

The background of the cover is a light grey gradient. A central graphic consists of several sharp, triangular rays emanating from a point on the horizon line. The rays are colored in shades of yellow and white, creating a sense of a rising sun or solar energy. The rays vary in length and angle, with some pointing upwards and others downwards.

ANNUAL GROUP REPORT 2016

SolarWorld AG

ABOUT THIS REPORT

FORWARD-LOOKING STATEMENTS

This report may contain forward-looking statements that are subject to risks and uncertainties, many of which relate to factors that are beyond SolarWorld AG's control or its ability to precisely estimate, such as future market and economic development, supply and demand, the behavior of other market participants and the actions of government regulators.

SolarWorld AG has based these forward-looking statements on its current views and assumptions with respect to future events and financial performance. Many factors could cause the actual results, performance or achievements of SolarWorld AG to be materially different from those that may be expressed or implied by such statements. Such factors include those discussed in the Opportunities and Risk Report.

Given these uncertainties, readers are cautioned not to place undue reliance on any forward-looking statements. We do not assume any obligation to update the forward-looking statements contained in this report.

SUSTAINABILITY

SolarWorld AG has a clear focus on sustainability. The Management Board supports the group's commitment to international standards such as the United Nations Global Compact. With the present report, the Management Board, above all the CEO of SolarWorld AG, declares its willingness to continue this engagement in the future.

The Annual Group Report 2016 describes both financial and non-financial performance (Global Reporting Initiative, G4 In Accordance Comprehensive, audit review by the BDO AG, Wirtschaftsprüfungsgesellschaft). Especially relevant economic, ecological and social topics are explained extensively in the group management report. Due to eco-efficiency, the section "Sustainability in detail 2016" is only available online at ► www.solarworld.de/sustainability

FURTHER INFORMATION

Rounding differences may occur in the Annual Group Report.

ANNUAL GROUP REPORT 2016

SolarWorld AG

That's SolarWorld ►► SolarWorld is a global manufacturer and supplier of solar power solutions with more than 40 years of experience in solar technology development and production. With innovative high-power technology and a strong brand, we hold a leading role in the solar market's quality segment. We are active around the world, in all three market segments Residential, Commercial and Utility, offering our customers leading solar power solutions in which they can trust.

These are our goals ►► 2017 will be a year of changes for SolarWorld. Focusing on mono-crystalline technology will enable us to compete successfully in the challenging, rapidly transforming international solar markets. More consistently than before, we will use PERC technology as a platform for high power and combine it with other performance-enhancing processes. At the same time, we will streamline our product portfolio to focus entirely on what we can do best: creating real value for our customers and offering them more than the competition, with products "made by SolarWorld" that deliver maximum efficiency and quality. We are further underpinning this claim by doubling the product guarantee from 10 to 20 years on all our modules, from 2017 onward. With their exceptional quality and durability, our products play a key part in building the solar world.

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LETTER BY THE CHAIRMAN

Management Board of SolarWorld AG (from left to right): **Philipp Koecke (CFO)**: finance, controlling, accounting and investor relations; **Colette Rückert-Hennen (CIBPO)**: information technology, human resources, brand management, marketing and compliance; **Dr.-Ing. E. h. Frank Asbeck (CEO)**: strategic group development, technology development as well as public relations including energy and environmental policy; **Frank Henn (CSO)**: international sales including the areas after sales service, technical support and customer service; **Jürgen Stein (CPO)**: product management, product development, production, quality management, purchasing and supply chain management

DEAR CUSTOMERS, SHAREHOLDERS, NOTEHOLDERS, BUSINESS PARTNERS AND EMPLOYEES OF SOLARWORLD AG,

Over the last couple of weeks, we have begun the process of focusing SolarWorld entirely on monocrystalline high-power technology. This Annual Group Report presents the focusing measures, which will be key in boosting our competitiveness. To start with, however, we look back at the past fiscal year 2016 in the first part of the report.

2016 can be summed up in a few words: The first half was good, the second was not. We were on track in the first half-year, achieving positive earnings before interest and taxes (EBIT) in the second quarter. Then, we experienced a dramatic price decline worldwide, caused by abrupt reductions in the Chinese solar market that led to a rise in dumping. This not only had negative consequences for the international solar industry, it also had a considerable negative impact on our business and performance indicators. We were able to mitigate some effects in the fourth quarter and managed to stop the liquidity drain. Over the full twelve months of the year, we increased our consolidated shipments and revenue, compared with the previous year. Yet, due to the market distortions in the second half of the year, we did not reach targets for shipments, revenue and operating result.

In view of the negative trend in the second half of 2016, we, the Management Board, together with executives from all areas of the group, held extensive discussions in which we asked ourselves without any reservations: How can SolarWorld be successful in an even tougher competition and sustainably earn money? The result of these considerations was the decision to focus on monocrystalline high-performance products featuring PERC technology. Our customers already favor the benefits of this technology. Highest quality and performance are key for our success in the market. Focusing will allow us to pursue our existing strategy more consistently than ever, i.e. offering customers more than the competition. PERC technology can be combined with other efficiency-enhancing processes and serves as a platform for high power “made by SolarWorld.” As a further development of this technology, we also offer the Bisun bifacial module, which generates a higher yield by converting sunlight into power on the rear side of the module, too.


**“Highest quality and performance are
key for our success in the market.”**

Focusing is the leverage for more radical cost reductions than were possible before. Previously, we pursued both monocrystalline and multicrystalline technology, with a wide range of module variants and performance classes. There were certainly reasons for this in the past, but it also meant high complexity and high costs. Now, by focusing on the technology that's best for us and our future, we reduce expenses considerably almost everywhere in the company.

In addition, we are focusing our production steps at individual sites: Crystal growing and cell manufacturing will take place at Arnstadt, in Thuringia, while our site in Freiberg, Saxony, will concentrate on wafer and module production. We will respectively shut down and relocate the smaller

production facilities for modules in Arnstadt and those for cells in Freiberg. In this way, we can selectively expand the most competitive production areas and so achieve economies of scale more quickly, eliminate redundancies and simplify processes.

These measures will have a significant impact on our workforce, too. In the course of our focusing strategy, we will have to lay off more than a few employees. This is a painful decision, coming after years in which we created many new jobs. Our employees have shown a high level of commitment, especially during difficult phases. On behalf of the entire Management Board of SolarWorld AG, I would like to take this opportunity to express our thanks and recognition.



**“Focusing enables
considerable cost savings.”**

Global demand for solar power products is set to increase slightly in 2017. We expect that our shipments will increase, compared with last year. Consolidated revenue is likely to remain at about previous year's level. Our operating figures will improve because of the measures being introduced; EBIT for 2017 will still be negative, however.

**“We are laying
the foundation for
future growth.”**

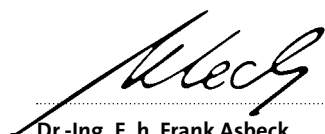
2017 will be a year of transition, where we lay the foundation for future growth. Saving costs alone is not enough to prevail in such a competitive market. We are therefore investing a mid-two-digit million euro amount in 2017 at our production sites Freiberg and Arnstadt in Germany and Hillsboro in the United States. The investments are going into diamond wire saws and further upgrades and expansion of our PERC capacities. The fact that we are investing in all three of production sites sends a clear signal: We will capitalize on our opportunities and retain technological leadership.


This is the foundation on which we will keep growing. Two years from now, we plan to sell around 2 gigawatts of solar modules – some 40 percent more than in 2016. Operationally, too, we expect to see a significant improvement and the return to operational profitability.

SolarWorld has undergone many changes, but always stayed true to its vision and values. Sustainability lies at the core of our business activities and we will keep building the solar world – with the highest quality and efficiency.

Bonn, March 28, 2017

Yours,


.....
Dr.-Ing. E. h. Frank Asbeck
CEO of SolarWorld AG



KEY FIGURES AND FACTS

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KEY FIGURES AND FACTS

SELECTED INDICATORS

Financial indicators in k€	Q4 2015	Q4 2016	Change
Revenue	231,675	164,412	-67,263
EBITDA	26,278	-41,256	-67,534
EBIT	14,117	-51,036	-65,153
Consolidated net result	5,570	-11,940	-17,510

Financial indicators in k€	2015	2016	Change
Revenue	763,465	803,066	39,601
Foreign quota in % of revenue	82.6 %	85.1 %	2.5 %-points
EBITDA	40,815	-25,778	-66,593
EBIT	-4,151	-98,844	-94,693
EBIT in % of revenue	-0.5 %	-12.3 %	-11.8 %-points
Capital employed*	459,091	411,415	-47,676
Consolidated net result	-33,282	-91,937	-58,655
Consolidated net result in % of revenue	-4.4 %	-11.4 %	-7.0 %-points
Total assets	868,708	686,943	-181,765
Equity	208,877	121,808	-87,069
Equity ratio	24.0 %	17.7 %	-6.3 %-points
Cashflow from operating activities	52,461	-40,388	-92,849
Net indebtedness**	217,207	302,403	85,196
Liquid funds	188,642	88,072	-100,570
Investments in intangible assets and property, plant and equipment	50,722	36,693	-14,029

T 01

Employee indicators	2015	2016	Change
Employees	2,932	3,034	102
of which trainees	49	55	6
Personnel expenses ratio	20.0 %	20.8 %	0.8 %-points
Revenue per employee in k€	260	265	5
EBIT per employee in k€	-1	-33	-32

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* Intangible assets and property, plant and equipment less accrued investment grants plus net current assets except for current net liquidity

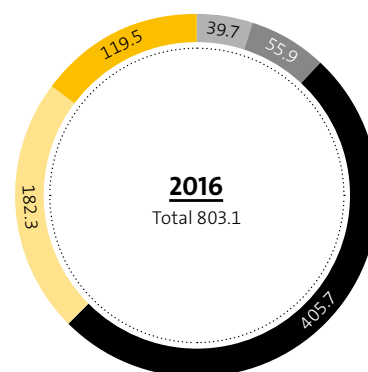
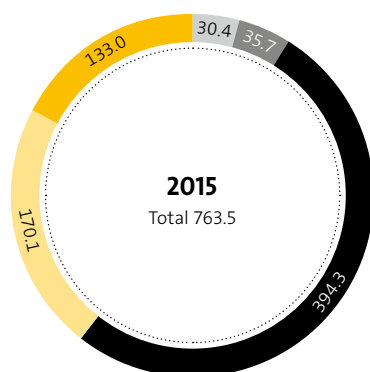
**Financial liabilities less liquid funds

QUARTERLY COMPARISON OF THE CONSOLIDATED INCOME STATEMENTS

in k€	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q4 2015	Change
Revenue	212,633	221,530	204,491	164,412	231,675	-67,263
Change in inventories of finished goods and work in progress	-2,538	21,741	24,074	-22,207	-28,991	6,784
Own work capitalized	53	165	310	815	1,321	-506
Other operating income	9,032	18,040	16,783	19,572	40,107	-20,535
Cost of materials	-131,311	-161,333	-167,937	-116,046	-136,372	20,326
Personnel expenses	-43,899	-43,395	-42,256	-42,300	-37,370	-4,930
Amortization and depreciation	-11,757	-11,876	-39,653	-9,780	-12,161	2,381
Other operating expenses	-41,915	-40,332	-38,458	-45,502	-44,092	-1,410
Operating result	-9,702	4,540	-42,646	-51,036	14,117	-65,153
Financial result	-9,124	-5,804	-12,701	-6,844	-10,438	3,594
Result before taxes on income	-18,826	-1,264	-55,347	-57,880	3,679	-61,559
Taxes on income	-1,975	-971	-1,614	45,940	1,891	44,049
Consolidated net result	-20,801	-2,235	-56,961	-11,940	5,570	-17,510

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REVENUE BY REGION IN M €

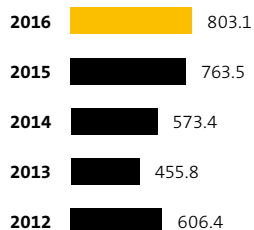


Germany Rest of Europe U.S. Asia Rest of the World

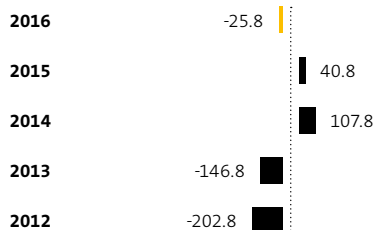
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DEVELOPMENT OF KEY FIGURES IN FIVE-YEAR COMPARISON

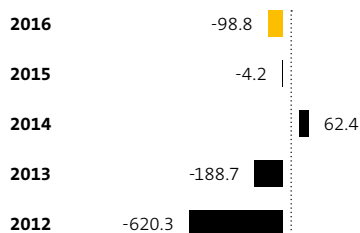
Revenue in m€



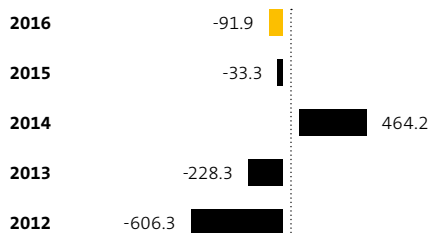
EBITDA in m€



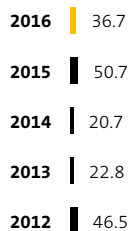
EBIT in m€



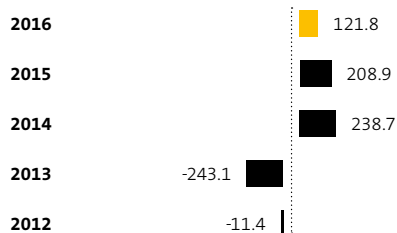
Consolidated net result in m€



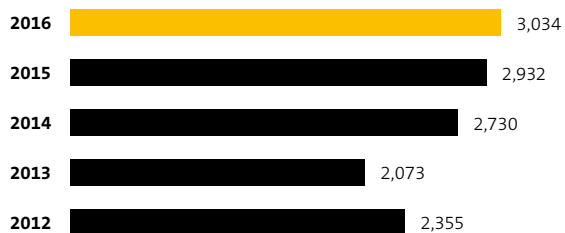
Investments in m€



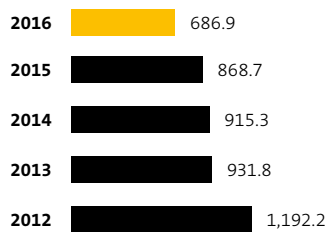
Equity in m€



Employees



Balance sheet total in m€



SUSTAINABILITY PERFORMANCE

ENVIRONMENTAL PROTECTION

Name and description	2015	2016	2017
Energy: total energy consumption (in primary GJ)	4,427,860	4,666,263	↑
Water: total water take-out (in m³)	1,981,634	2,028,001	↑
Water: waste water discharge (in m³)	1,630,594	1,742,460	↑
Emissions: total greenhouse gas emissions (in tCO _{2eq})	178,458	188,227	↑
Waste: total production waste (in t)	30,703	32,119	↔
Environmental compatibility: Share of ISO 14001 certified locations (weighted by average capacity), since 2014 without sales sites in Rest of the World (ROW)	100 %	100 %	↔
Packaging: material (in t)	2,273	2,646	↔
Environmental violations: sanctions due to environmental violations	0	0	↔
T 04			

CUSTOMER AND PRODUCT RESPONSIBILITY

Name and description	2015	2016	2017
Customer satisfaction with SolarWorld: share of satisfied customers among all respondents, aggregate number (trade: wholesalers, Certified partners)	87.3 %	86.3 %	↑
Customer satisfaction with SolarWorld products: share of satisfied customers among all respondents, aggregate number (trade: wholesalers, Certified partners)	99.5 %	99.0 %	↔
Earnings from new products with life cycles of less than 12 months	67 %	23 %	↑
Customer loyalty: Share of new customers (module and system customers)	28 %	19 %	↑
Customer loyalty: market share	2 %	2 %	↔
Sanctions due to product and service conditions	0	0	↔
T 05			

EMPLOYEES

Name and description	2015	2016	2017
Employment type: share of temporary employees (full-time equivalents)	22 %	6 %	←→
Attrition rate: share of employees leaving the company per year	8 %	10 %	↑
Collective bargaining agreements: share of employees covered by collective bargaining agreements	62 %	59 %	←→
Training and professional development/qualification: average training expenditure per employee (in €)	218.47	174.80	↓
Age structure of the workforce (persons)	< 31: 16 %, 31–40: 30 %, 41–50: 28 %, > 50: 26 %	< 31: 15 %, 31–40: 31 %, 41–50: 27 %, > 50: 27 %	←→
Absentee rate: total missed worktime due to sick leave/total planned working time in the calendar year	6 %	6 %	←→
Accident rate (per 1000 employees, incl. temporary workers)	17.4	16.9	↓
Relocation of work places due to restructuring: total costs of relocation (in k€) including compensation payments, severance pay, outplacement, recruitments, training, consulting	164	75	↑
Diversity: share of women in total workforce	26 %	26 %	↑
Diversity: share of women in management positions (without Management Board and managing directors)	17 %	22 %	↑
Discrimination: number of documented incidents	1	1	↓

T 06

SUPPLY CHAIN

Name and description	2015	2016	2017
Certification: ISO 9001 certification of suppliers (direct material)	98 %	94 %	↑
Certification: ISO 14001 certification of suppliers (direct material)	75 %	73 %	↑

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COMPLIANCE AND SOCIETY

Name and description	2015	2016	2017
Effects of subsidies: Share of business activity in markets with feed-in tariffs or regulated pricing. The sales share in markets without feed-in tariff or regulated pricing is still below 1%. Benchmarks: heavily subsidised markets such as nuclear energy, German coal, EU agricultural market	100%	100%	←→
Governmental financial assistance: investment grants and research grants (in k€)	9,262	6,941	↓
Donations to political parties (in k€)	0	0	←→
Other donations (in k€)	165	49	↓
Regional development: Solar2World (delivered kWp)	113	129	←→
Share of business activity in regions with a corruption index (Transparency International) of less than 60	11%	20%	←→
Ascertained corruption incidents	0	0	←→
T 08			

INNOVATION

Name and description	2015	2016	2017
Innovation: total R&D expenditures (in m€)	23	26	↓
Innovation: Total investment in research on ESG relevant aspects. Our entire business (solar energy) is ESG relevant.	100%	100%	←→
Number of inventions filed in the last 12 months	77	55	←→
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GROUP MANAGEMENT REPORT

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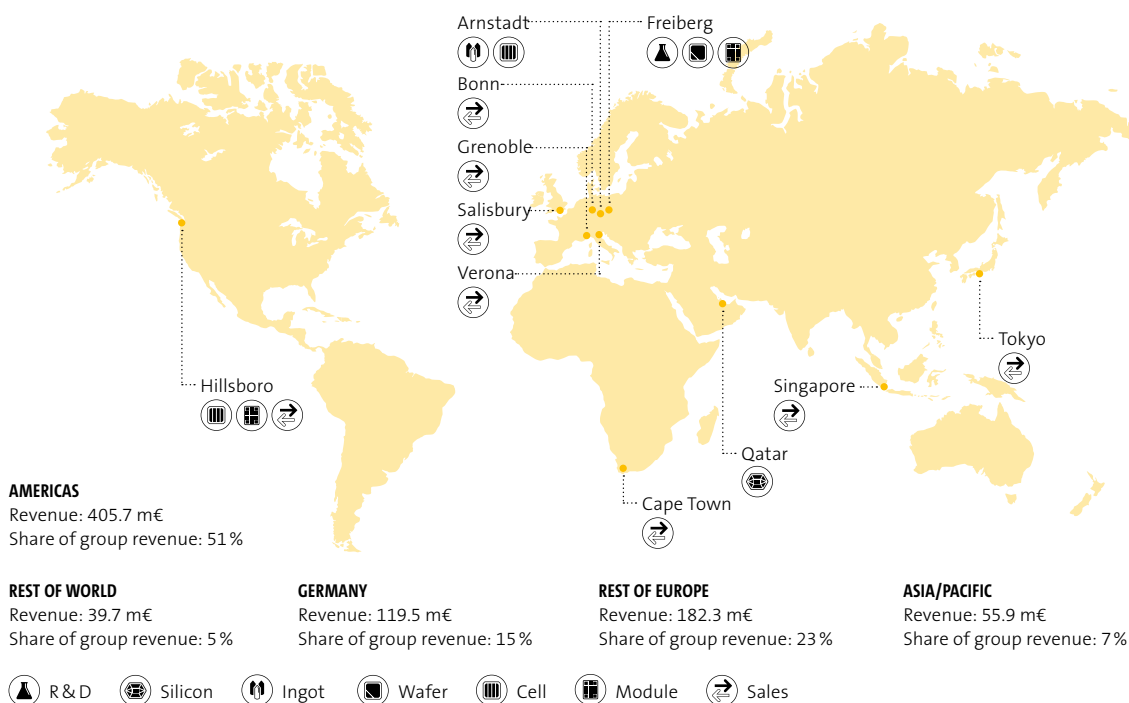
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GENERAL INFORMATION ABOUT THE GROUP

SOLARWORLD GROUP AT A GLANCE

SOLARWORLD WORLDWIDE



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COMPANY PROFILE

The SolarWorld group offers its customers solutions for generating and using electricity from the power of the sun cleanly and cost-effectively. The company manufactures crystalline silicon-based solar power products and is active

at all stages of the value chain: from crystallization and wafering to the cell and module. SolarWorld also conducts its own research and development activities. The company is positioned in the quality segment of the international solar markets under the brand "SolarWorld – REAL VALUE."

