Sustainability goals</a> <a href="#">CR Report 2016: Supply chain</a> <a href="#">CR Report 2016: Transport</a> <a href="#">Linde website: Supply chain</a> <a href="#">Code of Conduct for Suppliers</a>	In 2013, we commissioned an external analysis of sustainability risks in our supply chain. This enables us to classify every individual supplier according to its risk potential in the area of sustainability.	EMPLOYEES
					SOCIETY
					KEY FIGURES

## Social indicators: Society

UNGC	GRI	GRI indicator	Links and downloads	Explanations
	G4-S09	Suppliers screened	<a href="#">CR Report 2016: Supply chain</a>	In 2016, all new suppliers automatically signed up to the Code of Conduct for Suppliers. There is also a continual process in place to ensure that those suppliers with whom contracts were signed prior to 2013, the year the Code of Conduct for Suppliers was introduced, agree to be bound by the Code.
	G4-S010	Impacts on society in the supply chain	<a href="#">CR Report 2016: Supply chain</a>	By way of example, we report key figures on impacts in the supply chain and measures taken for contractors on construction sites.

## Grievance mechanisms for impacts on society

	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Integrity Line</a> <a href="#">Linde Integrity Line guideline (p. 1 ff.)</a>	
	G4-S011	Grievances	<a href="#">CR Report 2016: Compliance</a>	

## Social indicators: Product responsibility

UNGC	GRI	GRI indicator	Links and downloads	Explanations
1	G4-DMA	Management approach	Financial Report 2016: Responsibilities (p. 204 f.) <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: Compliance</a> <a href="#">Linde website: Product stewardship</a> <a href="#">Code of Ethics (p. 21)</a> <a href="#">Policy on health, safety and environmental protection</a>	
1	G4-PR1	Assessment of the health and safety impacts of products and services	<a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: REACH</a>	
1	G4-PR2	Compliance with regulations	Financial Report 2016: Legal risks (p. 93) Financial Report 2016: Litigation (p. 175)	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.

## Social indicators: Product responsibility

UNGC	GRI	GRI indicator	Links and downloads	Explanations	
<b>Product and service labelling</b>					
8	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Sustainability strategy</a> <a href="#">CR Report 2016: Sustainability organisation</a> <a href="#">CR Report 2016: Safety</a> <a href="#">CR Report 2016: Environmental protection</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: REACH</a> <a href="#">Linde website: Product stewardship</a> <a href="#">Policy on health, safety and environmental protection</a>		CONTENTS
8	G4-PR3	Labelling of products	<a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: REACH</a>		THE REPORT
8	G4-PR4	Compliance with regulations	Financial Report 2016: Legal risks (p. 93) Financial Report 2016: Litigation (p. 175)	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.	ABOUT LINDE
	G4-PR5	Results of surveys measuring customer satisfaction	<a href="#">CR Report 2016: Customers</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: Stakeholders</a>	We systematically measure customer satisfaction levels worldwide as part of our customer experience management programme. We use the results of surveys, our customer complaint management service and other information channels to help us improve our products and offerings.	GOVERNANCE
<b>Marketing communications</b>					SAFETY
	G4-DMA	Management approach	<a href="#">CR Report 2016: Compliance</a> <a href="#">Code of Ethics (p. 23)</a>	This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.	ENVIRONMENT
	G4-PR6	Sale of banned or disputed products	<a href="#">Code of Ethics (p. 26)</a>		EMPLOYEES
	G4-PR7	Compliance with regulations	Financial Report 2016: Legal risks (p. 93) Financial Report 2016: Litigation (p. 175)	In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.	SOCIETY
					KEY FIGURES

## Social indicators: Product responsibility

UNGC	GRI	GRI indicator	Links and downloads	Explanations
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*Customer privacy*

1	G4-DMA	Management approach	<a href="#">CR Report 2016: Compliance</a> <a href="#">Linde website: Compliance</a> <a href="#">Code of Ethics (p. 36)</a>	<p>This topic is relevant to Linde in the context of sustainability and is covered by our management systems. As it is not one of the most relevant sustainability topics for our Group, we only report on individual aspects in this area which are relevant to us.</p> <p>In our Code of Ethics, we set out our commitment to the protection of personal data. We have therefore appointed a senior data protection officer. We keep our employees informed about data protection requirements and provide training for those who come into contact with personal data in their professional capacity.</p>
1	G4-PR8	Complaints	<a href="#">CR Report 2016: Compliance</a>	<p>In this report, we disclose the total number of complaints made to the Linde Integrity Line and analyse them by sub-category. We are not aware of any reports regarding breaches of customer privacy and losses of customer data.</p>

