
04

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ABB Report Review Panel statement

Introduction

ABB has a long history of stakeholder engagement. The company has conducted a variety of stakeholder dialogues and regularly consults a wide range of stakeholders to challenge strategy, and to review material issues and its sustainability performance reports.

In 2015, ABB launched a Report Review Panel (panel), to advance the company's role as a leading contributor to sustainability in the utility, industry and transport of infrastructure sectors.

The panel is designed to provide ABB with an external forum for discussion on its sustainability approach; provide material feedback on progress being made; identify ways to help achieve its 2020 ambitions; and to agree upon a panel statement to be published as part of ABB's annual Sustainability Performance Report.

The panel members represent key stakeholders of the company and are selected for their level of know-how and skills relevant to ABB.

The panel consists of the following members (two members are new to the panel):

- **Jermyn Brooks**, Chair Business Advisory Board, Transparency International
- **Prof. Volker Hoffmann**, Professor for Sustainability and Technology, ETH Zurich
- **Dr. Ajay Mathur**, Director General, The Energy and Resources Institute (TERI)
- **Shirley Mills**, Vice President, Equity Research Analyst, The Boston Company Asset Management (new)
- **Anna Nilsson**, Head of Sustainability, Swedbank Robur
- **Gianluigi Ravenna**, VP Account Management, Enics
- **Sheri Straw**, Managing Director, T&D Supply Chain, Duke Energy (new)
- **Shankar Venkateswaran**, Chief of Tata Sustainability Group, Tata Group

This statement provides an assessment of ABB's Sustainability Performance Report 2016 and reflects the views of the panel members as individuals, and not those of their respective organizations. The panel is a consensus group: Its proposals need to be approved by all of its members. If no consensus can be reached, diverging opinions will be clearly stated.

The review did not include verification of performance data underlying the report as DNV GL was commissioned to undertake independent assurance of the Sustainability Performance Report 2016. The Panel welcomes the inclusion of external assurance as a means of providing stakeholders with further confidence.

The engagement process started in September 2016, when panel members were invited to share their views of ABB's non-financial reporting and to provide feedback on the Sustainability Performance Report 2016. In February 2017, the Panel also provided input to the draft report through another conference call. Members of ABB's sustainability team attended both calls.

Based on the discussions and the feedback of panel members, this panel statement was drafted and circulated to all panel members for approval.

To ensure independence Barbara Dubach, from engagement, facilitated the external panel process.

The panel members are pleased to share their independent opinions on ABB's Sustainability Performance Report 2016.

ABB's sustainability approach

With its products and services, ABB is well positioned to become an important player in industrial digitalization and to address some of the most pressing economic, social and environmental challenges that society is confronted with while creating value for the company and society.

The transition to digitalization requires an assessment of the related sustainability challenges and the impacts thereof across the business. The Panel recommends an assessment of the social and environmental impacts of industrial digitalization and some guidance for the integration of sustainability considerations. This could be undertaken by a working group of both ABB and external experts and the results reported back by the end of 2017.

To further embed ABB's sustainability ambitions in the organization, the panel recommends incentivizing sustainability performance and to integrate material sustainability criteria beyond safety and integrity into ABB's performance compensation system.

The UN Sustainable Development Goals (SDGs) present opportunities as well as challenges for ABB. ABB considers that the most material SDGs are SDG 7 Access to energy for all, SDG 9 Sustainable industrialization and fostering innovation, SDG 13 Climate change action and SDG 8 Decent work and economic growth. For the panel, however, all SDGs are relevant and therefore a balanced consideration between the opportunities and responsibilities is needed. In the view of the Panel, ABB must also address SDGs where they have challenges, and has done so by referencing all SDGs in its 'performance against targets' dashboard.

Similarly, panel members expect ABB to highlight what is important but difficult to achieve in its Sustainability Objectives, with emphasis on the process and progress made. In this respect, ABB's [response to the 2015 panel statement](#) is an example demonstrating how ABB listens to and responds to external feedback.

Products and services

ABB's products and services can help solve some of the world's biggest problems and its impact can be huge. In this regard, the disclosure of the proportion of revenues generated from its eco-efficiency portfolio is useful and the panel welcomes that ABB plans to assess key sustainability impacts of its eco-efficiency portfolio. The choice of the methodology to measure the impact will be important.

As the proportion of revenues generated from other portfolios is still an important figure, the panel would like to understand if ABB continues to sell products less efficient than current benchmarks, and, if so, how it deals with this in the context of the eco-efficiency portfolio.

Governance and integrity

The panel commends ABB's public statement in relation to tax and recommends including an explanation why country-by-country reporting is not yet foreseen.

A remaining challenge is to choose the right projects and the right partners to avoid controversies related to large clients or projects.

Panel members suggest defining metrics to assess the achievements in the focus areas of integrity and human rights and achieve a shift from input based reporting to a focus on impact.

Responsible sourcing and human rights

ABB has made good progress in rolling out its supplier qualification scheme and the case studies in the report show examples of partnerships with suppliers and how human rights are addressed.

However, the day-to-day implementation of ABB's Sustainability Objectives, especially in the supply chain, is seen as a challenge. To address this, the panel

recommends focusing on the extent to which the procurement guidelines are being used or identifying why they are not being used and addressing potential gaps.

The Panel acknowledges that ABB has a large and complex supply chain and that it is challenging to collect and disclose relevant data about outsourced processes. The Panel recommends investigating how this might be achieved and reporting on it in the future.

The suggestions from the panel members in the 2015 report to strengthen the targets to reach ambition 2020 especially in the areas of human rights and community engagement remain valid.

Environment

As an industry leader in energy efficiency, use of low-carbon fuel and renewable energy, it is important for ABB to achieve a decrease in energy intensity. More important quantitatively, however, are the energy savings and greenhouse gas emission reductions that ABB customers achieve due to the use of ABB products. The panel encourages ABB to quantify this impact once the methodology to assess key sustainability impacts has been piloted.

In the chapter on resource efficiency, panel members would welcome information about the refurbishment and recycling of ABB's products.