SolarWorld stock company (AG) is the holding company for the SolarWorld group and is based in Bonn, Germany where the company was founded by Dr.-Ing. E. h. Frank Asbeck in 1998. The company's manufacturing facilities are located in Arnstadt and Freiberg (Germany) as well as Hillsboro, Oregon (United States). SolarWorld is the largest integrated solar manufacturer outside of Asia.

As at December 31, 2016, the SolarWorld group employed 3,288 people. In fiscal year 2016, SolarWorld achieved shipments of 1.4 gigawatts and consolidated revenue of € 803 million. SolarWorld generated around half of its consolidated revenue (€ 406 million) on the American continent and the other half (€ 397 million) in the Europe, MENA, Asia-Pacific and Africa markets.

Sales for the American continent are managed from the site in Hillsboro, Oregon, while the distribution center for all other international markets is located in Bonn. SolarWorld has additional sales sites in Grenoble (France), Verona (Italy), Salisbury (United Kingdom), Singapore (Singapore), Tokyo (Japan) and Cape Town (South Africa).

PRODUCTS AND SERVICES. SolarWorld offers solar energy solutions for home owners, business owners and energy suppliers, and is active in the corresponding market segments Residential, Commercial and Utility. SolarWorld's core product is the solar module. Proven quality, high performance and durability are some of the key features that differentiate SolarWorld modules from international competitors.

SHAREHOLDER STRUCTURE. Since 2014, two long-term anchor investors have held shares in SolarWorld AG: Qatar Solar S.P.C. with 29.00 percent as well as founder and CEO Dr.-Ing. E. h. Frank Asbeck with 20.85 percent (as at December 31, 2016). 50.15 percent of the stock is currently in free float.

► Capital stock and shareholder structure – p.030

GROUP STRUCTURE. As at the cut-off date, December 31, 2016, the SolarWorld group comprised a total of 31 (December 31, 2015: 32) companies. ► Note 2.3.3 Group structure – p.122

SEGMENT STRUCTURE. As in past years, SolarWorld's operational business was divided into four categories in 2016: "Production Germany," "Production U.S.," "Trade" and "Other." These provide the structure for our internal organization, management and reporting.

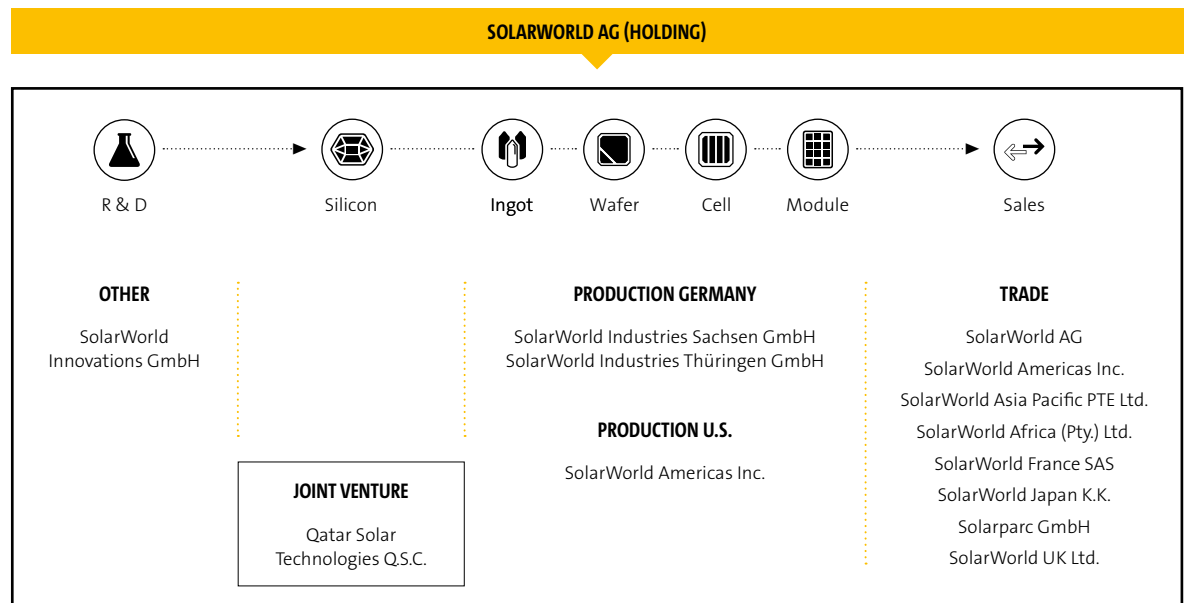
The "Production Germany" and "Production U.S." segments each comprise the regionally coherent and fully integrated production activities.

The "Trade" segment covers international sales of our products. It also includes proceeds from sales of solar wafers and cells to the international solar industry as well as proceeds generated from electricity sales, project planning, and the sale and operation of solar power stations.

Business activities where the financial impact is not or is no longer crucial to the assets, financial position and earnings of the group are included in the "Other" category.

MANAGEMENT STRUCTURE. The SolarWorld group is managed by a five-member Management Board. The managing directors / presidents of the subsidiaries and directors / vice presidents form the first management level below the Management Board. The second management level comprises the heads of department at the individual sites.

STAGES OF THE SOLAR VALUE CHAIN AND SEGMENT STRUCTURE



G 04

STRATEGY

The strategy and business model of the SolarWorld group are based on the vision of a solar world. This vision has been part of the company since it was founded in 1998 and has built our success. Today we are operating in an industry that is still young, with excellent growth prospects. It is highly competitive precisely for this reason. SolarWorld, like all solar manufacturers, is currently exposed to cut-throat competition resulting mainly from overcapacities in the Chinese solar industry. In this environment, SolarWorld's actions are guided by a group strategy that aims for a clear positioning and differentiation in the solar market: "Thanks to our customer-oriented solar power solutions, we offer real added value and are international leaders in technology."

Five core themes are key in this context:

Customer focus. Our products and services are tailored to the needs of our customers, offering real added value such as particularly high performance and quality and thus sustainably reduced costs of electricity.

Performance and innovation. SolarWorld's products deliver high power. SolarWorld is a pioneer of monocrystalline PERC (passivated emitter rear cell) high-performance cells, particularly robust glass-glass modules and bifacial solar power products.

Sales growth. The group aims to increase shipments in its international markets. For this, SolarWorld uses the strength of its brand under the globally uniform slogan “REAL VALUE,” which customers identify SolarWorld with.

Cost efficiency and profitability. SolarWorld is reducing costs in all areas.

Development of the organization. The group's organizational units are becoming leaner and more efficient.

SHAPING CHANGE PROCESSES. These core themes provide the framework for us to implement our group strategy. In the individual departments, we are working on medium and long-term change processes with the support and involvement of our employees. They are assisted in this by so-called change projects. One example is the SAP program: Following our successful introduction of SAP as a global ERP system in October 2015, other sub-projects were implemented in 2016. The program will be continued in 2017. SAP provides the technological basis for further progress in the five strategic core themes.

FLEXIBLE RESPONSE TO MARKET TRENDS. The capability for fast and flexible action is decisive in the rapidly changing solar market, as we saw once again in 2016: Price pressure in the international solar markets increased noticeably during the second half of the year – with significant negative impacts on shipments, revenue, liquidity and the operating result. SolarWorld attempted to mitigate these impacts with a series of operational measures in the third and fourth quarters of 2016. These included an adjustment of production volumes and savings on overhead costs. In addition, the Group has decided to strategically realign the business model by implementing a clear focus and streamlining in technology, production activities and the product portfolio.

FOCUSING 2017+

As part of the planned focusing, the management of SolarWorld AG will position business over the 2017 to 2019 period in a way as to enable SolarWorld to successfully compete in a challenging, rapidly changing market environment. The main topics are:

FOCUSING ON MONOCRYSTALLINE PRODUCTS WITH PERC AND BIFACIAL TECHNOLOGY. In the future, we will focus on manufacturing monocrystalline solar power products with PERC technology. Our customers have recognized the added value of our PERC modules, which are in high demand. SolarWorld has been successfully producing high performance monocrystalline PERC cells and modules since 2012 and has continuously increased the PERC share of its production volumes to date. As a further development of this approach, we now offer bifacial modules, which turn sunlight into power both from the front and rear side and can thus generate significantly increased yields. PERC technology can also be combined with other performance-enhancing processes and used as a platform for high power made by SolarWorld. The production of multicrystalline wafers, cells and modules, the efficiencies of which are lower for technological reasons, will thus be shut down in the course of 2017. ► *Research and development – p. 038*

FOCUSING AT THE PRODUCTION SITES. As a manufacturing company, SolarWorld will continue to be active at all stages of the value chain, from the raw material to the solar module, so that it can continue to offer its customers integral manufacturer's knowledge while minimizing potential dependency on the component market. In the course of the focusing process, the company plans to bundle its production activities at individual sites: crystal growing and cell manufacturing in Arnstadt, Thuringia, wafering and module manufacturing in Freiberg, Saxony. The smaller production entities for modules in Arnstadt and for cells in Freiberg will be shut down or relocated. Thereby, the group will be able to selectively develop the most competitive production areas at each site reaching economies of scale faster, reducing redundancies, simplifying processes and creating room for future growth.

► *Future development in production – p. 079*

FOCUSING THE PRODUCT PORTFOLIO. In the future, SolarWorld will offer its customers a concentrated high-class module portfolio. It is based on two monocrystalline cell variants: PERC and bifacial. This focusing will enable faster availability and hence a better service for our customers. It also enhances cost efficiency in production and reduces expenses incurred in connection with a product, e.g. in product management, in the global supply chain and in sales and marketing. ► *Future development in trade – p. 078*

REDUCING COSTS. Focusing reduces the complexity of processes in the group and enables savings along the value chain and in overheads. It is accompanied by a reduction in HR requirements. Accordingly, the number of employees is to be reduced by about 400 until 2019.

► *Future human resources development – p. 080*

The successful implementation of measures resulting from this focusing is extremely important for the competitiveness of our business.

CORPORATE MANAGEMENT AND CONTROL

STRATEGIC GROUP MANAGEMENT. The Management Board determines the group's goals annually. With these goals in mind, the units of global controlling coordinate business planning for the group. Business planning is structured into requirements for individual departments, which are then translated into specific, measurable targets as part of operational budget planning.

To produce, manage and control operational planning for the group, we primarily refer to the financial performance indicators of revenue, EBITDA (earnings before interest, taxes, depreciation and amortization) and EBIT (earnings before interest and taxes). The units of global controlling continuously monitor these and other department-specific indicators in a target-actual comparison and produce a monthly report for the Management Board. This report analyzes business trends by regions and identifies gaps in a target-actual comparison.

Furthermore, controlling also monitors working capital and liquidity as well as the results of operational measures to boost efficiency and cut costs.

In the "Trade" segment, we produce a daily summary of shipments, revenue and order levels. On a monthly basis, a more detailed analysis and target-actual comparisons of shipments and revenue by product groups, regions and customers are produced in standardized form and reported to the Management Board. As a result, we identify trends and seasonal fluctuations in the price and quantity structure at an early stage. Once every year, we also measure customer satisfaction. Here, we rely in part on customer surveys and information obtained from direct dialog with our customers.

In the "Production Germany" and "Production U.S." segments, we focus on trends in costs per unit and per watt, as well as in production output. We pay particular attention to individual cost drivers such as material usage and the ratio of personnel costs. Non-financial indicators such as productivity figures, employee recruitment and retention as well as resource consumption supplement the financial control indicators.

Management Board members maintain constant dialog with each other. In addition, they convene for a regular meeting every week at which they talk about the business situation, discuss opportunities and risks, review target achievement and adjust targets if necessary. In the event of deviations from plan, the Management Board introduces necessary counter-measures in close consultation with the management bodies of group companies. In addition, members of the Board and managing directors of the subsidiaries get together several times a year. At these meetings, the respective regional and market-specific circumstances are taken into account and further short- to medium-term goals and measures are decided upon.

INTERNAL CONTROL SYSTEM. The internal control system (ICS) in the SolarWorld group includes various mechanisms and has a decentralized structure. Corporate controlling, group accounting and the corporate audit perform oversight control functions. Corporate controlling is responsible for monthly reporting of the segment-based financial indicators and for the risk management system. Group accounting

ensures that accounting is uniform and complies with legal requirements and standards as well as the group's internal guidelines and generally accepted accounting principles. ► *Internal control and risk management system in relation to the group accounting process – p. 063*

The corporate audit pursues an integrated, risk-oriented and systematic approach in its audits. One of its aims is to assess the reliability of the risk management system and internal control system. The audit examines processes in respect to regularity, security, safety and efficiency criteria and compliance with legal requirements and company policies. As an instrument of the Management Board, the corporate audit is organizationally and functionally independent, thus enabling the proper performance of its duties. Corporate audit can autonomously determine the scope of the audit and reporting. The audit reports its results to the Management Board and the Supervisory Board. If necessary, corporate audit can provide support with the implementation of particular measures.

DISCLOSURE RELEVANT FOR TAKEOVERS

The information pursuant to Section 315 (4) German Commercial Code (HGB) can be obtained from the following paragraphs:

RESTRICTIONS ON TRANSFER. Under the terms of a shareholder agreement of December 19, 2013, CEO Dr.-Ing. E. h. Frank Asbeck and Solar Holding Beteiligungsgesellschaft mbH, in which he and his family members hold a direct and indirect stake, undertake not to dispose of the 2,904,720 no-par value shares acquired from creditors in the course of the

financial restructuring and not to enter into any agreements concerning the voting or other rights associated with these shares (Section 315 (4) No. 2 HGB). The defined lock-up period lasts until termination of the shareholder agreement or until repayment by SolarWorld AG of a very substantial part of the financial liabilities, whichever occurs sooner. The shareholder agreement ends with the conclusion of the ordinary Annual General Meeting which decides on fiscal year 2018.

AMENDMENTS TO THE ARTICLES OF ASSOCIATION AND APPOINTMENT AND DISMISSAL OF MANAGEMENT BOARD MEMBERS. The provisions concerning the appointment and dismissal of Management Board members as well as amendments to the Articles of Association (Section 315 (4) No. 6 HGB) result from the German Stock Corporation Act (AktG).

MANAGEMENT BOARD POWERS. Regarding Management Board powers (Section 315 (4) No. 7 HGB), reference is made to the Stock Corporation Act. In addition, the following applies:

At the Annual General Meeting on May 30, 2014, the Management Board was authorized with the approval of the Supervisory Board to increase capital stock once or several times to a total of up to € 7,448,000.00 for a period of five years, i.e. until May 30, 2019, by issuing new, no-par value bearer shares or registered shares in exchange for cash contributions or contributions in kind.

AGREEMENTS IN THE EVENT OF A CHANGE OF CONTROL. As of December 31, 2016, financial liabilities amounting to € 360.6 (December 31, 2015: 377.2) million existed for which creditors can demand early repayment in the event of a change of control (Section 315 (4) No. 8 HGB). A change of control shall be deemed to occur if Qatar Solar S.P.C. and the current or future members of the Management Board together directly or indirectly hold a total of more than 49.9 percent of the issued shares, another person or a group of persons acting in concert other than those aforementioned directly or indirectly holds more than 30 percent of issued shares, or all material assets of SolarWorld AG are sold to one person or a group of persons acting in concert.

The information pursuant to Section 315 (4) No. 1 and No. 3 HGB (the composition of subscribed capital and shares in capital) can be found under ► *The stock – p. 028*. With regard to Section 315 (4) Nos. 4, 5 and 9 HGB, no information is required.

REMUNERATION OF THE MANAGEMENT BOARD AND SUPERVISORY BOARD

For information about the remuneration system for the Management Board and Supervisory Board, please see the ► *Remuneration report – p. 094*. This information is part of the group management report.

BUSINESS REPORT 2016

THE STOCK

STOCK MARKETS HEAVILY INFLUENCED BY POLITICAL FACTORS IN 2016. At the beginning of the year, with weak economic data from China and falling raw material prices, mainly macroeconomic factors weighed on the European capital markets and led to some considerable price declines, accompanied by high volatility. Thanks to the ongoing expansive monetary policy of the European Central Bank and a steady improvement in the economic environment in Europe, a recovery trend began in the middle of the first quarter, though it was still subject to strong fluctuations. Then, from mid-2016, stock markets were overshadowed by a variety of political decisions and conflicts. Indices came under renewed pressure in June 2016, as speculation over the outcome of the imminent referendum on Britain's departure from the European Union (Brexit) unsettled the markets. The unexpected decision by the majority of Britons in favor of Brexit caused a brief shock on the capital markets. By early July, however, a significant upturn had begun. European stock markets made up their losses of the previous months and the capital market environment stabilized. In November, the election of Donald Trump as the 45th President of the United States sent markets into a brief turmoil once again. Yet, this rapidly gave way to outright euphoria, culminating in a strong year-end rally on the stock markets to which nearly all major indices owe their positive performance for the year.