*Compliance*

	G4-DMA	Management approach	<a href="#">Financial Report 2016: Responsibilities (p. 204 f.)</a> <a href="#">CR Report 2016: Compliance</a> <a href="#">CR Report 2016: Product stewardship</a> <a href="#">Linde website: Compliance</a> <a href="#">Linde website: Product stewardship</a> <a href="#">Code of Ethics (p. 7 ff.)</a>	
	G4-PR9	Fines	<a href="#">Financial Report 2016: Legal risks (p. 93)</a> <a href="#">Financial Report 2016: Litigation (p. 175)</a>	<p>In our Financial Report, we disclose the most important current or foreseeable legal or arbitration proceedings in which The Linde Group or one of its Group companies is involved.</p>

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# INDEPENDENT ASSURANCE REPORT

GRI G4-33

To the Management of The Linde Group, Munich

We have been engaged to perform an independent limited assurance engagement on selected environmental and safety performance indicators, including explanatory notes, published in the online Linde Corporate Responsibility Report 2016 (further "Report"), for the business year 2016, of The Linde Group, Munich (further "Linde").

The following selected environmental and safety performance indicators are included in the scope of our assurance engagement and marked with the symbol ✓ in the Report, available at <http://corporateresponsibility.linde.com/cr-report/2016/>:

- Use of resources:
  - Energy
  - Water
  - Resources and materials
- Emissions:
  - Direct greenhouse gas emissions (Scope 1)
  - Indirect greenhouse gas emissions (Scope 2)
  - Other indirect greenhouse gas emissions (Scope 3)
  - Emissions to air
  - Emissions to water
- Waste and recycling
- Transport safety
  - Number of serious traffic incidents involving trucks per 1 million km
- Occupational health and safety:
  - Workplace accidents by employees (per million working hours)
  - Number of workplace accidents by contractors with at least one day of absence
  - Number of fatalities involving employees
  - Number of fatalities involving contractors
- Certified sites
  - Production sites certified to ISO 9001
  - Production sites certified to ISO 14001
  - Production sites certified to OHSAS 18001

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## Management's Responsibility for the Report

The legal representatives of Linde are responsible for the preparation of the Report in accordance with the reporting criteria. Linde applies the principles and standard disclosures of the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI) and the Corporate Accounting and Reporting Standard (Scope 1 and 2) of the Greenhouse Gas Protocol Initiative by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), in combination with internal guidelines (further: the "Reporting Criteria").

This responsibility includes the selection and application of appropriate methods for sustainability reporting as well as making assumptions and estimates for individual qualitative and quantitative sustainability disclosures, which are reasonable under the circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

## Independence and quality assurance on the part of the auditing firm

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA-Code), which is founded on the fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The quality assurance system of the KPMG AG Wirtschaftsprüfungsgesellschaft is based on the International Standard on Quality Control 1 "Quality Control for Audit, Assurance and Related Service Practices" (ISQC 1) and, in addition on national statutory requirements and professional standards, especially the Professional Code for Certified Accountants as well as the joint statement of WPK (Chamber of Public Accountants) and IDW (Institute of Public Auditors in Germany): Requirements for quality assurance in the auditing practice (VO 1/2006).

## Practitioner's Responsibility

Our responsibility is to express a conclusion based on our work performed and the evidences obtained on the selected environmental and safety performance indicators marked with the symbol "✓" in the Report, available at <http://corporateresponsibility.linde.com/cr-report/2016/>.

## Nature and extent of the assurance engagement

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and the International Standard on Assurance Engagements ISAE) 3410: "Assurance Engagements on Greenhouse Gas Statements" of the International Auditing and Assurance Standards Board (IAASB). These standards require that we comply with our professional duties and plan and perform the assurance engagement to obtain a limited level of assurance to preclude that the information above is not in accordance, in material respects, with the aforementioned Reporting Criteria. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement. The choice of audit activities is subject to the auditor's own judgement. This includes the assessment of the risk of material misstatement in the Report under consideration of the Reporting Criteria.