Report highlights and improvement potentials

Overall, panel members have a positive impression of ABB's non-financial reporting. The report is comprehensive and well structured. It addresses key areas and the chapter 'performance against targets' is the central information hub.

Future reports should focus on the big picture and include some of ABB's learnings and challenges from current efforts being undertaken. It would also benefit from the inclusion of ABB's net positive impacts and one or two lighthouse projects that have the potential to be multiplied in other areas or cities.

Concluding remarks

The panel encourages ABB to continue its sustainability journey and to maintain its ambitious level. The greatest improvement potential is seen in the need for better measurement of the real sustainability benefits of ABB's products and services to its clients, communities and to societies as a whole. Building on existing and new partnerships, ABB should use its pioneering leadership to motivate other companies to follow suit.

Panel members are pleased to see that ABB has started to incorporate comments raised during the consultation process and look forward to assess how their recommendations will be acted upon in the future.

Stakeholder voices



Jermyn Brooks Transparency International

ABB's business is innovation, which can help solve some of the world's biggest problems. However, these technical improvements gain real power when aligned with sustainable thinking to ensure maximum value to all sections of society and it is this thinking, which informs ABB's sustainability targets.



Dr. Ajay Mathur The Energy and Resources Institute

I'd like to understand more about what the transformation to digitalization means and what the impacts of digitalization in ABB's business are. The impacts of digitalization are non-trivial and should be assessed and addressed.



Prof. Volker Hoffmann ETH Zurich

Further integrating sustainability into decision making and incentivizing sustainability performance will help to embed ABB's sustainability ambitions in the organization.



Shirley Mills The Boston Company Asset Management

A test for an organization is how it addresses difficult issues. In this report, ABB shows its process for tackling a range of challenging sustainability topics and the progress it is making.



Anna Nilsson
Swedbank Robur

A challenge for ABB is to choose the right projects and clients and to avoid controversies related to them. On the opportunity side, clean tech enhances eco-efficiency.



Sheri Straw
Duke Energy

A key element of sustainability is engaging stakeholders with meaningful and transparent dialogue. ABB is willing to do this, and the different panel members not only bring a variety of perspectives to ABB, but gain useful insights for their own organizations.



Gianluigi Ravenna
Enics

ABB's goals on safety and environmental standards are high, and clearly extend to their supply chain. However, ABB's supply chain is complex, which makes day to day implementation of their sustainability ambitions challenging. Partnering along the supply chain would help to address the challenges and create efficient processes to manage them in the future.



Shankar Venkateswaran
Tata Group

The work done by ABB on Responsible Sourcing is praiseworthy. This is a difficult and complex matter, and one that is easy to ignore, but the way ABB has gone about is exemplary. ABB's greatest contribution to a sustainable world, however, lies in its products and technology innovations and I look forward to the company developing a robust methodology to measure the impact of the use of its products by its customers on climate change and energy efficiency.

DNV GL assurance statement



Independent assurance statement

Scope and approach

ABB Asea Brown Boveri Ltd (“ABB”) commissioned **DNV GL Business Assurance Services UK Limited** (“DNV GL”, “we” and “our”) to undertake independent assurance of its Sustainability Report 2016 (the “Report”) for the year ended 31 December 2016. The scope of the Report is set out on page 74.

We performed our work using DNV GL’s assurance methodology VeriSustain™, which is based on our professional experience, international assurance best practice including the International Standard on Assurance Engagements 3000 (ISAE 3000), and the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines. We evaluated the Report for adherence to the VeriSustain™ Principles (the “Principles”) of stakeholder inclusiveness, materiality, responsiveness, completeness, neutrality and reliability.

We evaluated selected performance data using the reliability principle together with ABB’s data protocols for how the data are measured, recorded and reported. The performance data in scope were: The data reported for the indicators noted in the summary of main performance indicators table starting on page 68 (GRI Indicators: EN3 EN5 EN15 EN16 EN17 EN21(VOC) EN23 LA6 and Materials) and the data reported for 2016 achievements against the nine Group Sustainability Objectives for 2020 (see objectives dashboard on pages 10-13 of the Report). We agreed to exclude lost days (LA6) from scope this year, as although it is reported to complete the relevant GRI indicator, the consolidation of this data has less focus internally.

Our scope included the selected performance data within the pdf version of the Report, but excluded additional information and case studies hyperlinked from the Report, to illustrate the sustainability programme.

We understand that the reported financial data and information are based on data from ABB’s Annual Report and Accounts 2016, which are subject to a separate independent audit process. The review of financial data taken from the Annual Report and Accounts is not within the scope of our work.

We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. We are providing a ‘limited level’ of assurance. A ‘reasonable level’ of assurance would have required additional work at Group and site level to gain further evidence to support the basis of our assurance opinion.

Responsibilities of the Directors of ABB and of the assurance providers

The Directors of ABB have sole responsibility for the preparation of the Report. In performing our assurance work, our responsibility is to the management of ABB; however, our statement represents our independent opinion and is intended to inform all ABB stakeholders. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement.

DNV GL provides a range of other services to ABB, none of which constitute a conflict of interest with this assurance work. This is the third year that we have provided assurance over the full Report.

DNV GL’s assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Independence

DNV GL’s established policies and procedures are designed to ensure that DNV GL, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV GL) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals.