The German stock index (DAX) got off to its weakest start in years, posting a substantial loss on the very first day of trading. It fell to its annual low of 8,752.87 points on February 11, 2016. The first half of the year then continued to be marred by negative performance and severe price fluctua-

tions. During the second half of 2016, however, Germany's leading share index was much less volatile and saw a return to growth. Finally, in December, a year-end surge pushed the DAX to a positive performance for 2016 as a whole. At the close of trading on December 30, 2016, it reached its high for the year of 11,481.06 points and thus showed a rise of 12 percent in the year under review.

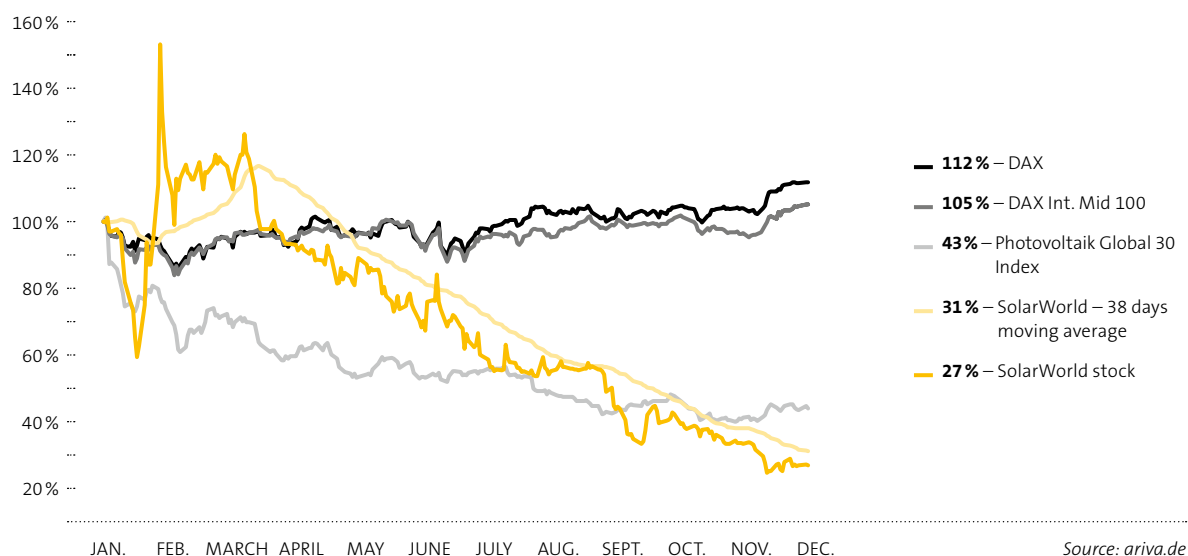
SOLAR STOCKS DRAGGED DOWN BY INDUSTRY CRISIS. Solar stocks came under heavy pressure in 2016, first because of macroeconomic difficulties and later due to a resurgence of the global solar industry crisis. Continuous price declines over the course of the fiscal year were the result. The Photovoltaik Global 30 Index, which represents the 30 largest solar companies by market capitalization, closed at 11.51 points on December 30, 2016, and thus lost around 57 percent in the 2016 fiscal year.

SOLARWORLD STOCK DECLINED. At the beginning of 2016, the price trend of the SolarWorld stock (ISIN DE000A1YCMM2) followed the general negative market environment. After the preliminary financial results for 2015 were announced at the beginning of February, the stock price briefly recovered, reaching its highest point in the year under review at € 13.69. However, this was only a temporary uplift. Negative media reports and speculation about the legal dispute between the U.S. silicon supplier Hemlock Semiconductor Corp. and SolarWorld subsidiary SolarWorld Industries Sachsen GmbH triggered a downward trend. In July, a judgment of the first instance in the United States upheld Hemlock's claim and so intensified the stock price

decline. Then, in September, fears about the impacts of the emerging solar industry crisis on the economic position of SolarWorld AG led to further falls in the stock price. This negative sentiment remained unchanged at the end of

the year. As a result, the SolarWorld stock fell 73 percent overall in the year under review, to close at € 2.432 on December 30, 2016.

SOLARWORLD STOCK PERFORMANCE COMPARISON



G 05

INDICATORS FOR THE SOLARWORLD STOCK (ISIN DE000A1YCMM2)

Capital stock as at December 31, 2016	€ 14,896,000
Total number of shares as at December 31, 2016	14,896,000
Proportion of shares in free float as at December 31, 2016	50.2%
Xetra closing price as at January 2, 2016	€ 8.95
Xetra closing price as at December 30, 2016	€ 2.432
Market capitalization as at December 30, 2016*	€ 36,227,072
Average Xetra trading volume 2016	58,681 shares per trading day

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* Product of number of shares and closing price

CAPITAL STOCK AND SHAREHOLDER STRUCTURE

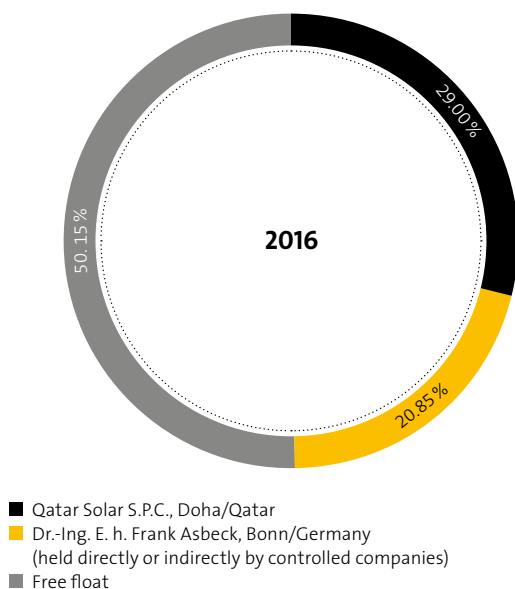
As at the cut-off date December 31, 2016, the capital stock remained unchanged at € 14,896,000.00 and was divided into 14,896,000 no-par-value bearer shares with an imputed nominal value of € 1.00. SolarWorld AG has issued exclusively common shares, so that each share entitles its holder to one vote.

In the year under review, the shareholder structure of SolarWorld AG remained unchanged. SolarWorld AG held no treasury stock as at December 31, 2016. Furthermore, in 2016, no voting rights announcements pursuant to Sections 21, 25 and 25a of the German Securities Trading Act (WpHG) were reported to the company.

ANNUAL GENERAL MEETING

The sixteenth Annual General Meeting of SolarWorld AG was held on June 7, 2016, in Bonn. Fifty-one percent of the company's capital stock was represented. The actions of the Management Board, chaired by Dr.-Ing. E. h. Frank Asbeck, and the Supervisory Board, chaired by Dr. Georg Gansen, were approved for fiscal year 2015 with majorities of more than 99 percent of the capital represented. All other proposed resolutions of the Management Board and Supervisory Board were also approved with large majorities of more than 99 percent. All resolutions and voting results from the Annual General Meeting of SolarWorld AG can be found on our website ► www.solarworld.de/agm2016.

SHAREHOLDER STRUCTURE AS AT DECEMBER 31, 2016



MAJOR BUSINESS EVENTS

A FISCAL YEAR OF TWO HALVES. Business developed well for SolarWorld in the first half of 2016, with a positive operating result in the second quarter. However, SolarWorld did not continue this trend in the second half of the year. From mid-year, the international market for solar power products was hit by an unexpectedly sharp drop in prices, triggered by a collapse of the Chinese domestic market. This resulted in a further increase of already existing overcapacities in China. Market turbulence had a negative impact on SolarWorld AG's business development in the second half-year. Although we increased our shipments and consolidated revenue in 2016 as a whole, we did not achieve our forecast targets ► [*Economic position 2016 – p. 046*](#)

JUDGMENT OF THE FIRST INSTANCE IN HEMLOCK CASE. In the litigation between silicon supplier Hemlock Semiconductor Corp. and SolarWorld Industries Sachsen GmbH, a subsidiary of SolarWorld AG, Hemlock's claim for damages amounting to USD 585 million plus interests of USD 208 million was granted in the first instance on July 26, 2016. SolarWorld Industries Sachsen GmbH has appealed against this judgment of the first instance at the Intermediate Court of Appeals in Cincinnati, United States, in August 2016.

In spite of this judgment in the first instance, SolarWorld AG continues to assume that Hemlock will not be able to enforce any claims in Germany. There are anti-trust concerns under European law regarding the effectiveness of the underlying supply contracts. If a potential final ruling by a U.S. court was to be enforced in Germany, Hemlock would have to initiate a recognition and enforcement process at German courts according to Sec. 722 (1 et seq.) of the German code of civil procedure. These proceedings would require the existence of a final – i.e. non-appealable – judgment from the United States. Moreover, in such a process, the compliance with fundamental principles of German law would have to be considered in reaching a verdict. According to German law, European anti-trust law is a fundamental principle of the legal system. Thus, the management of SolarWorld AG considers it more likely than not that such a procedure of recognition and enforcement will fail to be concluded successfully in Germany. ► [*Legal risks – p. 071*](#)

THE MARKET

EXPANDING ECONOMIES IN INDUSTRIALIZED COUNTRIES. Despite temporary uncertainties, the world economy continued to recover in 2016. Global output grew 3.5 percent, after a more modest 3.1 percent in the previous year. Expansive monetary policy, wage growth and low energy prices boosted private consumption in industrialized countries. Exports also saw strong growth. Corporate investment remained subdued, however.

Economic output in the euro zone picked up over the course of the year. All countries in the region posted growth in 2016. Gross domestic product in the euro zone as a whole

increased by 1.7 (2015: 1.5) percent. The Brexit decision did not have any immediate major effect on Europe's economic performance. Economic output was up 1.6 percent in SolarWorld's most important sales region, the United States. Unlike the European Central Bank, the Federal Reserve decided to raise interest rates. Together with the new government's announcement of more public investment, this led to another upward revaluation of the U.S. dollar. It was worth € 0.92 at the beginning of the year under review and closed the year at € 0.95.

THE SOLAR MARKET IN 2016 – A YEAR OF TWO PARTS. The international solar market changed markedly over the course of the 2016 fiscal year. It started out with good growth rates. Demand in the largest solar markets – the United States, Japan and China – looked very robust, while many market participants invested in new technologies and put additional production capacities into operation. However, the market made an abrupt turnaround in the middle of the year.

The Chinese solar market nosedived in the second half-year, after the government's surprise move to cut subsidies on July 1, 2016, in order to dampen an unexpectedly high level of new installations in China and thus prevent that its planned targets were already exceeded. Consequently, no longer able to sell in their own country, Chinese manufacturers exported their excess production to the world market, at dumping prices. Moreover, many Chinese solar producers built up extra capacities outside of China so they can legally avoid customs duties in Europe and the United States. As a result, around 10 GW of new production capacity went into operation at mid-year, further increasing oversupply in the solar market.

Global prices for solar products came under stronger pressure than market participants anticipated. The dramatic decline within four to five weeks destabilized the industry in the third quarter. Customers were unsettled and waited to see whether prices would keep falling. Investment plans were delayed to benefit from the market trend for ever lower prices. This led to a reduction of demand in the second half of the year compared with the first six months.

Nevertheless, Bloomberg reports that global newly installed capacity in 2016 increased 34 percent compared with the previous year, to 75 (2015: 56) GW. Installations were considerably higher in the first half-year – a new development in the solar industry, where demand has previously always been higher in the second half of the year due to seasonal factors.

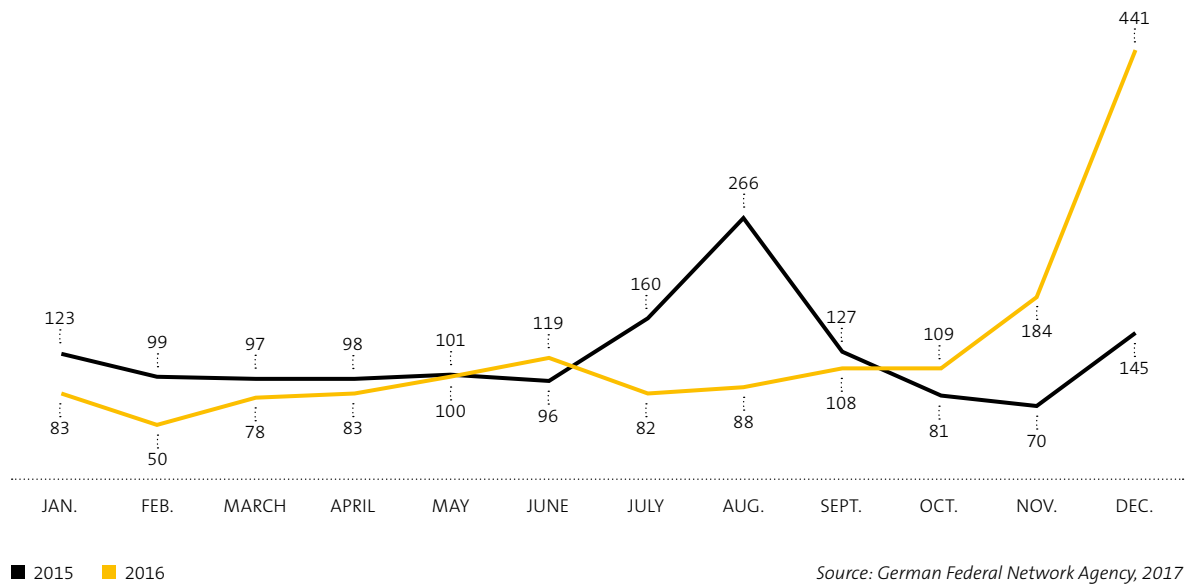
U.S. CONTINUES UNINTERRUPTED GROWTH. In the United States, new installations of solar modules almost doubled compared with the previous year. According to SEIA, newly installed capacity in 2016 reached around 14.6 (2015: 7.5) GW. Utility was the largest segment, accounting for about 70 percent of new installations. The sharp rise by 145 percent compared with the previous year was due to the implementation of

many large-scale projects. These had been already planned last year when it was still expected that the Investment Tax Credit (ITC) would be phased out at the end of 2016. According to SEIA data, electricity production costs in the sunniest U.S. states currently stand at between just US\$ 0.035 and US\$ 0.05 per kWh. This means that power producers, regardless of subsidy schemes, have a strong interest in building solar parks as a hedge against future gas price fluctuations. The Commercial segment, in which SolarWorld is well represented in the United States, also did well in 2016: It grew nearly 40 percent compared with 2015. The Residential segment increased too, but with 19 percent not as strong as the other segments.

EUROPE SHRINKS AGAIN. Unlike the U.S. market, the European solar market contracted in 2016. In particular, this was due to a decline in newly installed capacity in the United Kingdom. According to the UK Department of Energy and Climate Change, the British solar market more than halved to 1.8 (2015: 4.1) GW. In Germany, by contrast, new installations of solar power systems rose for the first time since 2011 and reached with 1.52 (2015: 1.46) GW a small and unexpected gain at year-end. According to Bloomberg, demand in France dropped to 0.7 (2015: 0.9) GW.

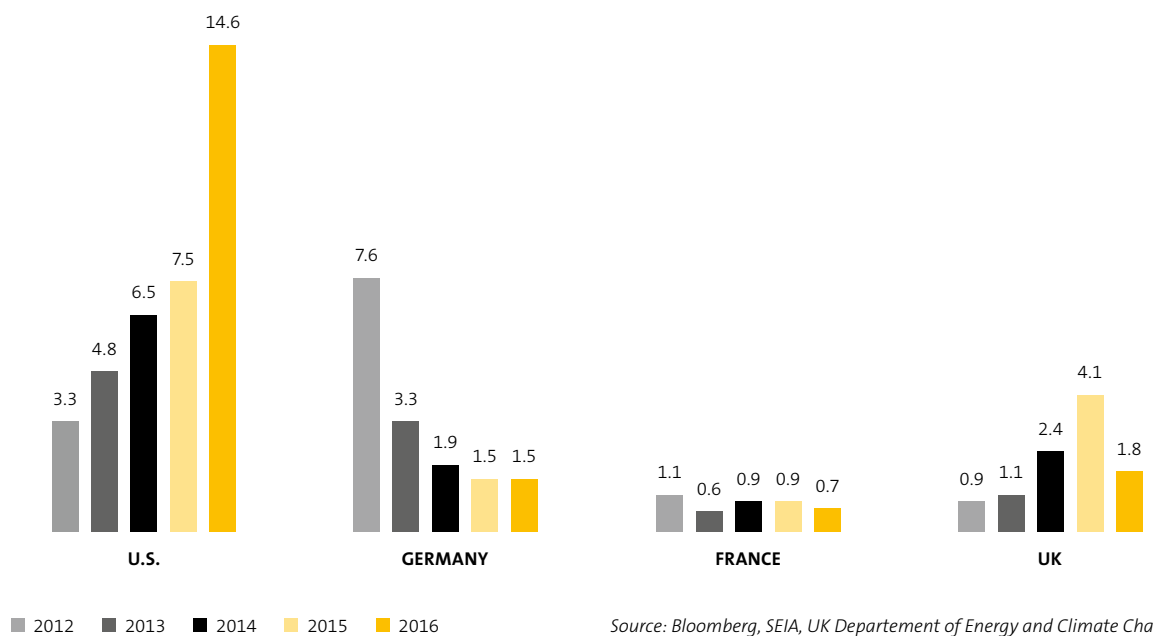
ASIAN MARKETS SEE STRONG EXPANSION IN FIRST HALF-YEAR. The Asian market was dominated by China and Japan once again. According to the Chinese energy agency, newly installed capacity in China increased by 81 percent to 34.5 (2015: 19.1) GW in 2016. However, more than 65 percent of these installations were added in the first half of 2016. This rapid development within the first six months of the year is what led the Chinese government to abruptly pull the plug on the installation of solar power systems on July 1, 2016, and is the reason why supply and demand on the global solar market were thrown completely off balance. According to Bloomberg, newly installed solar power systems in Japan fell to 9.2 (2015: 11.5) GW in 2016. The market remained robust, however, and was the third-largest solar market in 2016 after China and the United States.

NEW SOLAR POWER INSTALLATIONS IN GERMANY IN MW



G 07

HISTORICAL DEVELOPMENT OF OUR MAIN SALES MARKETS IN GW



G 08

REPERCUSSIONS OF THE GENERAL CONDITIONS ON BUSINESS DEVELOPMENT

SolarWorld's business development reflects the solar market trend. In the first half of the year, the company significantly increased shipments and revenue compared with the same period of the previous year. Good performance in the international solar markets and falling production costs allowed the group to generate a positive operating result once again in the second quarter of 2016. The situation

deteriorated in the second-half year and the group was not able to compensate for swiftly falling prices with regard to costs. The unexpected drop in demand compared with the first half of 2016 led to a build-up of inventory and tied up a large part of the group's liquidity. As a result, SolarWorld had to cut its utilization of production capacities and lay off temporary workers. With a sales campaign, the group was able to reduce inventories by year-end. However, it did not reach its targets of early 2016.