Within the scope of our engagement, we performed amongst others the following procedures when conducting the limited assurance engagement:

- A risk analysis, including a media search, to identify relevant information on Linde's sustainability performance in the reporting period.
- Evaluation of the design and implementation of the systems and processes for the collection, processing and control of selected environmental and safety performance indicators included in the scope of this engagement, including the consolidation of the data.
- Inquiries of personnel on corporate level responsible for providing the data and information, carrying out internal control procedures and consolidating the data and information, including the explanatory notes.
- Evaluation of internal and external documentation and certificates, to determine whether the qualitative and quantitative disclosures are supported by sufficient evidence.
- An analytical review of the data and trend explanations submitted by all sites for consolidation at corporate level.
- Visits to five selected production sites in the United Arab Emirates (3), Brazil (1), Colombia (1) and four selected regions in Eastern Asia/China, Eastern Europe and Middle East, North and South America, to review the source data and the design and implementation of validation procedures at local and regional level.
- Evaluation of the overall presentation of the selected environmental and safety performance indicators in the Report.

## Conclusion

Based on the procedures performed and evidence received, nothing has come to our attention that causes us to believe that the selected environmental and safety performance indicators for the business year 2016, including explanatory notes, marked with the symbol "✓" in the Report, are, in all material respects, not prepared in accordance with the Reporting Criteria.

## Purpose of the assurance report

This assurance report is issued based on an assurance engagement agreed upon with Linde. The assurance engagement to obtain limited assurance is issued on purpose of Linde and the assurance report is solely for information purposes of Linde on the results of the assurance engagement.

## Limited liability

This assurance report must not be used as basis for (financial) decision-making by third parties of any kind. We have responsibility only towards Linde. We do not assume any responsibility for third parties.

Munich, March 9, 2017

KPMG AG  
Wirtschaftsprüfungsgesellschaft

Simone Fischer  
Wirtschaftsprüferin  
[German Public Auditor]

ppa.  
Christian Hell

# GLOSSARY

## A

### Air separation plants

Air separation plants use Linde processes to produce oxygen, nitrogen and argon.

## C

### CO<sub>2</sub> equivalent (CO<sub>2</sub>e)

Unit of measurement used to express the effect different greenhouse gases have on the climate compared with a carbon dioxide (CO<sub>2</sub>) baseline.

### Conflict minerals

The US Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) defines conflict minerals as raw materials exploited and traded in the Democratic Republic of Congo or neighbouring countries which finance conflict. The Dodd-Frank Act applies to the following raw materials and ores from which they are extracted: tantalum (coltane), tin (cassiterite), tungsten (wolframite) and gold.

### Contractors

Employees from third party firms who provide services on Linde's behalf, especially transport services.

### Core labour standards of the International Labour Organisation (ILO)

The core principles of freedom of association, the elimination of forced labour, the abolition of child labour and the elimination of discrimination in respect of employment and occupation are identified in eight conventions. These set out the fundamental rights of employees which member states of the organisation are required to implement following ratification.

## D

### Defined benefit plans

Pension plans under which an enterprise/employer defines an amount of pension benefit to be provided as a function of one or more factors such as the age, length of service and salary of the employee.

### Diversity

At Linde, diversity is understood to be the diverse composition of its staff – which comprises men and women of all ages, of different nationalities and with different ethnic backgrounds, and with different religions and world views.

### Dodd-Frank Act

The Dodd-Frank Wall Street Reform and Consumer Protection Act is a federal law which came into force in the United States in 2010, which sets out reporting and disclosure requirements for companies quoted on the US stock exchange with regard to the use of conflict minerals tin, tantalum, gold and tungsten.

## E

### Emissions Trading System

The European Union's Emissions Trading System is a climate protection tool aimed at reducing greenhouse gas

emissions at the lowest possible economic cost.

### Energy Efficiency Directive (EDD)

The European Union has set itself the target of saving 20 percent of its primary energy consumption by 2020 and made this measure into one of its five headline targets in its Europe 2020 strategy for smart, sustainable and inclusive growth. This Directive 2012/27/EU establishes a set of binding measures with regard to certain aspects of the EU's energy efficiency plan, in order to make a significant contribution to the achievement of the EU's energy efficiency target.