Basis of our opinion

A multi-disciplinary team of sustainability and assurance specialists performed work at headquarters and site level. We undertook the following activities:

- Review of the current sustainability issues that could affect ABB and are of interest to stakeholders;
- Review of ABB's approach to stakeholder engagement and recent outputs although we had no direct engagement with stakeholders;
- Review of information provided to us by ABB on its reporting and management processes relating to the Principles;
- Interviews with seven selected Directors and Senior Managers responsible for management of sustainability issues and review of selected evidence to support issues discussed. We were free to choose interviewees and interviewed those with overall responsibility for the programmes to deliver the nine Group Sustainability Objectives for 2020. We also interviewed management responsible for sustainability in India, China, USA and Finland;
- Site visits in: Mysore, India; Xiamen, China; Vaasa, Finland; and Athens, USA. The objectives of the site visits were to review the process and systems for preparing site level sustainability data and implementation of ABB's sustainability strategy. We were free to choose the sites we visited and they were selected based on the significance of their contribution to ABB's overall environmental impacts, to provide a geographical and divisional spread in 2016, and a complementary geographical footprint to the 2014 and 2015 site visits. The selected sites were all within the top 20 sites for impacts based on the data in scope;
- Review of supporting evidence for selected claims and data in the Report. Our checking processes were prioritised according to the materiality of issues at a consolidated corporate level; and
- Review of the processes at Group level for gathering and consolidating the specified performance data and, for a sample, checking the data consolidation.

Opinion

On the basis of the work undertaken, nothing came to our attention to suggest that the Report does not properly describe ABB's adherence to the Principles. In terms of reliability of the performance data, nothing came to our attention to suggest that these data have not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate.

Observations

Without affecting our assurance opinion, we also provide the following observations.

Stakeholder inclusiveness

The participation of stakeholders in developing and achieving an accountable and strategic response to sustainability.

ABB continued to work with a multi stakeholder Report review panel in 2016 and has reported its response to feedback provided by the panel on the 2015 Sustainability Performance Report. This is a good example of how the company demonstrates it is responding to stakeholder input and adds to the transparency of the Report.

We restate our recommendation that ABB consider extending its stakeholder engagement arrangements to more clearly include requirements with respect to local engagement. The outcomes of these engagements should be integrated into decision making at a global level.

Materiality

The process for determining the issues that are most relevant to an organisation and its stakeholders.

ABB has an established and appropriate Group level materiality process. The Group's intention to undertake a comprehensive materiality review to provide a foundation for the development of ABB's post 2020 sustainability objectives is appropriate. We recommend that this review also considers the extent to which different material issues are relevant at local level across the organisation.

The initiative to introduce a balanced dashboard of KPIs for internal quarterly reporting is positive. We would encourage ABB to ensure its quarterly reporting and long term targets are aligned.

The management approach for priority issues is well embedded within the business at a Group and local level. The initiative to launch a single global management system covering all aspects of the sustainability programme is positive and should help clarify minimum standards, and improve consistency of approach at local level.

We support the intention to review the target for products and services and consider alternatives that measure impacts. We recommend considering whether the impacts from the whole lifecycle of products can be measured as part of this review.

Responsiveness

The extent to which an organisation responds to stakeholder issues.

The "Performance against targets" table (pages 10-13) provides an important overview of the ambitions of the Sustainability programme. However, some targets reported are neither specific nor measurable, whilst others are indicators rather than targets. We recommend reviewing the suite of targets to ensure all are specific and measurable, and ensure associated indicators are reported alongside each target.

The report maps ABB's ambitions against the Sustainable Development Goals (SDGs) they contribute towards and this helps demonstrate alignment. Reporting against SDGs is an evolving area and the next step will be for ABB to consider how they will report against the targets that underlie the headline goals. We also recommend considering where targets should take account of other appropriate external frameworks, such as science based targets, to demonstrate ABB's contribution to addressing global sustainability challenges.

Completeness

How much of all the information that has been identified as material to the organisation and its stakeholders is reported.

ABB follows good practice for calculating and reporting on its Scope 2 GHG emissions by using both market based and location based emissions factors, adopting dual reporting for these emissions. ABB should work on improving the precision of its market based reporting, by increasing the proportion of sites using emissions factors from instruments higher in the data hierarchy as presented in the GHG protocol.

As stated last year, although ABB has a target for decreasing energy intensity, there is currently no target for reducing Green House Gas (GHG) emissions. We recommend establishing a target for reducing GHG emissions and note that ABB has identified this as a priority for 2017.

Neutrality

The extent to which a report provides a balanced account of an organisation's performance, delivered in a neutral tone.

Overall the report is balanced and the emphasis on the various topics reported is proportionate to their relative materiality. The CEO letter covers the main challenges faced during 2016. We recommend expanding on the challenges faced in the topic chapters, for example expanding on the two targets that are not on track.



Reliability

The accuracy and comparability of information presented in the report, as well as the quality of underlying data management systems.

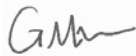
This year ABB established a new system for the collection and consolidation of environmental and social data from sites and countries. It enables prompt access to site level information, thus helping ABB analyse its performance. Going forward, we recommend that the business considers collecting data throughout the year to allow more frequent and ongoing review. This should include defining review responsibilities at site, regional and group level. This will reduce the burden of checking at year end and help to further improve data accuracy.

The indicators relating to the nine Group Sustainability Objectives have been internally developed and the definitions for most have been described or implied within the report. We recommend ABB follow best practice and include these definitions in a single "Basis of Reporting" document. Where data collection processes have already been established for reporting these indicators, the processes were clearly described by data owners. We restate our recommendation to ensure these processes are documented to ensure consistency of reporting from year to year.

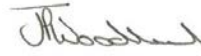
Last year we recommended that the basis of the estimated data for "CO₂ emissions from transport by own fleet" was reviewed, given that it represents around 20% of the Group carbon footprint. ABB is currently implementing processes to identify, collect and report on its CO₂ emissions from transport by own fleet, thus moving away from estimated data. At the time of our assurance, we were unable to test its progress but are supportive of this intent.