TRADE

SHIPMENTS REACH 1.4 GIGAWATTS. SolarWorld grew its shipments in its core business of solar modules and systems by 21 percent in 2016 to 1,337 (2015: 1,108) MW. Together with sales of solar wafers and cells, groupwide shipments were up 19 percent to 1,375 (2015: 1,159) MW. This is the highest volume of shipments in one year that the company has achieved so far. 86 percent of our shipments were generated outside of Germany (2015: 82 percent).

DIFFICULT SECOND HALF-YEAR. SolarWorld had a pleasing first half-year in 2016. We grew our shipments in this period by 50 percent to 682 (H1 2015: 456) MW. In the second half of the year, owing to international market turbulence, SolarWorld's growth trend did not continue as planned.

► *The solar market in 2016 – a year of two parts – p. 032.* This development led to building up excessive inventories. However, thanks to a sales campaign, we kept our shipments stable in the second half of 2016 and could reduce inventories again at the end of the year, compared with the third quarter 2016.

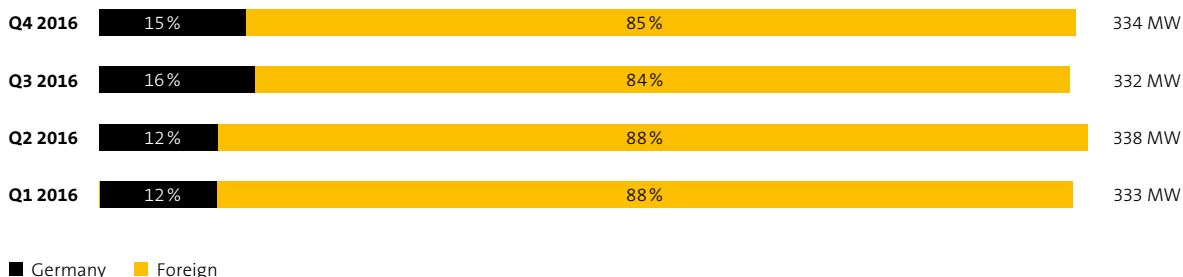
U.S. LARGEST MARKET AGAIN. As in previous years, the United States was SolarWorld's most important single market in 2016. We placed around half of our groupwide shipments here. In the 2016 reporting period, we achieved growth of 22 percent compared with the previous year. Our Commercial and Res-

idential business segments did best. Because of the difficult market trend in the second half of the year, however, we did not achieve our targets for 2016. We usually have a disproportionately strong fourth quarter in this market. Owing to the general market trend, this did not happen in 2016.

GROWTH IN EUROPE. Contrary to the trend in the European market as a whole, SolarWorld increased its shipments in Europe by 12 percent in 2016, compared with the previous year. In the German market, we kept our shipments stable compared with 2015. In the United Kingdom, however, where the solar market dropped sharply in 2016, our shipments fell too. We made up for this with growth in other European markets. Once again, our performance in France was particularly pleasing, with growth of 49 percent. In this market, we are strongly represented particularly in large-scale projects, and we were once again the most-sold module brand in 2016.

SLIGHT INCREASE IN ASIA-PACIFIC AND AFRICA. SolarWorld also increased its overall shipments in 2016 in markets outside of the U.S. and Europe, which are highly price-driven. One significant project in the Asia-Pacific region was a large-scale solar plant in Sri Lanka, with a capacity of 25 MW. In southern Africa, we continued our successful trend of recent years.

REGIONAL DEVELOPMENT OF SHIPMENTS OF MODULES AND SYSTEMS



G 09

PRESENT IN ALL MARKET SEGMENTS. We were present in all three major market segments in 2016: Residential, Commercial and Utility. In all areas, we successfully emphasized our products' added value, such as high quality and durability. In 2016, we supplied modules for a series of large-scale projects, for example in France, the United States, Sri Lanka, Germany and Turkey.

TREND TOWARDS MONO-PERC. SolarWorld customers were able to choose from a broad product portfolio in 2016. It comprised standard-format multicrystalline modules with 60 cells, as well as monocrystalline modules in standard format, XL format with 72 cells and the completely black, particularly aesthetic "mono black" variant. There was a clear trend towards monocrystalline products with PERC high-performance technology. In addition, we sold the first quantities of our new bifacial module, Bisun, in 2016. It was used for the first time in installations in the United States, Germany, Japan and the Middle East, where it generated the expected additional yield in each case.

BRAND AND MARKETING

SOLARWORLD – REAL VALUE. SolarWorld has a strong brand that makes us stand out from the mass of competitors globally. "SolarWorld – REAL VALUE" goes hand-in-hand with our promise of particular customer benefit. This is represented by our four core values:

- Proven quality
- Leading solutions for our customers
- A responsible partner you can trust worldwide
- Authentic focus on sustainability

These core values formed the basis of our brand communication in 2016, too. A representative customer survey in early 2017 confirmed again that our customers strongly identify with these values. More than 90 percent of those surveyed agreed that each of these values apply to SolarWorld. The "proven quality" aspect received a 99 percent agreement rate.

QUALITY PROMISE UNDERLINED AGAIN. In October 2016, we added the "VDE Quality Tested" quality mark to the numerous product certificates for our solar modules. SolarWorld quality has thus been externally verified once again. With their new quality mark, the Association for Electrical, Electronic & Information Technologies (VDE) certify the high reliability, low degradation and optimized functional safety

of SolarWorld modules. The quality mark also means that VDE continuously monitor our production facilities. This monitoring involves more stringent requirements, such as quarterly testing of modules taken from production runs at each manufacturing site.

LIVE SUSTAINABILITY. Sustainability is firmly anchored in the corporate vision and values of SolarWorld. To implement the “green idea” within the company and authentically convey this idea in our external communication is one of our key goals.

One prominent example in this area is our Solar2World program, which can look back on ten successful years in the 2016 reporting period. Ever since 2006, we have been supporting the development of regions, particularly in Africa and Latin America, using solar energy. ► *[SolarWorld Magazine 2017 – p.016](#)*

Furthermore, in 2016 SolarWorld once again received the GREEN BRANDS quality seal, which is awarded annually to brands that take on a high level of responsibility for the environment through ecologically sustainable measures in

production. The internationally acknowledged certificate is awarded following a challenging three-stage process (nomination, validation and final evaluation by an independent jury). The jury voted unanimously to once again award the quality seal to the company and its products. Thus, in 2016 SolarWorld for the first time received the GREEN BRANDS seal with a star.

WORLDWIDE SUPPORT FOR SALES. The priority for SolarWorld’s marketing team in 2016 was to help the sales department generate product sales and develop sustainable business structures and partnerships. More than ever in 2016, we emphasized cost-consciousness in our marketing activities, to achieve a broad international impact even without large advertising budgets. As part of this, we implemented measures for both B2B and B2C communication. In addition to our extensive communication via online and print media, in 2016 we again had a strong presence at international trade fairs, e.g. in Europe, the United States, South Africa, Japan and Australia. Another focus in B2B was to support our 1,140 Certified Partners, whom we incorporate into the business in various international markets.

PRODUCTION AND GLOBAL SUPPLY CHAIN

A MIXED YEAR. In the first half of 2016, SolarWorld's active capacity at all three production sites in Arnstadt and Freiberg (Germany) and Hillsboro (U.S.) was fully utilized. However, the abrupt market changes of mid-2016 marked a critical juncture for our manufacturing operations: Because of the sudden drop in demand, there was an excessive inventory build-up in the third quarter, particularly since, in June, we had set our production facilities on a further expansion course for the second half-year. To avoid any further increase in inventory levels, we cut back production at all sites in the fourth quarter and reduced the number of temporary workers significantly. ► [*Employees – p. 044*](#)

OWN PRODUCTION SUPPLEMENTED BY OEM. In the period under review, SolarWorld collaborated with two external original equipment manufacturers (OEMs) to add to the group's own capacities. The two OEMs produced multicrystalline solar modules for us, strictly in accordance with our specifications and quality standards. This collaboration offered flexible support, especially in the first half of 2016, when we were producing at our capacity limit.

CONTINUED UPGRADE TO HIGH POWER. In 2016, we further increased the proportion of PERC products that we produced, as well as that of bifacial cells and modules. In addition, over the course of the year, we continued with the upgrade of our facilities in Germany to manufacture products with five instead of previously three busbars. In the United States, this upgrade was completed in 2015. Thus, we are able to further improve the performance of our modules.

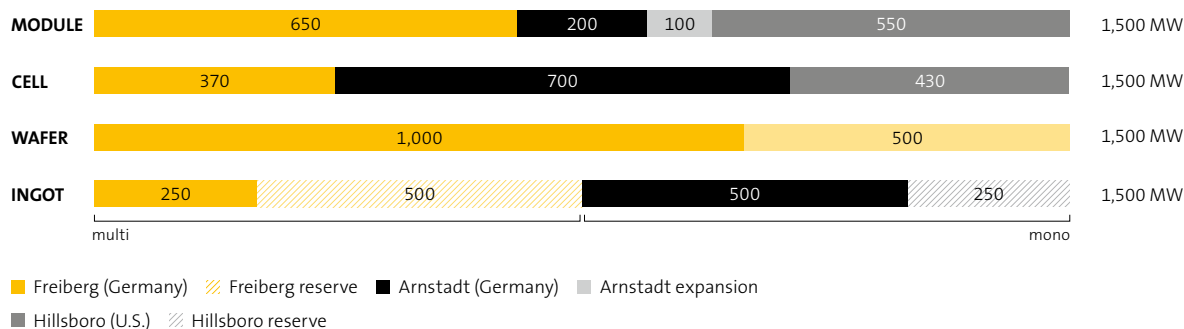
DIAMOND WIRE USED IN WAFER PRODUCTION. In the period under review, we began using diamond wire saws at our Freiberg site. It turned out that by employing this process the cost of sawing monocrystalline wafers can be considerably lowered. For this reason, we shall increase our capacities of diamond wire saws by around 500 MW in 2017.

WIDE PRODUCT RANGE MANUFACTURED. In 2016, SolarWorld manufactured a wide range of different module types and performance classes. This was due mainly to the parallel production of multi- and monocrystalline products and the successive increase in the share of high-power modules. The planned focus on monocrystalline modules and a simplified portfolio for 2017 will lead to greater efficiency and a better cost structure in production.

GLOBAL SUPPLY CHAIN MANAGED WITH SAP. In the period under review, we continued working to improve the SolarWorld group's global supply chain. The goal of our global supply chain is to ensure our company's requirement-oriented supply with materials, and to consistently offer our customers the highest product quality and excellent services. Since the end of 2015, we have been using SAP as a uniform ERP system to manage our global supply chain. Following a successful roll-out in the previous year, SAP helped us make further progress in 2016 toward more precisely matching production and sales.

PARTNERSHIPS WITH SUPPLIERS STRENGTHENED. Supplying our company with direct and indirect materials on good market terms is a key success factor for SolarWorld – especially in a year with such a difficult market development as 2016. During the period under review, therefore, it was again important to us to deepen our long-term relationships with suppliers and service providers and strengthen mutual trust. The “SolarWorld Supplier Day,” which we held for the fifth time in March 2016, offers us a regular forum where we can communicate directly with our suppliers.

PRODUCTION CAPACITIES 2016



G 10

RESEARCH AND DEVELOPMENT

CREATE ADDED VALUE – CUT PRODUCTION COSTS. Occupying a technological leadership position in the international solar market is strategically important for SolarWorld, to succeed against tough competition. We therefore conduct our own extensive research and development (R&D) in the group, with our subsidiary SolarWorld Innovations GmbH playing a lead role. In the 2016 fiscal year, as in previous years, we focused on two main tasks in R&D: to further increase added value for our customers and to find and implement cost-reduction possibilities in production.

FOCUS ON MONOCRYSTALLINE PROCESSES. Our research and development department pursued both multicrystalline and monocrystalline technology in 2016. Over the course of the year, however, it became increasingly clear that the monocrystalline approach offers the greater potential for SolarWorld: Monocrystalline PERC (passivated emitter rear cell) cells can be used as the base technology for making our products perform even better. Moreover, monocrystalline products offer the largest potential for cost reductions. These findings were crucial in our decision to focus on monocrystalline technology from 2017 onward.

USING PERC AS A PLATFORM. In the year under review, we continued the development of PERC technology, which was successfully introduced back in 2012, as a platform for further innovations. PERC can be combined with other performance-enhancing processes, e.g. using five instead of previously three busbars (soldering contacts on the cell). To further improve module performance, we implemented measures along the entire production chain, with the result that at the end of 2016 we set a new SolarWorld record of 315.3 Wp for a monocrystalline 60-cell module.

BIFACIAL TECHNOLOGY PROVEN IN PRACTICE. In 2015, as further development of PERC, we launched a bifacial module under the name Bisun. In the 2016 reporting period, our research and development department intensively pursued this technology and made further optimizations, e.g. increasing the performance of bifacial cells. Bifacial products can produce electricity from both sides by using both the incident direct sunlight on the front side as well as the reflected, indirect light on the rear side. A bifacial module can thus provide considerably higher yield than a conventional module with the same nominal power. In the 2016 reporting period, the first solar power systems using Bisun modules confirmed the anticipated effect.

Using our expertise in frame technology, in 2016 we were able to offer our customers a complete bifacial energy solution. In June, at Intersolar Europe in Munich, we presented Sunfix Bisun, a mounting system developed specially for bifacial applications.

STRENGTHEN OUR INTELLECTUAL PROPERTY. It is extremely important for us to develop our own expertise in the group and protect it via intellectual property management. As we create and protect new inventions, we also continuously review our intellectual property portfolio with regard to cost-effectiveness. Where necessary, we abandon old property rights if the cost/benefit ratio is too low. ► *Development of inventions and patents, as of December 31 – p. 039*

CLOSE NETWORKS IN R&D. Once again, in 2016, our research and development was oriented toward dialog and networking with external partners. During the period under review, we collaborated globally with more than 50 scientific institutes, universities and higher education institutions as well as industrial partners. In addition, part of the SolarWorld R&D activities were incorporated into publicly funded programs. Projects under the “F&E für Photovoltaik” (“research and development for photovoltaics”) initiative run by the German Federal Government played a significant role in this area. ► www.solarstromforschung.de/en SolarWorld was involved in projects along the entire value chain.

HEADCOUNT DEVELOPMENT SOLARWORLD INNOVATIONS GMBH AS AT DECEMBER 31

	2012	2013	2014	2015	2016
Employees in research and development*	118	118	116	110	118
Group employees	2,355	2,073	2,730	2,932	3,034
Proportion in %	5.0	5.7	4.2	3.8	3.9

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* Excluding temporary workers and students

DEVELOPMENT OF INVENTIONS AND PATENTS, AS OF DECEMBER 31

	2012	2013	2014	2015	2016
Number of registered inventions	71	59	53	77	55
Number of active patent applications	226	234	345	273	219
Number of granted active patents	113	123	166	219	246
Number of active patent families	173	175	243	253	262

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DEVELOPMENT OF R&D EXPENSES

	2012	2013	2014	2015	2016
Total R&D expenses (in m€)	49.1	26.5	29.0	23.3	26.0
Sponsored portion (in %)	10.7	27.5	25.4	34.3	26.7

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RESEARCH RATIO AND RESEARCH INTENSITY

in %	2012	2013	2014	2015	2016
Research ratio	8.2	5.8	5.1	3.1	3.2
Research intensity	3.7	3.4	3.7	2.6	2.6

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[Research ratio = R&D expenses/revenue x 100]

[Research intensity = R&D expenses/total expenses x 100]

ENVIRONMENTAL COMMITMENT

Our environmental commitment is based on our business model. We want to establish sustainable energy generation worldwide. Our solar power modules can be an important contribution to achieve this goal. We disclose our environmental impact annually and set goals to reduce these impacts. In our SolarWorld vision, we also confirm our sustainable thinking and action. Strong competition and high cost pressure cannot prevent us from the goal of acting sustainably, which sets us apart from the competition. As a manufacturing company, the focus of our attention is on four environmental topics: energy, emissions, water and waste.

We have set ourselves specific targets for these areas which we wish to achieve by 2020 through optimized processes and the replacement of environmentally hazardous substances. Since we are assuming further growth, we do not set ourselves an absolute goal, but rather relate it to the ratio of the production unit Watt Peak (Wp). We measure how much energy, emissions, water and waste we use and save per unit produced. Furthermore, we set an emissions target for new cars in our vehicle fleet.

If we succeed in achieving the specified targets before 2020, we shall set ourselves even more ambitious goals, so as to provide ourselves with additional motivation to achieve further savings.

ENVIRONMENTAL GOALS 2020

	Unit	Base year 2012	Goals 2020 / percentage change	Actual 2016 / percentage change vs. 2012
Energy and climate protection				
Groupwide energy consumption	kWh/Wp	0.63	0.47 -25 %	0.44 -17 %
Cumulated energy demand (life cycle) ¹	MJ _{eq} /Wp	9,93	7.45 -25 %	7.14 -28 %
Groupwide CO ₂ emissions	kgCO _{2eq} /Wp	0.45	0.29 -35 %	0.31 -31 %
Global warming potential (life cycle)	kgCO _{2eq} /Wp	1.33	0.98 -25 %	0.71 -46 %
Average CO ₂ emissions from passenger cars in the SolarWorld vehicle fleet (new passenger cars) ²	gCO _{2eq} /km	152 (all cars)	95 -38 %	127 -16 %
Water				
Specific water consumption	m ³ /MWp	2,253	1,802 -20 %	1,813 -20 %
Specific volume of waste water	m ³ /MWp	1,738	1,564 -10 %	1,646 -5 %
Waste				
Specific volume of waste	t/MWp	26.9	24.2 -10 %	28.0 +4 %

¹ Since 2015, the calculations have been carried out using further-developed methods, databases and conversion factors. To ensure that the results remain comparable, these figures have been adjusted retrospectively. ² The emissions data which takes account of the corrected levels following the Volkswagen emissions scandal is not currently available. We therefore use the original data for our calculations.

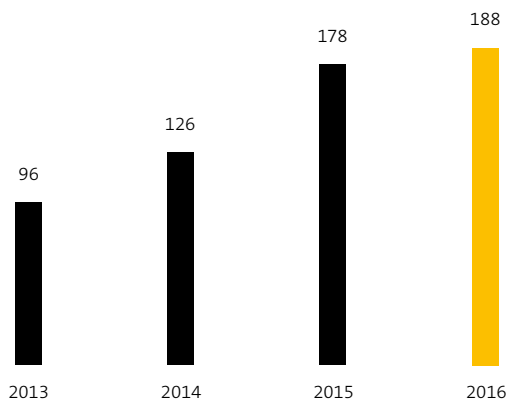
Solar power generation helps reduce harmful greenhouse gas emissions and preserve fossil resources when it replaces these sources in the energy mix. Although energy is consumed to manufacture solar modules, our products generate far more energy over their life cycle than it takes to make them. Likewise, far more greenhouse gas emissions are avoided than are created in the entire manufacturing process.