## F

### FSSC 22000

FSSC 22000 Food Safety System Certification demonstrates that companies comply with a number of food safety requirements. The certification is based on existing international food safety standards (such as ISO 22000 and PAS 220) and is recognised by the GFSI (Global Food Safety Initiative).

### Fuel cell

A device which produces water from hydrogen and from oxygen in the air and in the course of this process releases usable electrical energy.

## G

### Global Product Strategy (GPS)

The Global Product Strategy of the International Council of Chemical Associations is designed to establish uniform global standards and procedures for companies in order to promote the safe handling of chemicals.

### Global Reporting Initiative (GRI)

International initiative founded in 1997 by a number of stakeholders with the aim of developing recognised and comparable reporting guidelines for organisations on economic, social and environmental activities.

### Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

The United Nations' GHS is a globally harmonized system for the classification of chemicals and for their labelling on packaging and in safety data sheets. A global method of classification with standard hazard pictograms and text should minimise the risk to human health and the environment during the production, transport and use of chemicals and hazardous substances worldwide.

### Good Manufacturing Practice

Good manufacturing practice refers to quality assurance guidelines which apply to the manufacture of pharmaceutical products and active ingredients.

### Greenhouse Gas Protocol

Globally recognised standard designed to manage and quantify greenhouse gas emissions. The Greenhouse Gas Protocol originated from an initiative led by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI).

### Guiding Principles on Business and Human Rights

The UN Guiding Principles on Business and Human Rights provide a consensual framework designed to promote human rights regulation in major business enterprises in various contexts. They require states to protect human rights (even against threats from economic players) and they require business enterprises to respect human rights and award the parties concerned access to remedy when business-related human rights abuses occur.

## H

### HyCO plants

A collective term for plants which produce hydrogen, carbon monoxide and synthesis gas. HyCO plants include in particular steam reformers, partial oxidation plants and methanol crackers.

## I

### Integrity Line

A Linde system which employees and external stakeholders can use to report any doubts or suspicions. If an internal investigation reveals that the doubts or suspicions raised were justified, a prescribed process within a set timeframe is used to determine what measures should be taken and monitors their implementation.

### ISO 14001

The ISO 14001 standard is the basis for the design, introduction, monitoring and ongoing development of environmental management systems. It sets out requirements which are applicable to any organisation, regardless of its type or size or the specific geographical, cultural or social conditions under which it operates. The overall objective of the standard is to promote environmental protection and to reduce the environmental impact of companies – in accordance with economic, social and political requirements. At the same time, the ISO 14001 standard is the basis for the certification of environmental management systems.

### ISO 50001

The aim of an energy management system which complies with ISO 50001 is continual improvement in the energy performance of a company. The standard provides a set of requirements that enables companies to introduce, operate and continually optimise their energy management systems. If the implementation of this systematic approach is successful, a company is able to improve its energy performance, increase its energy efficiency and at the same time optimise its energy use.

### ISO 9001

The ISO 9001 standard sets out the minimum requirements to be implemented by companies for a quality management system which meets customer requirements and other requirements relating to the quality of the goods and services.

## K

### Kopernikus projects

The “Kopernikus Projects for the Energy Transition” are the framework for technological and economic solutions for the conversion of the energy system in Germany developed jointly by science, economy and civil society. The research initiative includes projects in four key areas: the development of power supply systems, the storage of surplus renewable energy through conversion to other energy carriers, the adjustment of industrial processes to a fluctuating energy supply and the improved interplay of all sectors of the energy system.

## L

### Lean Six Sigma Black Belt

A Lean Six Sigma Black Belt is the project manager of complex improvement projects conducted by means of Lean Six Sigma, a methodology that relies on a collaborative team effort to improve performance by systematically removing waste.

### LNG

Liquefied Natural Gas. LNG is regarded as a promising fuel of the future because of its high energy density, constant calorific value and high level of purity.

## M

### Major Hazards Review Programme

Linde set up this programme to ensure the safety of its production processes. The MHRP allows the Group to identify promptly potential risks that might result in accidents or damage to property or to the environment, and to introduce appropriate safety and control measures.