**For and on behalf of DNV GL Business Assurance Services UK Limited
London, UK**

2nd October 2017



Gareth Manning
Principal Consultant and Lead Assuror
UK Sustainability, DNV GL – Business Assurance



Jon Woodhead
Senior Principal Consultant and Reviewer
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Summary of main performance indicators⁽¹⁾

Environmental							
GRI ref.	Indicator description	2016 data assured	2016	2015	2014	2013	2012
Materials							
	Phthalates (tons)	✓	191	878	258	21	28
	Brominated flame retardants (tons)	✓	0.0	0.0	1.9	2.9	~0
	Lead in submarine cables (tons)	✓	8,246	8,376	7,842	7,236	5,633
	Organic lead in polymers (tons)	✓	1.0	1.4	0.1	0.6	0.9
	Lead in other products (tons), eg backup batteries and counterweights in robots	✓	3,321	1,684	1,884	2,601	363
	Cadmium in industrial batteries (tons)	✓	26.4	0.8	4.4	4.4	5.6
	Cadmium in rechargeable batteries (tons)	✓	45.7	97.5	75.1	67.6	6.3
	Cadmium in lead alloy and other uses (tons)	✓	7.3	6.4	6.0	5.7	4.5
	Mercury in products (tons)	✓	0.002	0.007	0.071	0.012	0.011
	SF ₆ insulation gas (inflow to ABB facilities) (tons)	✓	1,653	1,658	1,483	1,438	1,139
	SF ₆ insulation gas (outflow to customers) (tons)	✓	1,644	1,648	1,466	1,425	1,118
	No. of transformers with PCB oil in ABB facilities	✓	0	0	0	1	1
	No. of capacitors with PCB oil in ABB facilities	✓	0	0	0	60	32
	Mercury in instruments in ABB facilities (tons)	✓	0.238	0.225	0.320	0.371	0.203
EN3	Energy consumption (Gigawatt-hours – GWh)						
	Oil (11.63 MWh/ton)	✓	71	79	85	94	93
	Diesel (11.75 MWh/ton) ^a	✓	9	8	11	0	0
	Coal (7.56 MWh/ton)	✓	0	0	0	4	0
	Gas ^{b, c}	✓	696	777	749	788	597
	District heat consumption ^{b, d}	✓	198	181	198	251	219
	Electricity consumption ^{b, c, d}	✓	1,620	1,608	1,628	1,705	1,599
	Total energy used	✓	2,593	2,654	2,671	2,842	2,508
	Electricity sold ^e	✓	2	1	2	n.a.	n.a.
EN5	Energy intensity (MWh / million \$ sales)	✓	76.66	73.79	66.01	67.10	65.25
EN6	Reduction of energy consumption (GWh)^f		13.2	32.2	34.4	n.a.	n.a.
EN8	Water withdrawal (kilotons)						
	Purchased from water companies ^b	✓	3,800	4,000	4,200	4,400	3,900
	Groundwater extracted by ABB	✓	2,300	3,200	3,100	3,200	3,000
	Surface water extracted by ABB	✓	3,000	2,400	2,800	2,700	2,800
	Collection of rain water	✓	<100	<100	<100	<100	<100
	Waste water from external source	✓	<100	<100	<100	<100	<100
	Total water withdrawal	✓	9,100	9,700	10,100	10,300	9,700
EN10	Water recycled and reused						
	Volume of water reused and recycled (kilotons)		4,800	5,200	5,200	5,900	3,700
	As percentage of total water withdrawal (%)		52	54	51	57	38

Environmental							
GRI ref.	Indicator description	2016 data assured	2016	2015	2014	2013	2012
Greenhouse gas emissions^g (kilotons CO₂ equivalent)							
EN15	Scope 1						
	CO ₂ from the use of energy ^c	✓	163	181	178	187	n.a.
	SF ₆ (in CO ₂ equivalents) ^h	✓	221	237	382	288	340
	CO ₂ from transport by own fleet ⁱ	✓	350	350	350	350	350
EN16	Scope 2						
	District heat consumption	✓	31	29	35	45	n.a.
	Electricity consumption ^c	✓	614	684	682	680	n.a.
EN17	Scope 3						
	Air travel ^{j,k}	✓	164	158	171	134	146
	Total greenhouse gas emissions	✓	1,543	1,638	1,798	1,684	n.a.
EN18	Greenhouse gas emissions intensity (tons CO₂ equivalents/million \$ sales)	✓	45.61	46.18	45.13	40.24	n.a.
EN21	Emissions of volatile organic compounds (tons)						
	Volatile organic compounds (VOC)	✓	1,105	1,223	1,291	1,210	1,355
	Chlorinated volatile organic compounds (VOC-Cl)	✓	6	13	20	20	12
	Emissions of NO _x and SO _x (tons SO ₂ and NO ₂)						
	SO _x from burning coal		0	0	0	3	0
	SO _x from burning oil		59	64	65	69	69
	NO _x from burning coal		0	0	0	2	0
	NO _x from burning oil		44	48	49	52	52
	NO _x from burning gas		150	168	162	170	129
EN22	Water discharge by quality and destination (kilotons)						
	Public sewer		4,200	3,100	3,000	3,600	2,800
	treated (percentage)		21%	28%	30%	31%	29%
	untreated (percentage)		79%	72%	70%	69%	71%
	Recipient		4,500	2,600	2,900	2,300	2,000
	treated (percentage)		15%	90%	90%	87%	45%
	untreated (percentage)		85%	10%	10%	13%	55%
	Hazardous treatment company		300	360	400	500	500
	treated (percentage)		71%	90%	75%	60%	80%
	untreated (percentage)		29%	10%	25%	40%	20%
	External use		0	<100	<100	<100	0
	treated (percentage)		—	63%	50%	50%	—
	untreated (percentage)		—	37%	50%	50%	—
EN23	Waste (kilotons)						
	Scrap metal recycled	✓	148	158	162	185	150
	Non-hazardous waste recycled ^b	✓	53	53	49	52	41
	Non-hazardous waste sent for disposal ^b	✓	37	44	44	50	43
	Hazardous waste recycled ^m	✓	7	5	5	5	0
	Hazardous waste sent for disposal ^m	✓	8	10	13	9	12
	Total waste (generated)	✓	254	270	273	301	246
EN24	Numbers of significant spillsⁿ						
	Oil spills		17	11	7	13	6
	Chemical spills		6	1	0	0	0
	Emissions to air		6	11	3	3	5
	Others		9	0	0	4	0
	Total number of significant spills		38	23	10	20	11