CO₂-EMISSIONS. Since the Carbon Disclosure Project (CDP) Germany was founded in 2005, we have been involved in monitoring our greenhouse gas emissions. In November 2016, the CDP ranking demonstrated that SolarWorld was able to prove its good climate protection performance and outstanding transparency on CO₂ emissions. On a scale from A to F we reached a B.

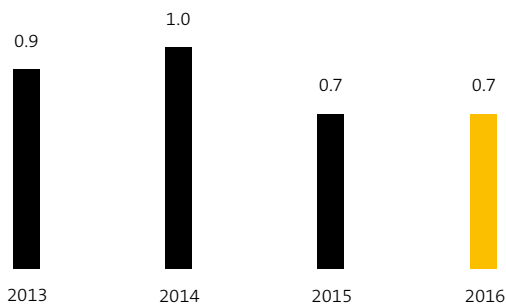
Due to the significant rise in production and shipments, our groupwide greenhouse gas emissions increased in 2016 to around 188 (2015: 178) thousand t CO_{2eq}.

Considering the whole life cycle of our products, however, the greenhouse gas emissions per production unit have remained stable. This so-called global warming potential (GWP) specifies the amount of greenhouse gas emissions per production unit (kg CO_{2eq}/Wp). In the life cycle analysis, we take into account emissions from the entire production process of our solar modules, including preliminary stages and input factors. In 2016, our GWP stood at 0.71 (2015: 0.73) kgCO_{2eq}/Wp. No emissions occur during the operation of solar modules.

PAYBACK TIMES. The energy payback time is the amount of time it takes the solar power plant to produce as much energy as was used to manufacture it. Similarly, the CO₂ payback time refers to the time it takes to compensate for the greenhouse gases that were emitted during manufacturing. Our calculations follow the cradle-to-gate approach. SolarWorld's technological progress can be determined from the energy and CO₂ payback times.

GROUPWISE CO₂-EMISSIONS IN THOUSAND tCO_{2eq}

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GLOBAL WARMING POTENTIAL kg CO_{2eq}/Wp

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While it takes about eight months to compensate for the energy consumption of the entire production process of a system in Bonn, Germany, (power yield: 940 kWh/kWp) it only takes about four months in San Francisco, U.S. (power yield: 1,670 kWh/kWp).

Both in San Francisco and in Bonn, CO₂ emissions that are produced during the manufacturing of a SolarWorld module are compensated for after about a year and a half. The Californian energy mix includes less CO₂-intensive sources of energy than the German energy mix. That is why it takes nearly as long in San Francisco as in Bonn to compensate for emissions with a solar power system despite a significantly higher solar irradiation.

These calculations come from our life cycle analysis for our solar modules (not including system components) with an average lifespan of 30 years, installed on a roof with a southerly orientation and an optimum inclination.

An overview of many locations around the world and additional information on the calculations is available on our website ► www.solarworld.de/sustainability

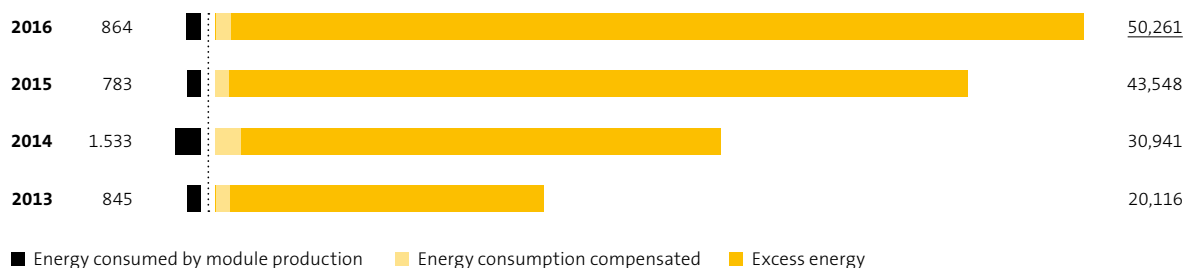
POSITIVE ENERGY AND CO₂ BALANCE. Thanks to the volume of solar power modules sold in 2016, an energy surplus of 50,261 (2015: 43,548) GWh can be achieved during a lifetime of 30 years. Some 26.16 (2015: 22.66) million tCO_{2eq} can be saved as a result. The costs for environmental damage avoided total around € 2,093 (2015: 1,812) million. The CO₂ emissions avoided exceed the CO₂ emissions caused along the entire production chain by a factor of 27 (2015: factor of 27).

Since we have no exact information about how and where our modules are installed, our calculations are based on a standardized installation in Germany (1,275 kWh/m²). The basic data on the electricity mix emissions in Germany are based on the data provided by the German Federal Environmental Agency and have been adjusted retroactively.

When estimating the avoided costs of environmental damage, we use the best-practice approach of € 80 per ton of CO₂ as recommended by the German Federal Environmental Agency. The calculations have been carried out using further-developed methods, databases and conversion factors. To ensure that the results remain comparable with those for 2015, these figures have also been adjusted retrospectively.

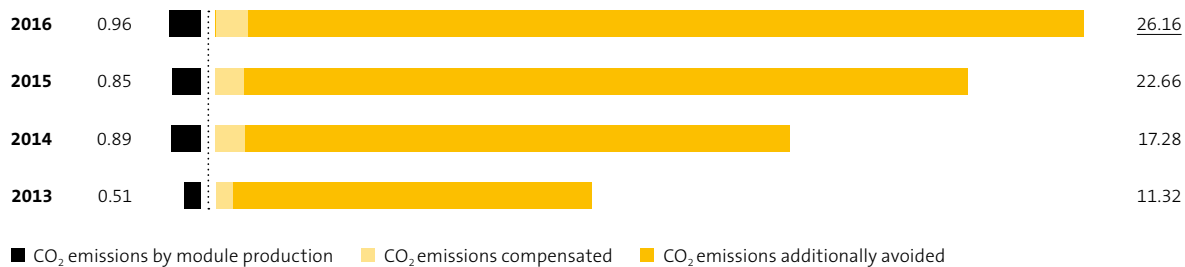
You can find further information under ► [Sustainability in detail 2016 – p. 170](#)

ENERGY BALANCE IN GWh



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CARBON FOOTPRINT IN M tCO_{2eq}



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EMPLOYEES

EMPLOYEE COMMITMENT AS A SUCCESS FACTOR. Employees of the SolarWorld group faced a difficult year in 2016. Particular challenges resulted from abrupt market changes in the third quarter. Our employees quickly and flexibly implemented our measures in response to the changed situation. These included a sales offensive and an expenditure and head-count freeze to reduce overheads.

Once again, our employees' great level of commitment proved decisive. Thus, the key goal of our human resources efforts, as before, is to further strengthen the commitment of our employees and to enable them to implement the group strategy.

RESPONDED TO MARKET CHANGES. The difficult market trends of 2016 were reflected in our HR requirements. In the first half of 2016, our production facilities were running at full capacity, which meant we did not only hire staff but also employed

a large number of temporary workers. Using temporary staff enabled us to adapt quickly to market fluctuations over the course of the year. When we substantially cut production volumes in the fourth quarter, we laid off a large number of temporary workers. Over the year, the total number of temporary workers fell by 649 to 254.

SolarWorld employees were not affected by the necessary reduction of staffing levels in the second half of 2016. From September 2016, however, we started to make use of natural attrition in the company and to fill vacant positions only if there is an acute need. Over the year as a whole, however, the number of employees rose to 3,034 (Dec. 31, 2015: 2,932). Due to the development in the second half, the attrition rate increased in 2016 compared with the previous year, to 10 (2015: 8) percent. ► *Future Human Resources development – p. 080*

HEADCOUNT DEVELOPMENT AS AT DECEMBER 31

	2016	2015	+/- absolute
Germany	2,261	2,157	+104
thereof trainees	55	49	+6
U.S.	737	748	-11
Rest of the world	36	27	+9
Total	3,034	2,932	+102
Temporary workers	254	903	-649
Total incl. temporary workers	3,288	3,835	-547

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GUIDING PRINCIPLES PURSUED IN HR. Especially in a challenging market environment, we firmly believe that our HR activities should be tied to values, and we are continuing to follow our principles. “REAL VALUE” is not only a promise to our customers, but also the internal principle which guides dealings with and among our employees, in teams and between colleagues.

All measures of the HR strategy in the group are based on the guiding principles of the RISE & Shine company mission. The acronym RISE stands for “Responsibility,” “Innovation,” “Sustainability” and “Engagement.” Among other things, we have derived our competency model from this. We use this model as a basis for the development of every individual SolarWorld employee, as well as when selecting new employees.

SUCCESSFULLY SHAPING CHANGE. We continued our so-called Change Program in 2016. Via this program, we support our employees and executives in individual projects in the implementation of change processes within the group. In this way, we wish to ensure that project goals set are achieved in practice, with simultaneous strengthening of employee loyalty. A decisive factor for us in this respect is recognizing possible fears of employees and dealing with these where necessary. Additionally, executives should be enabled to deal appropriately with possible resistance.

STRENGTHENING EMPLOYEES' COMMITMENT. We want to continue to promote our employees' already high level of commitment and our strong corporate culture. To identify global potential for improvement, we conducted a groupwide employee survey for the first time in the second half of 2015. Based on the findings of the survey, in 2016, we formed focus groups at our sites to look at individual topics in more depth and work out specific actions. We started implementing these measures in the third quarter of 2016. One example: The survey revealed that our employees in Freiberg would like to receive more direct information from management. As a result, in addition to our existing internal communication instruments, we are now implementing shop-floor tours

at all production sites. During these tours, executives from top management at the sites visit the production areas and personally tell employees about current topics. Other measures will be continued in 2017.

OPENING UP CAREER OPPORTUNITIES FOR TALENTS. In 2016, SolarWorld again offered special development measures for high potentials within its own group of companies. Under the talent management program, which was initiated in 2012, next-generation staff who have been identified by their managers as showing above-average commitment and performance levels are supported in their professional and personal development. The program is intended to support them in shaping their career path. In this way, we improve our chances of filling technical and management positions with employees that have acquired a great wealth of experience in our company and who have a strong identification with SolarWorld. Support is offered to talented individuals both with a view to a management position with disciplinary responsibility and also for careers as technical specialists or in project management. Overall, 11 management positions are already occupied by former participants in the talent management program.

TRAINING YOUNG TALENTS. Supporting next-generation staff in their professional development is a matter of great importance to us. SolarWorld therefore trains young people in technical, commercial and IT professions at its German sites. In 2016, the trainee ratio was 1.8 (2015: 1.7) percent. During this year, 11 (2015: 16) next-generation staff completed their training with us. We took on 9 (2015: 15) trainees as permanent employees following completion of their training. 18 (2015: 20) persons started their training with us in 2016. If possible, we will offer these people a long-term perspective in our company too, once they complete their training.

COMBINING THE WORLD OF WORK AND LIFE PHASES. SolarWorld wishes to recognize the challenge faced by many employees in balancing the world of work with their needs in different life phases. For example, we want to support our employees in

the family phase, which we now do by offering the option of working from home, where feasible, at all SolarWorld sites. At our German sites, moreover, many employees make use of the possibility of working part-time.

In 2016, we set up another parent-child office where parents can occasionally bring their children to work if necessary and look after them in a suitable environment. In the future, we wish to give greater consideration to other life phases too. For example, balancing work with caring for parents is becoming increasingly relevant to many employees.

GENDER EQUALITY. Offering equal opportunities for men and women within our company is part of our identity. For a number of years, SolarWorld has placed particular emphasis on increasing the percentage of women in management positions. In 2015, we committed ourselves to a specific target figure for the first time: We wish to achieve a share of women in management positions of 25 percent by June 30, 2017. In the year under review, we therefore continued our commitment to appointing suitable female candidates to more management positions in the group. To help us reach our goal, we also used our talent management

program, which of course prepares female as well as male junior employees for managerial roles. At the end of 2016, women's overall share of management positions was 21.7 percent. ► *Sustainability in detail 2016 – Diversity and equal opportunities – p. 231*

INTEGRATING REFUGEES. SolarWorld is a founding member of the nationwide business initiative “Wir zusammen” (“We together”). With the integration project “Integration@SolarWorld,” it wants to assume responsibility for people who have come to Germany as refugees. In 2016, SolarWorld provided internships and apprenticeships for refugees as part of this long-term project. More than 60 SolarWorld employees have signed up as volunteer sponsors to help refugees integrate into working life in Freiberg, Arnstadt and Bonn.

HIGH TRANSPARENCY ABOUT THE GROUP'S SOCIAL ACHIEVEMENTS. SolarWorld publishes extensive information about its social achievements in its sustainability reporting. This information can be found in the report section ► *Sustainability in detail 2016 – p. 170*

ECONOMIC POSITION 2016

TARGET-ACTUAL COMPARISON OF KEY PERFORMANCE INDICATORS

In our 2015 Annual Group Report, we presented our forecast for the development of key performance indicators of the SolarWorld group in fiscal year 2016. This forecast was based on the assumption that average selling prices for solar power products remain stable or go down slightly in the course of 2016. Due to the unexpected price decline by more than 20 percent in the second half of the year, this prerequisite of our forecast was no longer fulfilled.

► *The solar market in 2016 – a year of two parts – p. 032*

Thus, the group was unable to reach its targets for the year 2016.

In July 2016, when first signs of market distortions became apparent, we reduced our EBIT forecast for fiscal year 2016 and initiated first operating measures to mitigate the effects of the crisis. In the course of Q3, the market situation deteriorated further so that SolarWorld had to revise its amended targets again in October.

The following table gives an overview on forecast versus actual results:

Key performance indicators	Results 2015	Forecast 2016	Results 2016
Shipments	1,159 MW	Increase by more than 20 percent versus previous year	+19 % or 1,375 MW
Revenue	€ 763 million	Increase by more than 20 percent versus previous year up to € 1 billion	+5 % or € 803 million
EBITDA	€ 41 million	Significant increase versus previous year	€ -26 million (adjusted ¹ : € -3 million)
EBIT	€ -4 million	positive EBIT in lower double-digit million range	€ -99 million (adjusted ² : € -51 million)

²¹ *One-off effects: write-down on inventories, provisions for the implementation of measure to focus operating activities as well as an opposite one-off resulting from a write-up on property, plant and equipment*

²⁾ One-off effects: impairments on property, plant and equipment in addition to the one-off effects mentioned above

EARNINGS POSITION

DEVELOPMENT OF REVENUE AND PROFIT OR LOSS

In fiscal year 2016, SolarWorld increased groupwide shipments by 18.6 percent to 1,375 (2015: 1,159) MW, compared with the previous year. The United States and the European markets excluding Germany were main drivers for growth. Accordingly, the groupwide foreign quota of shipments rose by 4 percentage points to 86 (2015: 82) percent.

The negative market development, which started at mid-year, gradually improved in Q4 2016. However, the seasonal

demand increase that typically boosts Q4 shipments was not as strong as in the previous years. Moreover, some deliveries of products were postponed to Q1 2017. Thus, groupwide shipments of SolarWorld went down in Q4 2016 by 10.9 percent to 334 (Q4 2015: 375) MW.

Shipments of modules and systems grew 20.5 percent to 1,336 (2015: 1,108) MW in 2016. ► Trade – p.034 In the year under review, we used our wafers and cells mainly in our own production. Thus, external shipments of solar wafers and cells fell to 39 (2015: 51) MW, compared to the previous year.

DEVELOPMENT OF SHIPMENTS

Shipments in MW	2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	2016
Modules and systems	1,108	333	338	331	334	1,336
Wafers and cells	51	7	4	14	14	39
Total	1,159	340	342	345	348	1,375

SHIPMENTS DIVIDED INTO DOMESTIC AND FOREIGN SALES



■ Germany ■ Foreign

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The SolarWorld group managed to raise consolidated revenue in fiscal year 2016 by 5.2 percent or € 39.6 million to € 803.1 (2015: 763.5) million. Foreign quota of revenue increased by 2.5 percentage points to 85.1 (2015: 82.6) percent. In Q4, groupwide revenue shrank by 29.0 percent or € 67.3 million to € 164.4 (Q4 2015: 231.7) million.

In the "Trade" segment, revenue increased by 5.3 percent to € 795.4 (2015: 755.1) million. The relative strength of the U.S. dollar against the Euro had a positive impact on SolarWorld's revenue. External revenues in the "Production Germany" segment played a minor role because intermediate products are mainly sold in the "Trade" segment. Therefore, the remaining external revenue decreased by € 0.7 to € 5.0 (2015: 5.7) million.

In H1 2016, SolarWorld was able to double groupwide earnings before interest, taxes, depreciations and amortizations (EBITDA), compared with the same period in the previous year. When the solar market abruptly deteriorated, demand

decreased significantly and prices fell within just a few weeks by more than 20 percent. The SolarWorld group had to scale down its production to prevent a further increase of inventories and the tying up of liquid funds involved. In the course of this, the company had to lay off the major part of its temporary workers at its production sites. However, these measures did not suffice to compensate the price decline in the short term. Thus, EBITDA decreased significantly in Q4 2016, compared with the same period in the previous year, falling by € 67.6 million to € -41.3 (Q4 2015: 26.3) million.

In fiscal year 2016, groupwide EBITDA also fell compared with previous year and amounted to € -25.9 (2015: 40.8) million. It was affected among other things by write-downs on inventories amounting to € 19.7 million as well as provisions for the implementation of focusing measures totaling € 12.3 million. In counter to this, a write-up on property, plant and equipment of € 8.8 million had a positive impact on EBITDA. Adjusted by these one-off effects, EBITDA amounted to € -2.5 million.

The individual segments of the group, especially the “Trade” segment, underwent a similar development. EBITDA in the “Trade” segment decreased by € 76.9 million to € -67.2 (2015: 9.7) million. In the “Production U.S.” segment, EBITDA sank to € 2.7 (2015: 8.6) million. In the “Production Germany” segment, EBITDA rose by € 9.5 million to € 19.8 (2015: 10.3) million.

In fiscal year 2016, we conducted impairment tests on fixed assets according to IAS 36. These impairment tests resulted in a need of impairments of € 24.7 million on fixed assets and – running counter to this – write-ups of € 8.8 million and expenses from the amendment of accrued investment grants amounting to € 0.1 million. Impairments are mainly attributed to the worsening market situation during the second half of the year and the subsequent decision to focus operating activities.

The factors explained above affected groupwide earnings before interest and taxes (EBIT). In Q4 2016, EBIT fell to € -51.0 (Q4 2015: 14.1) million. Consolidated EBIT for the full fiscal year decreased to € -98.8 (2015: -4.2) million. Adjusted by the one-off effects mentioned above, EBIT amounted to € -50.9 million in the year 2016.

Market distortions in H2 2016 considerably impaired EBIT in all segments. In the “Trade” segment, EBIT decreased to -72.5 (2015: 7.2) million, in the “Production U.S.” segment to € -12.3 (2015: -2.3) million and in the “Production Germany” segment to € -25.7 (2015: -15.2) million.

The groupwide financial result in fiscal year 2016 was € -34.5 (2015: -40.7) million. The financial result improved due to positive one-off effects at Qatar Solar Technologies Q.S.C. resulting from a business combination (badwill) and from the derecognition of liabilities.