## N

### Near miss

An undesired event which, under slightly different circumstances, could have resulted in harm to people, harm to the environment, damage to property or loss to production.

## O

### OHSAS 18001

The OHSAS 18001 standard is an international occupational health and safety management system specification for companies. OHSAS 18001 focuses on the protection of workers and on occupational health and safety.

### Olefin plant

Petrochemical plant for the production of olefins such as ethylene and propylene from hydrocarbons.

## P

### Polymer electrolyte membrane electrolysis

In polymer electrolyte membrane electrolysis, distilled water is split using electricity from electrodes into oxygen, free electrons and positively charged hydrogen ions (protons). The ions pass through a membrane and combine with the electrons to form hydrogen.

## R

### RBU

Linde's Gases Division has three reportable segments: EMEA, Asia/Pacific and Americas. These are divided into nine Regional Business Units (RBUs): Africa & UK, Central Europe, Northern Europe, Southern Europe, Middle East & Eastern Europe, South Asia & ASEAN, South Pacific, East Asia and Americas.

### REACH

EU Regulation on the Registration, Evaluation and Authorisation of Chemicals which came into force on 1 June 2007, replacing the former legislative framework for chemicals. According to this regulation, companies which manufacture or import chemical substances into the EU in quantities of more than one tonne per annum have to test those chemicals for their impact on health and on the environment and to register them.

### Restriction of Hazardous Substances (RoHS)

The revised RoHS EU Directive (2011/65/EU) is designed to restrict the use of certain hazardous substances in electrical and electronic equipment.

### ROCE

Return on capital employed.

## S

### Serious transport incidents

Transport-related incidents, such as traffic accidents, which have a considerable impact on the health of the parties concerned, result in environmental emissions which must be reported or give rise to a certain level of costs.

### SHEQ

Abbreviation for Safety, Health, Environment and Quality.

### Steam reforming

The most widely used process for manufacturing hydrogen-rich synthesis gas from light hydrocarbons.

### Synthesis gas

Gas mixture of carbon monoxide and hydrogen or nitrogen and hydrogen used to produce methanol, ammonia and other basic chemicals.

## U

### UN Global Compact

The United Nations (UN) Global Compact is a global alliance of organisations and businesses which aims to protect human rights, ensure compliance with labour and social standards, encourage environmental responsibility and fight against corruption.

### UN Human Rights Charter

The Universal Declaration of Human Rights, also known as the Declaration of Human Rights or UN Human Rights Charter or UDHR, comprises recommendations made by the United Nations (which are not legally binding) about general principles relating to human rights. It comprises 30 articles and sets out basic positions about the rights to which every human being is entitled, irrespective of "race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status," and irrespective of the legal relationship they have with the country in which they reside.

## V

### VOCs

Abbreviation for a variety of volatile organic compounds, many of which are used as solvents or thinners in paints and varnishes. They are precursors of ground level ozone, also known as summer smog.

## W

### WRI

The World Resources Institute is an organisation which focuses among other things on global warming, ecosystems, renewable energy and the use of resources and seeks to motivate and support companies to achieve more sustainable management.

# LEGAL NOTICE

GRI G4-5

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Professor Dr Aldo Belloni (Chief Executive Officer)  
 Dr Christian Bruch  
 Bernd Eulitz  
 Sanjiv Lamba

## Supervisory Board

Professor Dr Wolfgang Reitzle (Chairman)

## Registered office of the company

Munich. Entered in the commercial register at the local court in Munich, HRB 169850

## Value-added tax (VAT) identification number

DE 113822613

## Publication

The report was published on 9 March 2017 and is available in German and English.

## Statements relating to the future

This report contains statements relating to the future which are based on management's current estimates about future developments. These statements are not to be understood as guarantees that these expectations will prove to be true. The future development and the results actually achieved by The Linde Group and its affiliated companies are dependent on a number of risks and uncertainties and may therefore deviate significantly from the statements relating to the future. Linde has no plans to update its statements relating to the future, nor does it accept any obligation to do so.

## Trademarks

All mentioned trademarks on this website are EU-registered trademarks of The Linde Group. Trademark registrations and their status may differ by location.

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