Social											
GRI ref.	Indicator description	2016		2015		2014		2013		2012	
LA1	Total number and rates of new employee hires and employee turnover ^o										
	Total workforce by region (ABB employees)										
	Europe	61,400		61,600		63,000		65,000		64,000	
	The Americas	29,000		30,900		32,200		34,400		34,400	
	Asia, Middle East and Africa	41,900		43,300		45,200		48,300		47,700	
	Total	132,300		135,800		140,400		147,700		146,100	
	Employee turnover										
	Turnover of all employees ^P										
	Europe	6,063	10%	5,891	9%	5,877	9%	5,387	9%	5,083	8%
	The Americas	5,338	17%	5,409	17%	5,379	17%	4,760	14%	3,689	14%
	Asia, Middle East and Africa	4,430	11%	4,946	12%	5,701	13%	5,534	13%	5,060	12%
	Total employee turnover: ABB Group	15,831	12%	16,246	12%	16,957	12%	15,681	11%	13,832	11%
	Turnover of all female employees ^P										
	Europe	1,571	2%	1,498	2%	1,370	2%	1,217	2%	1,218	2%
	The Americas	1,265	4%	1,418	5%	1,307	4%	1,026	3%	676	3%
	Asia, Middle East and Africa	882	2%	1,093	3%	1,311	6%	1,358	3%	1,093	3%
	Total female employee turnover: ABB Group	3,718	3%	4,009	3%	3,882	3%	3,601	3%	2,987	2%
	Employee hires										
	Hires of all employees ^P										
	Europe	5,656	9%	5,672	9%	6,195	10%	6,086	10%	6,793	11%
	The Americas	3,354	11%	3,573	11%	4,142	13%	4,246	12%	4,034	15%
	Asia, Middle East and Africa	2,920	7%	3,777	9%	5,493	13%	5,219	10%	5,875	14%
	Total employee hires: ABB Group	11,930	9%	13,022	10%	15,830	12%	15,551	11%	16,702	13%
	Hires of all female employees ^P										
	Europe	1,681	3%	1,520	2%	1,597	3%	1,453	2%	1,590	3%
	The Americas	937	3%	769	2%	1,010	3%	971	3%	821	3%
	Asia, Middle East and Africa	586	1%	761	2%	1,308	3%	1,467	3%	1,231	3%
	Total female employee hires: ABB Group	3,204	2%	3,050	2%	3,915	3%	3,891	3%	3,624	3%

Social										
GRI ref.	Indicator description	2016 data assured		2016	2015	2014	2013	2012		
LA6	Occupational health and safety: Injuries, lost days, diseases and fatalities									
	Employee work-related fatalities ^{s, u}	✓		0	0	1	0	1		
	Incident rate ^t	✓		0.00	0.00	0.01	0	0.01		
	Employee business travel fatalities ^{s, v}	✓		1	0	0	0	1		
	Incident rate ^t	✓		0.01	0.00	0.00	0.00	0.01		
	Contractor work-related fatalities ^{s, u}	✓		5	2	2	7	2		
	Contractor business travel fatalities ^{s, v}	✓		2	0	0	0	0		
	Members of the public fatalities ^s	✓		0	1	0	1	0		
	Employee total recordable incident number ^{u, w}	✓		1,140	1,310	1,500	1,664	1,750		
	Incident rate ^t	✓		7.90	8.79	9.95	10.94	13.04		
	Contractor total recordable incident number ^{u, w}	✓		277	343	333	310	348		
	Incident rate ^t	✓		6.95	8.02	7.76	7.52	8.21		

Social							
GRI ref.	Indicator description	2016 data assured	2016	2015	2014	2013	2012
	Employee lost time incident number ^u	✓	441	531	652	686	683
	Incident rate ^t	✓	3.04	3.55	4.34	4.70	4.80
	Contractor lost time incident number ^u	✓	118	163	200	158	159
	Incident rate ^t	✓	2.96	3.81	4.65	3.83	3.76
	Employee lost days due to industrial incidents ^x		6,905	7,831	8,415	10,591	10,345
	Days lost rate ^t		47.82	52.56	55.22	77.50	74.64
	Employee occupational health diseases	✓	65	46	17	10	10
	Employee occupational health disease rate ^t	✓	0.45	0.31	0.11	0.14	0.07
	Safety Observation Tours (SOT) conducted ^u	✓	178,473	139,124	-	-	-
	SOT rate ^y	✓	1.24	0.92	-	-	-
	Hazards reported ^u	✓	621,849	520,942	-	-	-
	Hazards reporting rate ^y	✓	4.31	3.51	-	-	-

Data by region

Employee work-related fatalities: ABB Group	✓	0	0	1	-	-
Europe	✓	0	0	0	-	-
The Americas	✓	0	0	0	-	-
Asia, Middle East and Africa	✓	0	0	1	-	-
Employee business travel fatalities: ABB Group	✓	1	0	0	-	-
Europe	✓	0	0	0	-	-
The Americas	✓	1	0	0	-	-
Asia, Middle East and Africa	✓	0	0	0	-	-
Contractor work-related fatalities: ABB Group	✓	5	2	2	-	-
Europe	✓	0	0	0	-	-
The Americas	✓	0	0	0	-	-
Asia, Middle East and Africa	✓	5	2	2	-	-
Contractor business travel fatalities: ABB Group	✓	2	0	0	-	-
Europe	✓	0	0	0	-	-
The Americas	✓	2	0	0	-	-
Asia, Middle East and Africa	✓	0	0	0	-	-
Employee total recordable incident rate: ABB Group	✓	7.90	8.79	9.95	-	-
Europe	✓	9.62	10.18	11.55	-	-
The Americas	✓	11.84	14.01	15.66	-	-
Asia, Middle East and Africa	✓	2.74	3.08	3.93	-	-
Contractor total recordable incident rate: ABB Group	✓	6.95	8.02	7.76	-	-
Europe	✓	16.91	18.77	19.72	-	-
The Americas	✓	14.69	15.35	14.01	-	-
Asia, Middle East and Africa	✓	3.46	3.71	3.46	-	-
Employee lost time incident rate: ABB Group	✓	3.04	3.55	4.34	-	-
Europe	✓	4.67	5.55	6.60	-	-
The Americas	✓	2.92	3.30	4.00	-	-
Asia, Middle East and Africa	✓	0.77	0.84	1.21	-	-
Contractor lost time incident rate: ABB Group	✓	2.96	3.81	4.65	-	-
Europe	✓	9.25	10.34	13.76	-	-
The Americas	✓	8.08	8.39	8.60	-	-
Asia, Middle East and Africa	✓	0.73	1.17	1.52	-	-