The tax result was positively influenced mainly by the integration of SolarWorld Industries Thüringen GmbH into the tax group of SolarWorld AG.

Overall, the group’s net profit after taxes fell to € -91.9 (2015: -33.3) million.

DEVELOPMENT OF MATERIAL INCOME STATEMENT LINE ITEMS

In line with consolidated revenue, the group was able to raise its operating performance by 4.3 percent to € 825.5 (2015: 791.8) million. Changes in inventory and cost of materials were negatively impacted by write-downs on inventories amounting to € 19.7 million during the year 2016. These write-downs can be attributed to decline in market prices, among other factors. Costs of material increased in 2016 by € 57.5 million to € 576.6 (2015: 519.1) million, due to the production volume increase. The latter, combined with a lower utilization of production in Q4 2016, led to an increase of the material cost ratio to 69.9 (2015: 65.6) percent.

Personnel expenses rose in 2016 versus the previous year, too. They went up by € 13.9 million to € 171.9 (2015: 158.0) million. Main reasons were headcount growth due to the production expansion in H1 and negotiated collective pay adjustments and special payments. Despite the rise in operating performance, the personnel expense ratio therefore slightly increased to 20.8 (2015: 20.0) percent.

Depreciation and amortization increased by 62.4 percent or € 28.1 million to € 73.1 (2015: 45.0) million, compared with the previous year. This can largely be attributed to non-scheduled depreciations from impairment tests amounting to € 24.7 million.

In comparison with the previous year, other operating income decreased by € 39.1 million to € 63.4 (2015: 102.6) million. The main reason was a reduction by € 21.8 million of raw material sales, which don't belong to ordinary business activities. Corresponding expenses also fell by € 21.0 million, reducing other operating expenses. In addition, exchange rate gains in the year under review were € 8.3 million lower than in the previous year, causing a further decrease in other operating income.

In total, other operating expenses decreased by € 10.2 million in 2016 to € 166.2 (2015: 176.5) million. The main reason was the reduction of raw material sales mentioned above. In addition, other operating expenses decreased because exchange rate losses went down by € 4.1 million. Running counter to this, the recognition of € 12.3 million provisions for the implementation of measures to focus operating activities led to an increase of other operating expenses. The group reduced its operating expense ratio thanks to the rise of its operating performance by 2.2 percentage points to 20.1 (2015: 22.3) percent.

FIVE-YEAR COMPARISON OF INCOME POSITION

in k€	2012	2013	2014	2015	2016
Revenue	606,394	455,821	573,382	763,465	803,066
Change in inventories of finished goods and works in progress	-64,666	-91,925	36,328	24,512	21,070
Own work capitalized	65	542	1,438	3,852	1,343
Operating performance	541,793	364,438	611,148	791,829	825,479
Cost of materials	-534,568	-272,666	-422,938	-519,143	-576,627
Personnel expenses	-129,378	-112,366	-138,281	-157,989	-171,850
Amortization and depreciation	-417,564	-41,877	-45,440	-44,966	-73,066
Other operating income	166,459	59,287	232,784	102,574	63,427
Other operating expenses	-247,066	-185,480	-174,898	-176,456	-166,207
Operating result	-620,324	-188,664	62,375	-4,151	-98,844
Financial result	-67,489	-76,739	510,274	-40,694	-34,473
Taxes on income	81,522	37,097	-108,485	11,563	41,380
Consolidated net result	-606,291	-228,307	464,164	-33,282	-91,937

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INDICATORS OF INCOME POSITION

in %	2012	2013	2014	2015	2016
Return on sales (Consolidated net result/revenue)	n.a.	n.a.	80.9	n.a.	n.a.
Cost of materials ratio (Cost of materials/operating performance)	98.7	74.8	69.2	65.6	69.9
Personnel expenses ratio (Personnel expenses/operating performance)	23.9	30.8	22.6	20.0	20.8

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FINANCIAL POSITION

PRINCIPLES AND OBJECTIVES

SolarWorld AG manages group financials centrally, which enables us to allocate financial resources efficiently within the group. Controlled directly by the Management Board, the financial management team is responsible for the group liquidity planning and controlling, raising capital and hedging against interest rate, currency and price risks.

We align our financial management with the requirements of our operational business in the short and medium term and with our corporate strategy in the long term. The central task for financial management is to ensure sustained liquidity protection and flexibility, while minimizing capital costs and financial risks.

Our financial liabilities consist mainly of bonds and structured loans. For the most part, these run until 2019 and are secured by group assets. ► [Note 40e Liquidity risks – p. 156](#)

Central cash management invests liquidity positions exclusively in fixed deposits (day-to-day, weekly and monthly deposits) in the public and private banking sector on a daily basis in Euro as well as foreign currencies such as U.S. dollar and British pound. Derivative financial instruments are used only as hedging instruments. ► [Note 40b Principles and objectives of financial risk management – p. 155](#)

An overview of long-term loans and repayment arrangements appears in the notes. ► [Note 40e Liquidity risks – p. 156](#)

FINANCING ANALYSIS

In comparison to December 31, 2015, equity decreased by € 87.1 million to € 121.8 (December 31, 2015: 208.9) million. Equity ratio amounted to 17.7 (December 31, 2015: 24.0) percent at the cut-off date.

In the course of the year, we were able to reduce our financial liabilities by a total of € 15.3 million to € 390.5 (December 31, 2015: 405.8) million. This development results primarily from repayments of € 35.6 million. Running counter to this, financial liabilities rose by € 18.6 million due to an exercised contractual right to pay accrued interests of loans and bonds plus an increased interest margin with the principal on maturity date. A further increase amounting to € 12.9 million resulted from a capital contribution obligation towards Qatar Solar Technologies Q.S.C. previously recognized in other current liabilities, which has been converted into a loan from Qatar Solar S.P.C. and is now recognized in non-current financial liabilities.

The main part of our financial liabilities (82.5 percent) were non-current as at December 31, 2016 (December 31, 2015: 85.9 percent). Loans amounting to € 50.8 million were still recognized as current since the formal requirements for classification as non-current were not yet fulfilled at balance sheet date. However, as of the publication date of this report, requirements have been met so that the € 50.8 million loan can now be classified as non-current. ► [Note 31 Non-current and current financial liabilities – p. 149](#)

Investment grants and subsidies recognized in non-current liabilities decreased to € 19.9 (December 31, 2015: 23.9) million as at the cut-off date. These public funds accrued on the liabilities side of the balance sheet are reversed over the period of utilization of subsidized investments through profit or loss.

Non-current provisions rose in 2016 by € 4.8 million to € 28.3 (December 31, 2015: 23.5) million. This largely results from further additions to provisions for warranties.

Current provisions increased by € 11.5 million to € 18.3 (December 31, 2015: 6.8) million. This can mainly be attributed to provisions made for measures to focus operating activities.

Other current liabilities decreased to € 53.2 (December 31, 2015: 70.5) million in 2016. This is mainly the result of an obligation toward Qatar Solar Technologies Q.S.C., which had been previously recognized under current liabilities and has now been converted into a loan due to Qatar Solar S.P.C. and is accounted for under non-current financial liabilities.

INVESTMENT ANALYSIS

In fiscal year 2016, we invested a total of € 36.7 (2015: 50.7) million in intangible assets and property, plant and equipment. At our sites in the "Production Germany" segment, we invested 23.8 million in the production of wafers, cells and modules. Investment in the "Production U.S." segment for the expansion of cell and module capacities amounted to a total of € 6.4 million. In addition, 5.2 million went to the "Trade" segment and € 1.3 million to the "Other" segment.

LIQUIDITY ANALYSIS

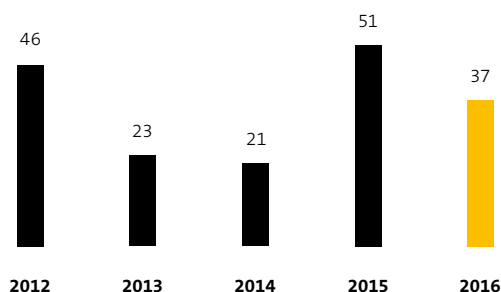
Cash flow from operating results fell by € 31.6 million to € -15.9 (2015: 15.7) million. Due to the significant increase of production volumes, inventories rose in comparison with the previous year. Liabilities from trade payables decreased at the end of the year due to reduced production in Q4. The reduction of trade receivables did not compensate these effects. Therefore, cash flow from operating activities deteriorated considerably to € -40.4 (2015: 52.5) million, compared with the previous year.

Cash flow from investment activities was € -9.6 (2015: -6.5) million. This included cash receipts of € 2.2 (2015: 33.8) million, arising from the negative purchase price agreed for taking over large proportions of the manufacturing facilities of Bosch Solar Energy AG. Furthermore, cash inflow of € 20.1 (2015: 0.0) million was obtained from the sale of fixed assets, while payments for investments in fixed assets totaled € 31.8 (2015: 41.5) million.

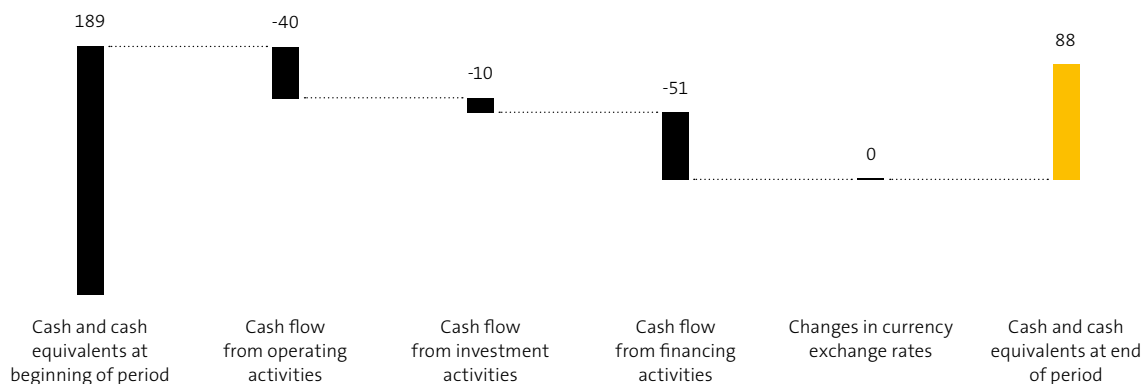
In the year under review, SolarWorld AG repaid loans amounting to € 35.6 (2015: 31.3) million and paid interest totaling € 14.8 (2015: 26.7) million. Thus, cash flow from financing activities was € -50.4 (2015: -57.6) million.

Liquid funds of the group amounted to € 88.1 (December 31, 2015: 188.6) million at the cut-off date December 31, 2016.

DEVELOPMENT OF INVESTMENTS IN M €



CASH FLOW RECONCILIATION IN M €



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FIVE-YEAR COMPARISON OF FINANCIAL POSITION

Capital in k€	Dec. 31, 12	Dec. 31, 13	Dec. 31, 14	Dec. 31, 15	Dec. 31, 16
Equity	-11,409	-243,084	238,668	208,877	121,808
Non-current liabilities	634,669	600,022	508,974	446,157	370,598
Current liabilities	568,970	574,897	167,699	213,674	193,478
Liabilities related to assets held for sale	0	0	0	0	1,059
Total	1,192,230	931,835	915,341	868,708	686,943

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FINANCIAL POSITION INDICATORS

	2012	2013	2014	2015	2016
Return on equity (consolidated net income/equity)	n.a.	n.a.	194.5 %	n.a.	n.a.
ROCE (key date) (EBIT/capital employed*)	n.a.	n.a.	12.7 %	n.a.	n.a.
First degree liquidity (liquid funds + other financial assets/ current liabilities)	0.7	0.4	1.4	1.0	0.6
Second degree liquidity (liquid funds + means available on short notice/current liabilities)	0.8	0.6	2.0	1.5	0.9
Third degree liquidity (current assets/current liabilities)	1.2	0.8	3.0	2.3	1.9

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* Intangible assets and property, plant and equipment less accrued investment grants plus net current assets except for current net liquidity

ASSET POSITION

ASSET STRUCTURE ANALYSIS

Total assets of the SolarWorld group went down by € 181.8 million to € 686.9 (December 31, 2015: 868.7) million.

Non-current assets decreased by € 56.7 million to € 310.5 (December 31, 2015: 367.2) million. Here, property, plant and equipment were reduced to € 277.5 (December 31, 2015: 319.8) million as at December 31, 2016. Apart from scheduled depreciations, this reduction can above all be attributed to depreciations of € 24.7 million resulting from impairment tests and to the sale of a solar park, which accounted for € 9.8 million in the previous year's balance sheet. The reduction of other non-current assets mainly resulted from the reclassification of long-term advance payments for raw materials intended for use within a year to current assets.

In 2016, investments measured at equity decreased slightly by SolarWorld's share of participation in the result of its joint venture Qatar Solar Technologies Q.S.C. At the balance sheet date, this position was € 8.2 (December 31, 2015: 9.0) million.

In current assets, inventories (without short-term advance payments) increased by € 17.8 million to € 173.9 (December 31, 2015: 156.1) million as at the cut-off date December 31, 2016. Simultaneously, trade receivables went down by € 42.4 million to € 55.0 (December 31, 2015: 97.4) million. Taking lower trade payables into account, working capital rose by a total of € 1.9 million to € 177.7 (December 31, 2015: 175.8) million.

Other current financial assets fell by € 3.0 million to € 21.9 (December 31, 2015: 24.9) million. This resulted primarily from the derecognition of receivables in an amount of € 6.4 million, which corresponded to the derecognition of a bank loan. Furthermore, having received payments of € 2.2 million for compensations from the acquisition of the solar activities from Bosch reduced receivables from Bosch and thus led to a reduction of this position. Running counter to this, other current financial assets increased because of a cash deposit of € 5.8 million.

Assets held for sale amounted to € 9.0 (December 31, 2015: 1.4) million at the cut-off date and mainly comprised assets in connection with the exploration and evaluation of lithium reserves, solar systems and production equipment no longer used at the German sites. ► *Note 39 Contingencies and events after balance sheet date – p. 154*

FIVE-YEAR COMPARISON OF THE ASSET POSITION

Assets in k€	Dec. 31, 12	Dec. 31, 13	Dec. 31, 14	Dec. 31, 15	Dec. 31, 16
Non-current assets	501,001	483,003	412,044	367,182	310,504
Current assets	689,917	441,800	494,270	500,157	367,460
Assets held for sale	1,312	7,032	9,027	1,369	8,979
Total assets	1,192,230	931,835	915,341	868,708	686,943

ASSET POSITION INDICATORS IN %

■ Non-current assets ■ Current assets

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ASSET POSITION INDICATORS

	Dec. 31, 12	Dec. 31, 13	Dec. 31, 14	Dec. 31, 15	Dec. 31, 16
Equity ratio (Equity/total assets) in %	n.a.	n.a.	26.1	24.0	17.7
Investment intensity (Non-current assets/total assets) in %	42.0	51.8	45.0	42.3	45.2
First degree equity-to-fixed assets ratio (Equity/non-current assets)	n.a.	n.a.	0.6	0.6	0.4
Second degree equity-to-fixed assets ratio (Equity + non-current liabilities/non-current assets)	1.2	0.7	1.8	1.8	1.6

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OFF-BALANCE SHEET FINANCIAL INSTRUMENTS

Off-balance sheet financial instruments have no impact on the group's asset position.

ASSETS NOT SHOWN IN THE BALANCE SHEET

The group had no assets that were not shown in the balance sheet as at December 31, 2016.

SUPPLEMENTARY REPORT

DISCLOSURE OF EVENTS OF PARTICULAR IMPORTANCE AND THEIR REPERCUSSIONS

For information about events of particular importance after the balance sheet date and their repercussions, please see ► Note 39 Contingencies and events after balance sheet date. – p. 154

OVERALL STATEMENT BY THE MANAGEMENT BOARD ON THE ECONOMIC POSITION AT THE TIME OF THE REPORT

The management of SolarWorld AG rates the economic position of the group as very difficult. This assessment is based on the earnings, financial and asset position resulting from the consolidated financial statements for the fiscal year 2016 as outlined above and ongoing business trends in 2016 at the time of setting up this management report. Although the initiated strategic and operating measures

to focus on production and distribution of monocrystalline high-efficiency modules are supposed to positively impact the earnings, financial and asset position in 2017, it cannot be ruled out that delays or difficulties with regard to their implementation may occur. ► Overall statement by the Management Board on the group's risk position – p. 073



GROUP MANAGEMENT REPORT FORECAST

061 RISK REPORT

- 061 Opportunity and risk-management system
- 063 Internal control and risk-management system
in relation to the group accounting process
- 064 Individual risks
- 073 Overall statement by the Management Board on
the group's risk position

074 OPPORTUNITY REPORT

- 074 Opportunities from the development of general conditions
- 074 Strategic opportunities
- 075 Performance-related opportunities

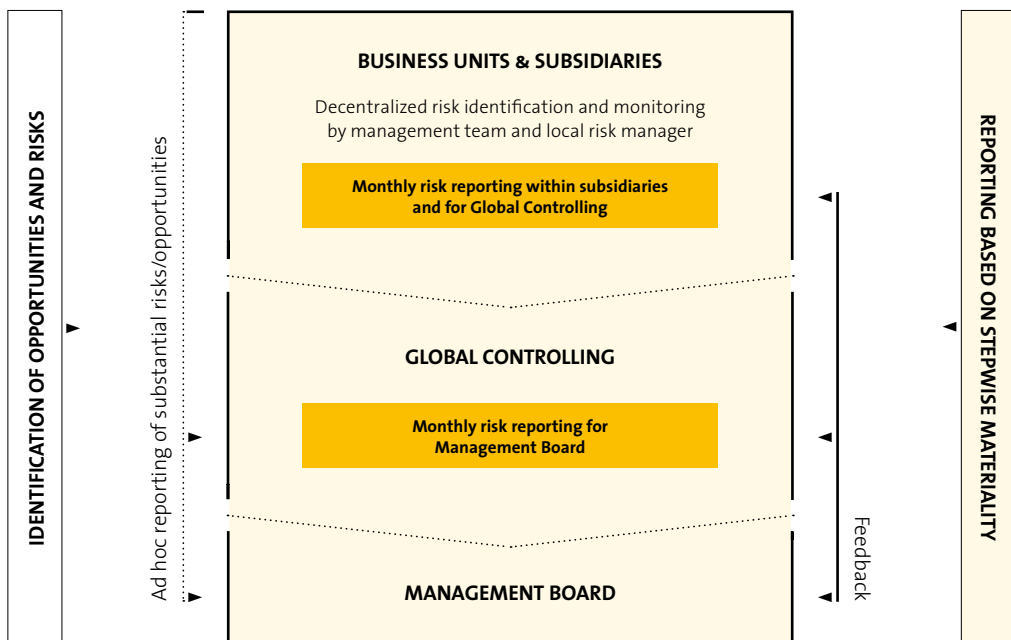
076 FORECAST REPORT

- 076 The future market 2017
- 078 Expected business development 2017
- 080 Expected earnings and financial position
- 081 Overall statement by the Management Board
on future group development

RISK REPORT

OPPORTUNITY AND RISK-MANAGEMENT SYSTEM

INTEGRATION OF THE OPPORTUNITY AND RISK MANAGEMENT SYSTEM INTO THE GROUP



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An opportunity and risk-management system is necessary to promptly identify and analyze risks and as far as possible proactively introduce counter-measures. It is equally important to identify and exploit market opportunities at an early stage. With our opportunity and risk-management system, we aim to safeguard the group's ongoing existence in the long term and enhance corporate value.

Based on the corporate strategy, the Management Board defines the essential features of the risk policy and manages the company accordingly. Global controlling, which is re-

sponsible for global opportunity and risk reporting, together with local risk managers supports the Management Board in assessing the probability of occurrence and effect on earnings of major opportunities and risks. The opportunity and risk-management system has the core task of identifying those risks that, if they were to occur, could result in a significant deviation from planned financial control indicators. It should also enable us to identify opportunities at an early stage that could lead to an improvement in business development. All fully consolidated, operating companies in the SolarWorld group are included in the opportunity and

risk management system. Responsibility for identifying and monitoring risks primarily resides locally with executives in the first and second management levels. They are assisted by local risk managers, who produce monthly opportunity and risk-management reports for global controlling. This reporting is produced taking materiality limits into account in respect to the impacts of opportunities and risks on revenue, the liquidity position and EBITDA. Materiality limits increase with levels of responsibility. They are defined, reviewed annually and adjusted where necessary by the Management Board, taking the acceptable overall risk level into account. In the case of risks and opportunities considered to have a highly material potential impact, reporting takes place immediately and directly to the Management Board.

Global controlling makes local opportunity and risk reports available to the Management Board in a consolidated fashion. In addition, the Management Board is continuously informed about current market trends and receives regular competitor analyses. The Management Board assesses all options available to the company to counteract identified

risks and exploit potential opportunities. The measures to be introduced are defined, implemented and controlled within the relevant departments or companies, with the involvement of local business management and local risk managers. Depending on the materiality limit, the Management Board may also be involved. Insurance policies are taken out to transfer or minimize potential risks where possible and economically justifiable.

In its meetings, the Management Board discusses material opportunities and risks, examines trends and deliberates on measures to be implemented. In the case of risks threatening the existence of the company, the Management Board consults the Supervisory Board.

The internal corporate audit monitors the opportunity and risk-management system. New findings resulting from the audit are taken into account.

INTERNAL CONTROL AND RISK-MANAGEMENT SYSTEM IN RELATION TO THE GROUP ACCOUNTING PROCESS

The aim of the internal control and risk management system with regard to the (group) accounting process is to make sure that accounting is uniform and in line with legal requirements, generally accepted accounting principles, the International Financial Reporting Standards (IFRS), as to be applied in the European Union and internal group guidelines so as to provide recipients of the consolidated financial statements with true and reliable information. To this end, SolarWorld AG has principles, processes and measures in place whose essential characteristics can be described as follows:

Within the SolarWorld group, there is a clear-cut management and enterprise structure in which the various group companies enjoy a large measure of independence and individual responsibility. Based on this structure, however, the functions of finance and accounting, controlling and investor relations essential to the accounting process are controlled throughout the group by corresponding departments.

The functions and responsibilities of finance and accounting, controlling and investor relations are clearly separated and allocated mutual control processes that assure a continuous exchange of information.

Some of the most important basic principles of the internal control system are the separation of functions and adherence to guidelines, along with defined preventive and monitoring control mechanisms such as systematic and manual coordination processes and predefined approval processes.

The financial systems used are protected against unauthorized access by appropriate installations in the IT system. We use standard software wherever possible.

Uniform accounting is guaranteed in particular by accounting guidelines that apply groupwide and by a standardized reporting format. The guidelines and the reporting format are regularly reviewed and updated by members of the group accounting department.

Group companies prepare their financial statements locally and communicate these in the prescribed format to group accounting. The companies themselves are responsible for adherence to group accounting guidelines as well as the proper and timely management of all accounting-related processes and systems. In this context, they are fully supported by group accounting throughout the entire accounting process.

Group accounting monitors adherence to the accounting guidelines as well as to time and process requirements. In addition to systems technology controls, manual controls and analytical audit procedures are in place. Here, the appropriate control environment is taken into consideration as much as the relevance of certain accounting facts regarding the contents of the financial statements.

Group accounting acts as the central point of contact for special technical questions and complex accounting issues. If required, external experts (auditors, qualified accounting specialists etc.) will be consulted.

On the basis of data supplied by the group companies, consolidation takes place centrally in group accounting. In general, as a minimum, the principle of dual control applies at every level.

Independently of group accounting, global controlling carries out a monthly analysis of target-actual and actual-actual deviations based on groupwide reporting, as a result of which an examination of major or implausible changes takes place at an early point in time.

INDIVIDUAL RISKS

LEGEND:

Risk assessment		Time horizon of effects	
↑	Up versus previous year	Short-term	One to three years
↓	Down versus previous year	Medium-term	Three to five years
→	Flat versus previous year	Long-term	More than five years

PRELIMINARY NOTE: For the purposes of risk analysis and the disclosed counter-measures, we do not distinguish between the reportable operating segments “Production Germany” and “Production U.S.” in our in-house production, except in the case of risk factors which need to be assessed

differently by region. Counter-measures may serve to reduce the risk (**reduce**), transfer the risk to third parties (**transfer**), e. g. by taking out insurance, or consciously assume the risk (**assume**).

MACRO-ECONOMIC RISKS ↓

Risks

- 1. Weak economic development:** unstable economic conditions, lower private consumption, decreasing willingness to invest, tighter financing terms and increased inflation risk
- 2. Falling domestic electricity prices:** delays in solar power becoming competitive/reaching grid parity; slowdown in tapping new markets

Probability

- 1. Low:** Overall, the world economy improved in 2016 and is expected to increase its expansion in 2017 according to the Kiel Institute for the World Economy. However, geopolitical conflicts in Eastern Europe and the Middle East could have a negative impact on the overall economic and financial situation. In some European countries, the levels of national debt remain high, which could threaten the stability of the euro as well as the economic trend in the euro zone. Nevertheless, experts anticipate the economy to expand in this region in 2017. The economic development in the emerging countries is also expected to improve slightly this year.
- 2. Low:** Falling costs of primary sources of energy are hardly being passed on to electricity consumers, with the result that declining oil prices have little impact on the domestic electricity price. Energy prices should rise again in 2017, due to growing energy demand, the robust economic development and the agreement of the OPEC countries to keep oil prices high.

Effect (strength, time horizon)

- 1. Medium, short-term to long-term:** A decline in the general willingness to invest might have a medium effect on our group revenue and earnings. Large-scale projects would be affected the most by a tougher financing environment, since in the short term, credit bottlenecks could occur for large-scale investment projects and especially for project financing. A weak economy in emerging countries such as China may reduce the price level of solar products because of exchange rate effects.
- 2. Medium, medium-term:** Domestic electricity prices have a medium impact on our business since end customers may choose between self-produced solar power or power from a utility company, i.e. the electricity generation costs of a solar power system are compared with domestic electricity prices.

Counter-measures

- **Trade:** Our internationalization helps us spread the risk of a decline in consumption among various regional markets. (**reduce**)
- **All segments:** Due to ongoing cost reductions and efficiency enhancements along the entire value chain, the profitability of solar systems is rising. Thus, the leveled cost of electricity of solar energy already undercuts domestic electricity prices in a number of markets and continues to get closer elsewhere. (**assume**)

POLITICAL AND REGULATORY RISKS ↑

Risks

- 1. Changes in laws promoting solar power:** slower market growth due to a reduction in or even abolition of financial incentives in individual countries
- 2. Discontinuation of countervailing duties in the U.S. and in the EU:** Unfair trade practices would no longer be monitored and sanctioned; rapid price decline due to dumping

Probability

- 1. Medium:** Economic incentives for new solar technology installations are regularly reviewed by policymakers and in many cases reduced in important sales markets for the SolarWorld group such as the United States, Germany, France, the United Kingdom and Japan. Thus, it cannot be ruled out that the new U.S. government will reduce or even abolish incentives for solar systems in the short to medium term. In Japan and China, further cuts to the subsidy legislation have been announced for 2017. In France and Germany, incentives have already been adjusted in 2016, so that further changes are not to be expected in the short term.
- 2. Medium:** On February 1, 2015, new anti-dumping and countervailing duties came into force in the United States, which complemented the existing duties on solar products imported from China. These determinations will be effective for the next five years. The level of the U.S. duties is revised every 18 months. The revision of the duties determined in the year 2012 happened at the beginning of 2017. Preliminary findings confirmed the level of the duties in principle. Furthermore, the new U.S. president strongly opposes dumping by China. The review of anti-dumping and anti-subsidy measures in Europe, which was started by the EU Commission at the end of 2015, was completed in March 2017. The measures were extended by 18 months. In March 2017, the European Commission also launched a partial interim review of the measures in force. In the second half of 2017, it is planned to replace the undertaking of Chinese companies by setting a declining minimum price for all cell and module imports from China.

Effect (strength, time horizon)

- 1. High, short-term to medium-term:** A reduction of incentives for new installations of solar power technology may have a negative impact on customer demand. Such declines in demand may lower our revenue in individual regions and have a negative impact on our earnings. As long as grid parity has not been achieved everywhere, SolarWorld will be exposed to this risk.
- 2. High, medium-term to long-term:** Massive price decline due to dumping could significantly diminish our sales volumes or make it impossible for us to sell our products at a cost-covering price level. This would negatively impact our revenue and earnings.

Counter-measures

- **Trade:** We spread this risk across several markets by means of our international presence. *(reduce)*
- **All segments:** Continuous cost reductions and efficiency enhancements enable long-term competitive pricing and thus faster achievement of grid parity as well as increasing independence from incentives. *(assume)*
- **All segments:** We engage in dialog with politicians and society, are active in several industry associations and are committed at a socio-political level to increasing the percentage of photovoltaics in the energy supply. *(assume)*

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RISKS ARISING FROM ALTERNATIVE SOLAR POWER TECHNOLOGIES ↑

Risks

Technological breakthrough or sharp cost reductions in alternative solar power technologies: risk of substitution for monocrystalline technologies

Probability

Medium: Currently, monocrystalline solar power technology represents about 30 percent of the worldwide solar market. SolarWorld expects this share to increase and rates the potential of monocrystalline technology for cost reductions to be higher as for multicrystalline or thin film alternatives. SolarWorld's planned focusing on monocrystalline solar technology involves a medium risk that unexpected improvements and cost reductions in other technologies replace the monocrystalline technology. In this case, the anticipated growth in demand would not occur.

Effect (strength, time horizon)

High, long-term: Successful innovations by competitors could reduce the market share of monocrystalline technologies, further intensify price competition and thus increase pressure on margins. This might adversely affect our revenues and earnings.

Counter-measures

- **Production; Other:** intensive and continuous research and development to increase efficiency and optimize costs; partnerships with universities and research institutes; analysis of technological trends, competitor analyses *(assume)*

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RISKS FROM TOUGHER COMPETITION ↑

Risks

Intensification of competitive pressure: Continuation of consolidation at all stages of the value chain in the solar industry; increased competition from state-sponsored manufacturers; unfair pricing practices; excess capacities; dumping

Probability

High: Due to rising capacities in the solar industry, competitive pressure persists, which could lead anew to a strong decrease of sales prices. In spite of legal measures (anti-dumping and countervailing duties and undertaking concerning minimum prices) in the U.S. and EU against violations of international trade law, the danger of unfair competition still exists as some market players sell below production costs on a long-term basis to drive competitors out of the market. A lot of competitors have a higher investment power thanks to state support. Some have announced that they will significantly expand their capacities mainly for high efficiency technologies such as PERC. Therefore, we presume the probability that competitive pressure will increase to be high.

Effect (strength, time horizon)

High, medium-term to long-term: Loss of market share, failing profitability and increased negative margin trends due to stronger international price competition may weigh down revenue and earnings. If competitive pressure in the solar industry increased anew, the implementation of measures to enhance business profitability would become much more difficult.

Counter-measures

- **Trade:** Differentiation of our products through innovation, quality, service and design; **focusing of the product portfolio;** customer retention programs (*reduce*)
- **Production; trade:** Focusing on monocrystalline solar power technology in both production and distribution, to improve cost structures along the entire value chain and streamline the organization (*assume*)
- **Production:** Concentrate production capacities on one technology to be able to increase production faster and more cost efficient; economies of scale (*assume*) ▶ *Future development in production – p. 079*
- **Other:** Legal steps to guard against dumping and unfair competition by Chinese solar manufacturers in Europe and the U.S. (*assume*)

PROCUREMENT RISKS ↑

Risks

1. **Insufficient silicon supply:** limitation on production volume due to insufficient silicon supply; compulsion to buy on unfavorable terms and/or poor quality
2. **Costs of purchasing other raw materials (silver, copper, aluminum, etc.) on the rise:** higher procurement costs; strong speculative fluctuations – particularly for silver, aluminum and copper; inaccurate hedging
3. **Deterioration of procurement conditions:** Suppliers could reduce their payment terms/credit limits for SolarWorld, or only deliver after advance payment.
4. **Failure to achieve planned improvements in purchasings:** Planned cost-cutting measures in the procurement of direct and indirect materials could fail to be effective.

Probability

1. **Low:** We maintain supplier agreements with a silicon supplier that secure our supply in the medium term. In addition, procurement on the spot market at good condition is possible currently. In the medium term, our joint venture will make an additional contribution to our silicon supply.
2. **Medium:** The Kiel Institute for the World Economy expects that the economic development in emerging countries will pick up in 2017. Together with rising prices for energy, this could lead to a slight increase in raw material prices in 2017.
3. **High:** Since the price pressure in the solar industry is increasing and the operating turnaround has not been achieved yet by SolarWorld, some suppliers could reduce their credit limits and payment terms for the group, or only make deliveries subject to advance payments or guarantees.
4. **Medium:** By focusing on monocrystalline technology, the purchasing volume of certain materials will increase, thus enhancing SolarWorld's room for negotiations and its attractiveness as a partner for some suppliers. However, due to the economic situation of the group and the strong competition in the solar market, suppliers' willingness to negotiate can be limited.

Effect (strength, time horizon)

1. **High, short-term to medium-term:** Silicon is the main raw material used to manufacture crystalline technology. Supply bottlenecks, delayed deliveries or quality defects could halt production, which would have a negative impact on revenue and earnings.
2. **Medium, short-term:** Higher prices for other raw materials might negatively impact earnings and margins.
3. **Medium, short-term:** Liquid funds would be temporarily tied up. Deliveries subject to advance payment could mean that the SolarWorld group has to bear the corresponding supplier's risk of default, defective performance or non-performance; deterioration of Working Capital and liquid funds.
4. **High, short-term to medium-term:** Failure to achieve the planned improvements in purchasing may delay or prevent the implementation of the focusing and the realization of planned cost-cutting targets. This would have a negative effect on the group's earnings position and liquidity.

Counter-measures

- **Production; Trade:** Expansion of our supplier networks and maintenance of our good, long-term supplier relationships; renegotiations with suppliers; flexibilization of purchase terms (*assume, reduce*)
- **Production; Trade:** Use of alternative products reduces dependence on individual suppliers. (*reduce*)
- **Other:** Strategic alliances to achieve synergy effects and thus strengthen the group's negotiating position with suppliers (*assume, transfer*)

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DEFAULT RISKS →

Risks

Insolvency of individual customers: loss of receivables outstanding

Probability

Low: Our customers consist mainly of a large number of wholesalers and installers, who essentially are not affected negatively by the high competitive pressure in the solar industry. They are benefitting from the dynamic growth of the solar market. Therefore, we assess the general risk of loss of receivables outstanding to be low.

Effect (strength, time horizon)

Low, short-term: The loss of receivables from individual customers would only have a small impact on our business as we have a very broad customer base and none of our customers accounts for more than 10 percent of our revenue.

Counter-measures

- **Trade:** ongoing monitoring and analysis of receivables (*reduce*)
- **Trade:** selective conclusion of credit insurance policies (*transfer*)
- **Trade:** cash in advance and down-payment arrangements (*reduce*)
- **Trade:** spread risk across a wide customer base of more than 1,200 customers, i.e. international system integrators, specialized wholesalers and installers (*reduce*)

T 30

CORPORATE STRATEGY RISKS →

Risks

Misjudgments concerning future developments: bad strategic decisions with regard to investments, disinvestments, technology development, location decisions, acquisitions and joint ventures, financing, organizational structure and business model

Probability

Medium: The solar power industry is subject to frequently changing economic, political, regulatory and technical influences, to which the companies have to adapt flexibly and quickly. In the meantime, technical entry barriers are comparatively low so that the solar industry is a narrow market with a lot of competitors, which often act in an unpredictable way. In this environment, it is hard to measure the impacts of long-term strategies and corresponding business models reliably.

Effect (strength, time horizon)

High, short-term to long-term: Due to the fact that the solar industry is capital-intensive, the economic consequences of possible wrong strategic decisions are to be measured as high. Lack of acceptance or profitability of new products might affect revenues and earnings of the company. Loss of market shares, image and capital resulting from this might worsen the economic position of the group.

Counter-measures

- **Other:** make use of external consultants (*reduce*)
- **Production; other:** strategic alliances to split the investment risk (*reduce, transfer*)
- **Other:** research and development activities close to production and cooperation schemes with universities and research centers (*assume*)
- **All segments:** identify market trends by means of market analyses in all business segments and long-term relationships with customers, suppliers and political decision-makers (*reduce, assume*)
- **All segments:** exchange best practices between individual group locations (*assume*)

T 31

SALES AND PRICE RISKS ↑

Risks

Continuing or increasing price pressure and supply surplus: lower demand for our products

Probability

High: Price pressure in the market may intensify as a result of competition and changes in the legal framework in core markets. Less favorable incentives and financing conditions for purchasing solar power systems could lead to drops in demand. Anti-dumping measures could be relaxed or circumvented. Due to the current oversupply in the solar market, we consider that the probability of this risk occurring is high.

Effect (strength, time horizon)

High, short-term to long-term: If less than the agreed volumes of our products are purchased or if prices drop, this could mean that we are unable to sell our products at a cost-covering price. Furthermore, impairments on inventories may be necessary, which would adversely affect earnings. Not only could a steep drop in demand diminish revenue, it could also result in a lower utilization of our production and negatively impact unit costs as well as margins and affect the intrinsic value of the production facilities. It could also increase our storage costs. Any unexpected shift in demand (regionally or to another customer segment) could negatively affect achievable revenues and margins and produce deviations from expected earnings.

Counter-measures

- **Trade:** enhance the value added of the SolarWorld brand; increase customers' loyalty to the company and affirm their decision to buy from SolarWorld; directly address customers' needs with our products (*assume*)
- **Trade:** spread risk via the group's internationalization strategy and across a wide customer base of more than 1,200 customers, i.e. international system integrators, specialized wholesalers and installers (*reduce*)

T 32

HUMAN RESOURCES RISKS ↑

Risks

Shortage of highly-skilled technical and executive staff: difficulties in filling key positions; high attrition rate; loss of expertise

Probability

High: The availability of highly qualified technical and executive staff in the labor market is declining, while competition for talent is growing. The consolidation and the cutthroat competition in the solar industry negatively affect the appeal of solar companies as employers.