Social							
GRI ref.	Indicator description	2016 data assured	2016	2015	2014	2013	2012
	Employee days lost rate: ABB Group		47.82	52.56	55.22	-	-
	Europe		59.79	73.24	82.53	-	-
	The Americas		78.07	60.16	82.82	-	-
	Asia, Middle East and Africa		9.89	17.38	17.20	-	-
	Employee occupational health disease rate: ABB Group	✓	0.45	0.31	0.11	-	-
	Europe	✓	0.87	0.56	0.22	-	-
	The Americas	✓	0.22	0.24	0.28	-	-
	Asia, Middle East and Africa	✓	0.45	0.00	0.00	-	-
	SOT rate: ABB Group	✓	1.24	0.92	-	-	-
	Europe	✓	0.76	0.51	-	-	-
	The Americas	✓	1.87	1.41	-	-	-
	Asia, Middle East and Africa	✓	1.53	1.17	-	-	-
	Hazard rate: ABB Group	✓	4.31	3.51	-	-	-
	Europe	✓	3.65	2.67	-	-	-
	The Americas	✓	4.78	4.25	-	-	-
	Asia, Middle East and Africa	✓	5.03	4.19	-	-	-
HR3	Non-discrimination						
	Total number of incidents of discrimination		0	0	1	1	2
	Total number of incidents of harassment		5	8	10	10	13
SO6	Public policy						
	Financial and in-kind political contributions		\$10,400	\$12,600	\$13,000	0	\$30,000
LA9	Training and education						
	Training per year per employee (average hours)						
	Canada		18	30	20	18	22
	China		25	22	26	27	31
	Finland		15	17	19	18	14
	Germany		18	18	18	16	16
	India		3	2	12	12	18
	Italy		10	12	12	19	16
	Poland		12	10	11	12	10
	Sweden		10	10	12	12	12
	Switzerland		15	14	16	20	19
	US		24	27	32	28	24
LA12	Diversity and equal opportunity^o						
	Composition of governance bodies						
	Board of Directors						
	Women in Board (percentage)		18%	13%	13%	13%	13%
	Age group diversity (percentage)						
	<30 years old		0%	0%	0%	0%	0%
	30-50 years old		0%	0%	0%	0%	0%
	>50 years old		100%	100%	100%	100%	100%
	Number of nationalities		10	8	7	7	7

Social							
GRI ref.	Indicator description	2016 data assured	2016	2015	2014	2013	2012
	Executive Committee						
	Women in Executive Committee (percentage)		9%	9%	9%	9%	8%
	Age group diversity total (percentage)						
	<30 years old		0%	0%	0%	0%	0%
	30-50 years old		18%	27%	36%	45%	25%
	>50 years old		82%	73%	64%	55%	75%
	Number of nationalities		7	8	8	8	8
	Employees in senior and middle management						
	Women in senior and middle management		18%	17%	15%	15%	15%
	Men in senior and middle management		82%	83%	85%	85%	85%
	Total workforce (ABB employees)						
	Women in total workforce		23%	23%	22%	22%	21%
	Men in total workforce		77%	77%	78%	78%	79%

- ⁽¹⁾ Note that in this table, data for the Thomas & Betts acquisition is included from 2013 onwards. Data for the Baldor acquisition is included from 2012 onwards. Values in the table may not add up to the totals due to rounding.
- ^a Diesel consumption was reported separately for the first time in 2014.
- ^b Results for these indicators are based on reported data covering 97 percent of employees in 2016 (95 percent in 2015, 93 percent of employees in 2014, 85-88 percent in earlier years) plus estimated energy use per employee for the remaining employees. See the Approach to reporting section for more details.
- ^c Gas and electricity consumption and the associated greenhouse gas emissions have been re-stated for 2012-2015, due to the correction of earlier conversion factor errors at one of our large facilities.
- ^d ABB Sustainability Performance Reports prior to 2014 included calculated "losses at utilities" for district heat and purchased electricity consumption in total energy consumption. In this report, those loss calculations have been removed for all years shown.
- ^e Data for electricity sold was reported for the first time in 2014.
- ^f Data for reduction of energy consumption was reported for the first time in 2014.
- ^g See Approach to reporting chapter for more details on GHG emission calculation.
- ^h In 2015, we updated the factor used to convert emissions to CO₂e equivalents to 22,800 kg CO₂e/kg SF₆, as recommended by the UK Department of Energy & Climate Change in July 2014, and have applied that factor to SF₆ data reported for all years (2011-2015). Previously we used 22,200 kg CO₂e/kg SF₆.
- ⁱ Estimated data.
- ^j The air travel indicator included data from ABB Bulgaria, Croatia, Greece, Kazakhstan and Romania for the first time in 2016 and from ABB China and Thomas & Betts for the first time in 2014.
- ^k Data for air travel are calculated using the emission factors published by the UK Department of Environment, Food and Rural Affairs (DEFRA in its "2016 Guidelines to DEFRA / DECC's GHG Conversion Factors for Company Reporting).
- ^l Data is not available in this form for 2012.
- ^m Hazardous waste as classified in the country where it is generated.
- ⁿ An environmental incident is regarded as significant if at least one of the following criteria applies to the incident: obligation to inform local authorities or a governmental agency about the incident and/or regulatory violation; inspection by an environmental agency results in a formal complaint; environmental Notice of Violation, a Consent Order or a Potential Responsible Party (PRP) notification; imposition of a penalty or a fine; significant impact on an ecosystem; costs related to the incident exceed, or may exceed, \$10,000.
- ^o See further data on employees by age group in the GRI Index of the Sustainability Report 2016 online.
- ^p Includes part-time employees. Turnover rate calculated as number of ABB employees (full- and part-time) leaving during the year/total number of ABB employees (full- and part-time) as at 31 December. For the purpose of this calculation, employees who leave the organization voluntarily or involuntarily whether due to dismissal, retirement, or death in service or any other reason, are included. However, involuntary turnover arising out of divestments is excluded from the definition.
- ^q 2013 data from Thomas & Betts, a company acquired by ABB during 2012, does not include contractors.
- ^r 2012 data does not include incidents from Thomas & Betts, a company acquired by ABB during 2012.
- ^s Fatalities also include deaths occurring within one year as a result of injuries sustained.
- ^t Incident rates are according to the ILO rate per 1,000 employees.
- ^u Data covers incidents that happened at workplace (ABB facility, customer site, project site).
- ^v Incidents during air travel on business trips are excluded.
- ^w Total recordable incidents include fatal, lost time injuries, serious injuries, medical treatment injuries, occupational diseases and restricted work day cases.
- ^x Days lost are calendar days and are counted from the day after the incident.
- ^y Rate is calculated per employee.

Approach to sustainability reporting

Reporting boundaries

We cover all ABB Group companies in our formal sustainability reporting system, including wholly owned subsidiaries and majority-owned joint ventures worldwide. In 2016, our environmental and social reporting did not cover SARPI – Société Algérienne pour la réalisation de projets industriels, Alger. A full list of direct and indirect subsidiaries is shown in our Annual Report 2016.

Changes in 2016

Entities acquired during 2015, including Striebel and John, CGM Group, gomtec GmbH and Viola Systems, are now integrated into ABB's sustainability reporting system.

Note that data for gas and electricity consumption and the associated greenhouse gas emissions (GHG) have been re-stated for 2012-2015, due to the correction of earlier conversion factor errors at one of our large facilities.

Data collection processes

We use two online data reporting systems to measure and collect performance data throughout the Group: one system collects monthly health and safety data inputs from all entities in every country, while the other system collects annual social data from every country and annual environmental data from every manufacturing and service site and the majority of office locations. During 2016, we implemented a new, cloud-based system to collect social and environmental data.

Data in this report relating to health and safety, and social performance covers substantially all ABB employees, whereas data relating to environmental performance was sourced from more than 580 ABB sites and offices, covering approximately 97 percent of employees. The environmental performance of the remaining employees, located in non-manufacturing entities without significant impacts, is covered by estimated data for energy, water and waste parameters.

The estimation factors used for 2016 are as follows:

	Unit	Factor
Electricity consumption	MWh/employee	2.9
District heat consumption	MWh/employee	1.3
Gas consumption	MWh/employee	0.6
Water purchased from utilities	tons/employee	13.8
General waste sent for disposal	tons/employee	0.09
General waste sent for recycling	tons/employee	0.05

Calculation of energy and greenhouse gas data

ABB uses a market-based method to calculate and report Scope 2 GHG emissions. For purchased electricity and district heat, we have obtained local emission factors from suppliers. Where those factors were not available, we have sourced factors from the IEA CO₂ Emissions from Fuel Combustion, 2013 or from national or regional inventories. Fuel emission factors are sourced from the GHG Protocol's Emission Factors from Cross Sector Tools (April 2014).

Scope 2 GHG emissions for electricity have also been calculated using the location-based method and are provided for comparison below.

Scope 2 GHG emissions from electricity	kiloton CO _{2e}
Market-based	614
Location-based	656

GHG emissions from air travel are calculated using the emission factors published by the UK Department of Environment, Food and Rural Affairs (DEFRA in its "2016 Guidelines to DEFRA / DECC's GHG Conversion Factors for Company Reporting"). Data for 2012-2015 have been re-stated using these updated factors.

In 2015, we updated our methodology to account for GHG emissions and described these changes in the ABB Group [Sustainability Performance Report 2015](#). GHG data calculated using this method are available from 2013.

Assurance process

ABB believes in the importance of independent external assurance to enhance the credibility of our sustainability report. The independent assurance provider DNV GL has provided assurance of environmental and social performance indicators, as shown in the Summary of performance indicators table, and has reviewed key data and claims in the report and the data reported against our Sustainability Objectives 2014–2020. Their statement appears on page 64 of this report.

Global Reporting Initiative G4 application

ABB's sustainability performance reporting is guided by the Global Reporting Initiative's (GRI) G4 Guidelines. Accordingly, we use a materiality assessment to help us focus this report on those issues that are most important to our internal and external stakeholders. Omission from the material issues covered in our report does not mean that the issue is not managed by the company. The GRI content index for this report is available online.

UN GLOBAL COMPACT

Communication on Progress for 2016

The company

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing more than a 125-year history of innovation, ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. ABB operates in more than 100 countries with about 135,000 employees. www.abb.com

Statement of support

Ulrich Spiesshofer, ABB Chief Executive Officer

“Since joining the UN Global Compact as a founder member in 2000, ABB has been working to embed its 10 core principles into our business operations and company as a whole. ABB’s Sustainability Objectives for the coming years reflect these principles, covering environmental, human rights and labor issues, and integrity among other areas. In addition, ABB’s business operations and strategic goals also support a number of the UN Sustainable Development Goals, including those aimed at ensuring access to affordable, reliable and sustainable energy for all, and efforts to combat climate change. As part of our ongoing commitment to the Global Compact, ABB was also actively involved in 2016 in the UNGC summit and in focused initiatives at a local network level.”

Human rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights

- Human Rights Policy and public statement adopted by ABB Group in 2007. Policy updated in 2016
- Further work to embed human rights into business decision-making processes, including risk review for projects. Human rights considerations integrated in supply chain questionnaire, the Supplier Code of Conduct, and the mergers and acquisitions process.
- Human rights considerations embedded in internal protocol for deciding where ABB should have business activities.
- Global human rights training continued in 2016. An awareness-raising program for senior managers has so far been delivered in 16 countries; the training is aimed at business managers, and key functions such as Supply Chain Management, Human Resources, Legal and Integrity, Communications and Sustainability.
- A capacity building program to raise human rights capability continued in 2016 with further targeted courses for Business Unit specialists on Health, Safety and Environment and for country sustainability specialists. A network of internal specialists was launched

towards the end of 2014. An e-learning human rights module was launched in early 2015.

- Active participation in international meetings, organizations and workshops seeking to promote business awareness and respect for human rights.

Principle 2: Make sure they are not complicit in human rights abuses

- Human Rights Policy adopted in 2007 and amended in 2016, is designed to raise performance and avoid complicity. Specifically, the issues of human trafficking and slave labor were added to a number of policies in 2016.
- Global human rights training continued in ABB in 2016. The target group is as above in Principle 1. Central to all such trainings is the issue of potential complicity.
- Ongoing work to understand and limit ABB exposure to conflict minerals, as defined by section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.
- In-depth due diligence carried out on several proposed projects and business partners to avoid potential complicity.

Labor

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining

- Embedded in Code of Conduct, Principle 1 of ABB Human Rights Policy and Principle 6 of ABB Social Policy. All countries were asked to formally report on this principle. No violations were reported in 2016.
- In countries where law does not permit this right, ABB facilitates regular consultation with employees to address areas of concern.

Principle 4: The elimination of all forms of forced and compulsory labor

- Covered by ABB Group Code of Conduct, Principle 1 of ABB Human Rights Policy and Principle 4 of ABB Social Policy. Additions were made to both policies in 2016 to cover human trafficking and slave labor. All countries were asked to formally report on this principle. No violations were reported in 2016.
- The principle of “no forced or compulsory labor” is included in ABB’s Supplier Code of Conduct and a protocol for supplier audits.

Principle 5: The effective abolition of child labor

- Included in ABB Group Code of Conduct, Principle 1 of the ABB Human Rights Policy and Principle 3 of ABB Social Policy.
- All countries were asked to formally report on this principle. A total of 240 audits of suppliers were carried out in 2016, and no violations were reported.

- The principle of “no child labor” is included in ABB’s Supplier Code of Conduct as well as a protocol for supplier audits.

Principle 6: Eliminate discrimination in respect of employment and occupation

- Contained in ABB Group Code of Conduct, Principle 1 of the ABB Human Rights Policy and Principle 7 of ABB Social Policy. All countries were asked to formally report on this principle. There were five substantiated cases of harassment in 2016, resulting in four terminations and one resignation.
- ABB also has country-specific procedures and programs to ensure that policies are fully observed and comply with national legislation.

Environment

Principle 7: Business should support a precautionary approach to environmental challenges

- Environmental considerations mandatory in the ABB GATE model for product and process development. Supporting tools and training materials have been developed to further improve application of checklist.
- Standardized Life Cycle Assessment procedures used to assess new products’ environmental impact throughout their life cycle.
- Group-wide list of prohibited substances for products and processes is continually reviewed and updated. The phasing out of hazardous substances is part of ABB Sustainability Objectives.
- ABB continuing its internal energy efficiency program, with target to reduce energy use by 20 percent by 2020, and increase focus on resource efficiency (namely improve materials and water use, and reduce waste)
- Environmental experts at country and Group level provide environmental expertise, guidelines and tools to business units to ensure they meet upcoming environmental requirements and challenges, and customer demand for compliance and other environmental information.

Principle 8: Undertake initiatives to promote greater environmental responsibility

- Work with international organizations and initiatives, such as the World Business Council for Sustainable Development, ISO and the United Nations Environment Programme.
- ABB has implemented a strengthened protocol for auditing of suppliers’ environmental performance, auditing a further 240 suppliers during 2016.
- ABB’s ongoing Access to Electricity rural electrification program in India.

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

- Covered by Code of Conduct and Principle 5 of ABB Environment Policy.
- Energy-efficient products and renewable energy equipment identified as key driver for ABB’s business opportunities.
- Transfer of technologies and best practices between

countries to ensure same level of environmental performance throughout Group.

- Group-wide list of prohibited substances for products and processes is continually reviewed and updated. The phasing out of hazardous substances is part of ABB sustainability objectives.
- ABB GATE model for product and process development contains defined steps for considering improvements in environment and safety performance. The processes supporting the health, safety and environment checklist for the GATE model were strengthened during 2016.

Anti-corruption

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

- Covered by ABB Group Code of Conduct, the ABB Supplier Code of Conduct, Principle 4 of ABB Human Rights Policy, and Principle 13 of Social Policy.
- Underpinned by zero tolerance policy on non-compliance.
- During the third quarter of 2016 ABB rolled out a new global anti-bribery essentials e-learning module across ABB Group to the white collar community. The blue collar community received face-to-face training during 2016. The completion status at year-end was an average of just over 90 percent for the e-learning and face-to-face training.
- ABB offers a number of different reporting channels, including a third party-held Business Ethics hotline available 24/7 where employees can report concerns confidentially.
- As part of the anti-corruption program, ABB continued to carry out several additional training and communication initiatives in 2016, focusing on company leadership and middle management, and including Code of Conduct and anti-bribery e-learning, integrity leadership development sessions, Value Pair workshops, and case studies published on the intranet, and proactive action such as anti-bribery compliance reviews of ABB units around the world.
- ABB was recognized as one of The World’s Most Ethical Companies by the Ethisphere Institute in the first quarter of 2016. The NYSE Governance Services reviewed ABB’s integrity program in 2014 and, as a result, ABB was once again recognized with the Ethisphere Anti-corruption Program Verification and Compliance Leader Verification seals covering 2015 and 2016.
- ABB is one of the founding members of Ethics and Compliance Switzerland (ECS; May 2014). ECS promotes the development of a compliance community across all sectors and organizations in Switzerland and the establishment and sharing of compliance best practices. It is the first NGO in Switzerland connecting private and public sector organizations and their officers and employees who share an interest in best practice on integrity and compliance management.