Effect (strength, time horizon)

High, short-term: A high attrition can be an obstacle to the implementation of optimization measures. The transfer of know-how between the different locations can become more difficult, if qualified technical and executive staff are not willing to accept SolarWorld's transfer offers. A shortage of skilled technical staff can lead to a potential reduction of our technological edge and slowdown in corporate growth. This may adversely affect revenue and earnings. In 2016, the attrition rate stood at 10 (2015: 8) percent.

Counter-measures

- **All segments:** selective, needs-oriented skills development for our existing staff; development of a succession planning especially for key positions; continuation of a change process to support employees in the implementation of upcoming measures (*reduce, assume*)
- **All segments:** strengthening of attractiveness as an employer and retention of employees by employer branding; support employees in their different phases of life by means of flexible working models; defining deputy roles and powers within the scope of our quality management system (*reduce*)

T 33

IT RISKS →

Risks

1. Disturbances in the operation of IT systems and networks: jeopardized availability of IT services at international sites and negative impact resulting from this on all business processes of SolarWorld

2. Cyberattacks: cyberattacks on employees, IT and business processes of SolarWorld AG; there is a risk of data loss and failure of business processes.

Probability

1. Medium: Certain areas of the infrastructure have a need for renewal. In case of occurring faults, providing replacement would be very complex and can delay the elimination of the fault.

2. High: Due to a rising number of cyberattacks, the probability of faults to occur is permanently increasing.

Effect (strength, time horizon)

1. Medium, short-term: Failure of individual business processes and related productivity losses

2. High, long-term: Industrial espionage and theft of intellectual property could result in the loss of competitive advantages.

Counter-measures

- **All segments:** migrating the IT infrastructure into a cloud environment or, if that is not possible, upgrading the systems; conclusion of maintenance contracts and definition of service level agreements (SLAs); standardization of the IT landscape through lifecycle management; consistent implementation of security areas and security architecture in the network infrastructure; global alignment of the IT organization (*reduce*)
- **All segments:** improving data security by implementing new technical and organizational measures; continuous updates of antivirus and firewall systems; regular backups and restore testing; consequent development of system and security monitoring (*reduce*)

T 34

LIQUIDITY RISKS ↑

Risks

1. **Longer-term negative earnings position:** increased outflow of funds; negative operating cash flow; high inventories; increase of working capital
2. **Termination of loans:** A qualified majority of our creditors, representing more than 66 percent of the nominal amount, decides to terminate the outstanding loan prematurely, since covenants are not met.

Probability

1. **Medium:** Falling revenue due to increasing price and competitive pressure as well as a failure to meet cost targets may have a negative impact on our operating cash flow and diminish our liquid funds. Too high inventories can tie up liquidity, too.
2. **Low:** In the 2016 fiscal year, SolarWorld was not able to meet the covenants. As a result, the creditors of the SFA and SSFA have in principle an extraordinary right to terminate the loans. The required majority of the creditors has declared, however, that it will not exercise this right until the maturity of the loan agreements, provided SolarWorld maintains a certain minimum liquidity within this time period. Based on the current business planning, SolarWorld AG rates the probability that the liquidity will fall below the agreed minimum amount and consequently creditors will be entitled to an extraordinary right to terminate the loans as low.

Effect (strength, time horizon)

1. **High, short-term to medium-term:** Ongoing negative operating cash flow would have further negative impact on the group's liquidity position, limiting our ability to act. If the company is exposed to this situation in the longer term, refinancing with borrowed capital would become even more difficult. This could jeopardize the continued existence of the company as a going concern.
2. **High, short-term to medium-term:** If the agreed minimum liquidity is not maintained, this would lead to an extraordinary right of the creditors to terminate the loans. This, in turn, would require renegotiation of the loan agreements or its terms and conditions. Since the amount of loans affected exceeds the company's liquid funds, an exercise of the creditors' extraordinary termination right would threaten the continued existence of the company as a going concern due to a then insufficient cash position.

Counter-measures

- **All segments:** implementation of cost reduction measures and measures to enhance efficiency; continuous liquidity monitoring and, if required, controlling measures to improve liquidity and results; active working capital management (*reduce, assume*)
- **All segments:** regular exchange with all of our creditors (*reduce, assume*)
- **All segments:** ► *Note 40e Liquidity risks – p. 156*

T 35

OTHER FINANCIAL RISKS →

Risks

Currency, interest rate and price risks

Probability

Medium: Due to the procurement of raw materials, particularly in U.S. dollars and the sale of products in other currency regions, we are exposed to currency risks. As a global player, we are also exposed to interest rate and price risks.

Effect (strength, time horizon)

Medium, short-term: impact on operating and financial result of the group. Thanks to pro-active, regular and careful review of our financial instruments, we assess these risks as medium.

Counter-measures

- **All segments:** selective use of derivative and non-derivative financial instruments (*transfer, reduce*)
- *Note 40 Capital management and financial instruments – p. 154*

T 36

LEGAL RISKS →

Risks

- 1. Litigation between Hemlock and SolarWorld Industries Sachsen:** Our subsidiary SolarWorld Industries Sachsen GmbH is currently the defendant in court proceedings in the U.S. with the silicon supplier Hemlock Semiconductor Corp., which asserts claims resulting from the non-fulfillment of long-term silicon supply contracts.
- 2. Other legal risks:** There is a wide range of tax, competition, patent, anti-trust, labor law, trade mark and environmental regulations within the scope of our international business operations, infringement of which may cause costs.

Probability

- 1. Low:** According to external legal opinions, there are anti-trust objections under European law regarding the effectiveness of the underlying supply contracts, which would mean that the purchasing obligations of SolarWorld Industries Sachsen GmbH are null and void. From SolarWorld's perspective, the supplier is therefore not entitled to claim damages. In a first instance ruling on July 26, 2016, Hemlock's claim for damages was granted. In August 2016, SolarWorld Industries Sachsen GmbH appealed against this judgment of the first instance at the Intermediate Court of Appeals in Cincinnati, United States.

In case of a negative outcome of the appeal proceedings in the United States, a potential final U.S. ruling still has to comply with the essential principles of the German law in order to be recognized and enforced in Germany. Thus, Hemlock would have to initiate a recognition and enforcement process at German courts according to Sec. 722 (1 et seq.) of the German code of civil procedure. In such a process, a German court would have to consider the compliance with fundamental principles of German law in reaching a verdict. According to general legal opinion, European anti-trust law is a fundamental principle of the German legal system. At the latest in such a recognition and enforcement process, the illegality of the underlying agreements due to infringement of EU anti-trust law would become relevant again. Therefore, SolarWorld continues to assess the probability for Hemlock to actually enforce any claims against SolarWorld Industries Sachsen GmbH as low.

- 2. Low:** SolarWorld is not currently aware of any further material risks from litigation, patent infringement or other legal risks that might significantly impact the business situation of the company.

Effect (strength, time horizon)

- 1. High, medium-term to long-term:** If U.S. courts legally ruled that Hemlock Semiconductor Corp. is entitled to claim for damages against our subsidiary SolarWorld Industries Sachsen GmbH and if this decision could be enforced in Germany, this would have a considerable negative impact on the company's liquid funds due to the amount of the asserted claims, possibly even threatening the continued existence of the company as a going concern. ► *Note 42 Contingent liabilities – p. 162*
- 2. Medium, long-term:** Litigation might impact the result of our business operations since it would tie up financial resources, jeopardize the company's reputation and brand and cause losses of tangible and intangible corporate property.

Counter-measures

- All segments: legal advice from several specialized external legal experts (*assume, reduce*)

GUARANTEE AND OTHER LIABILITY RISKS →

Risks

- 1. Guarantee risks:** claims against our product workmanship warranty with a duration of 20 years or our linear performance guarantee of up to 30 years granted for solar modules sold by us
- 2. Other liability risks:** e.g. product safety, occupational safety

Probability

- 1. Low:** Based on careful examination of our process and product quality, we assess the risk of claims being made against our product workmanship warranty and our performance guarantee as low.
- 2. Low:** Thanks to pro-active regular quality assurance measures and quality controls concerning product, protection against hazards and with regard to health and safety at our sites, we assess the probability of these risks as low.

Effect (strength, time horizon)

- 1. Medium, long-term:** potential negative impact on our asset, financial and earnings position in the event of guarantee claims
- 2. Medium, long-term:** production losses; loss of assets; potential claims for damages

Counter-measures

- **All segments:** risk provisioning in the balance sheet for the company's guarantee commitment through the formation of a provision (*assume*)
► *Note 33 Non-current and current provisions – p. 150*
- **All segments:** securing other risks via comprehensive insurance cover based on conventional concepts; regular review of the extent of insurance cover for risks, based on site inspections (*transfer*)
- **All segments:** compliance with legal provisions and voluntary adherence to more far-reaching standards (e.g. ISO 9001 and ISO 14001, codes of conduct) (*assume*)
- **All segments:** analysis of complaints and improvement of product quality (*reduce, assume*)

T 38

ENVIRONMENTAL AND OTHER RISKS →

Risks

- 1. Environmental risks:** higher insurance premiums due to more frequent storms/fires/drought periods caused by progressive climate change
- 2. Emission of hazardous substances:** unplanned pollutant emission, e. g. in case of a serious production accident
- 3. Penalties for breaking environmental laws:** fines and loss of image

Probability

- 1. High:** Climate experts forecast an increase in extreme weather incidents.
- 2. Low:** low probability due to safety systems designed as being redundant; systems cause an emergency shutdown in case of a malfunction
- 3. Low:** Fines or compensation payments are less probable since we ensure compliance with standards by means of our environmental management system.

Effect (strength, time horizon)

- 1. Low, medium-term:** Potential damage due to more frequent storms/fires or costs in the wake of drought periods and floods will not affect us more strongly than other companies.
- 2. Medium, short-term:** If pollutant emissions occur, employees may be in danger. Further possible consequences are damages to the company's image as well as financial losses due to a loss of production and the disposal of the hazardous substance or the removal of environmental damages.
- 3. Medium, short-term to medium-term:** Fines or compensation payments might impact the financial position of our company.

Counter-measures

- **All segments:** Current risks are largely covered by insurance policies. (*transfer*)
- **Production:** substitution of hazardous substances or reduction of their use as well as safety concepts and emergency plans to mitigate the impact (*reduce*)
- **All segments:** further development of the company's environmental management system (*reduce*)

T 39

OVERALL STATEMENT BY THE MANAGEMENT BOARD ON THE GROUP'S RISK POSITION

The overall risk position resulting from the analysis and evaluation of individual risks has increased, compared with the previous year. The Management Board considers the group's risk position to be very high because of the intensified competitive pressure, worldwide overcapacities and resulting increased price pressure and pressure to reduce costs. The individual risks presented can influence each other and worsen the overall risk position of the group. In assessing the risk position, we have not taken any opportunities into account.

The group plans to intensify its focus on the production of monocrystalline high power solar modules. This is expected to lead to cost and efficiency advantages in the production and to streamline overhead due to a simplified product portfolio. These measures are supposed to positively impact the

earnings, financial and asset position in the coming years. If the expected positive effects resulting from the strategic and operating measures initiated failed to occur, this would negatively impact the earnings, financial and asset position of the company and the group and could threaten the continued existence of the company as a going concern. Furthermore, if a potential final U.S. ruling entitled Hemlock Semiconductor Corp. to its claims against SolarWorld Industries Sachsen GmbH and if this ruling could, against expectations, be enforced in Germany, the amount of the asserted claims could also threaten the continued existence of the company as a going concern.

From a current perspective, the Management Board of SolarWorld AG assumes that the conditions for the going concern of the company are met.

OPPORTUNITY REPORT

OPPORTUNITIES FROM THE DEVELOPMENT OF GENERAL CONDITIONS

Global demand for solar power products will continue to increase in 2017. The increasing cost-effectiveness of solar power systems, together with the positive contribution made by photovoltaics to the decarbonization of the energy sector, could generate additional demand stimulus. Thus, there is a possibility that new sales markets for solar power products will be created and that the supply overhang will decrease more quickly than expected.

The developing and emerging economies in particular have either not yet or only to a limited extent exploited the wide-ranging potential of photovoltaics. In water-poor areas, for example, seawater desalination plants are playing an increasing role. Running these on solar power is an especially cost-effective and environmentally sustainable option. Future growth opportunities are arising internationally from the combination of solar power generation with storage systems to enable a continuous, self-sufficient supply.

STRATEGIC OPPORTUNITIES

SolarWorld is positioned as a quality provider in the international solar market and is a leader in PERC and bifacial technology. The group will continue to build on this positioning in 2017, by focusing on monocrystalline high-power products. In addition, the three production sites will each specialize in specific sections of the value chain that mutually complement each other.

The planned focusing will allow the group to make processes leaner and therefore more efficient. Moreover, concentration means that greater economies of scale can be achieved. This should give a decisive boost to the competitiveness of the SolarWorld group.

The group will also step up its involvement in large-scale projects by specifically approaching project planners as a target group. As module prices fall, savings on system components become an increasingly important way to achieve further reductions in electricity production costs per kilowatt-hour. Similarly, because of their ability to generate more power per unit of area, high-power modules offer an additional benefit that is becoming ever more important in large-scale projects. As these changes take place, SolarWorld plans to gain new customer groups by offering the right products.

PERFORMANCE-RELATED OPPORTUNITIES

The low price environment in the solar market affects the entire value chain including raw materials and components. This trend also offers opportunities for SolarWorld, since key materials such as silicon, pastes and glass can be purchased more cheaply. Thus, in 2017, we can benefit from the market trend and reduce our production costs by securing better purchasing terms.

Focusing on monocrystalline technology means that we are revising our product portfolio. We are devoting our energies to the products that have the greatest benefit to customers and with which SolarWorld is able to generate better margins thanks to its experience and expertise. This simplifies our sales structures and streamlines our product family, in turn creating new cost-reduction opportunities.

Furthermore, the continued development of SAP as our central ERP system will help us to more closely integrate our processes in sales, logistics and production. Selective outsourcing of some IT infrastructures also gives us the opportunity to further professionalize infrastructures and processes without a large investment outlay and at the same time utilize our financial and human resources more effectively. This will make a further contribution to process optimization.

FORECAST REPORT

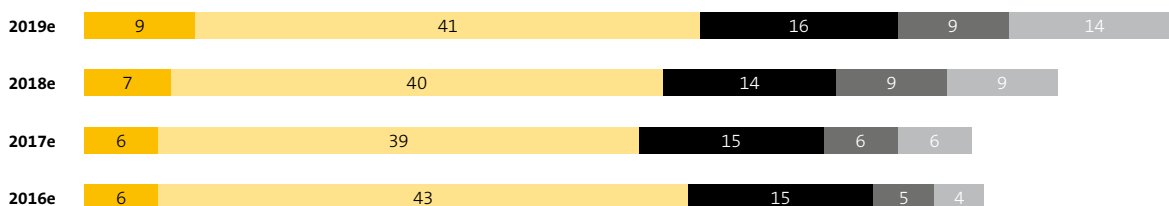
THE FUTURE MARKET 2017

WORLD ECONOMY CONTINUES DYNAMIC GROWTH. The Kiel Institute for the World Economy (IfW) expects the pace of global economic growth to rise further in 2017. It predicts that global output will grow by 3.5 (2016: 3.1) percent. Once again, the industrialized countries are set to make a particular contribution to global growth. Especially the United States looks set to gain momentum and expand by 2.5 (2016: 1.6) percent. Falling real interest rates along with anticipated tax cuts and higher public spending should contribute significantly to this positive development, although it is uncertain how quickly these measures can be implemented.

Economic growth in the euro zone is set to remain constant at 1.7 (2016: 1.7) percent. Unresolved structural problems in parts of the currency area continue to weigh on prospects. Also, it is still unclear what medium-term impact the Brexit decision will have on the European economy. Moreover, parliamentary elections are coming up in four of the largest EU member states and could have a considerable impact on the direction of economic policy in the euro area.

THE FUTURE SOLAR MARKET 2017. Bloomberg predicts that the global solar market will see further growth in 2017. New installations are forecast at between 76 and 81 (2016: 75) GW. China, the United States and Japan will still be the largest solar markets, accounting for more than 50 percent of global newly installed solar power systems.

EXPECTED DEVELOPMENT OF THE SOLAR MARKET BY REGION IN GW



■ Europe
 ■ Asia Pacific
 ■ North America
 ■ Latin America
 ■ Rest of the World

Source: Deutsche Bank, Oct 2016

U.S. SOLAR MARKET TO SHRINK SLIGHTLY. Bloomberg expects the U.S. solar market in 2017 to decrease to 11 (2016: 15) GW. This is due mainly to an anticipated decline in the Utility segment in the United States. However, there is additional growth potential in this segment, especially in view of the steadily increasing economic attractiveness of solar energy. States that have good solar radiation, such as Texas and Florida, could become more important in 2017. Deutsche Bank forecasts that, in contrast to large-scale projects, new installations in the U.S. Commercial segment will grow by around 48 percent in 2017 to 2.0 (2016: 1.4) GW. In the Residential segment, too, falling prices should have a positive impact on demand.

It is too early to tell what the consequences of the U.S. presidential election will be for the solar market. While Donald Trump has spoken out strongly in favor of supporting fossil energy sources, he is also keen to create new jobs and the U.S. solar industry is a major employer in many regions. Moreover, many of the most important solar subsidy schemes in the United States are decided by individual states, not the federal government. Meanwhile, the Investment Tax Credit (ITC), which applies across the country and is granted by the U.S. government, is being extended initially until 2021. As this decision was supported by both U.S. political parties in 2015, no change is expected in the immediate future.

EUROPEAN SOLAR MARKET RECOVERING. In Europe, the solar market will probably see slight growth in 2017. Deutsche Bank expects total newly installed solar capacity to reach around 6.1 (2016: 5.8) GW. In 2017, the German solar market is expected to remain on the previous year's level, with new installations amounting to 1.5 (2016: 1.5) GW. One reason for this stable development is the anticipated completion of large-scale projects in connection with tenders won in 2015 and 2016. Italy and Spain should expand somewhat, whereas the United Kingdom will probably contract further. France is likely to see growth again in 2017, according to Bloomberg, with newly installed capacity of 1.3 (2016: 0.7)

GW. The high profitability of solar power systems may generate new demand stimulus in Europe as well, especially in the area of direct marketing and self-consumption.

FALLING DEMAND IN ASIAN SOLAR MARKETS. Asia, dominated by China, Japan and India, will still be the world's largest solar region in 2017, even though demand for solar products in this region is expected to fall for the first time. Market analysts predict a 9-percent decline in new solar installations in Asia, to 39 (2016: 43) GW. This is primarily due to expected falling demand in China. Experts at Bloomberg are predicting newly installed capacity of between 24 and 29 (2016: 34.5) GW. Analysts expect demand for solar products to fall in Japan as well, where they forecast total newly installed solar capacity of 5.8 (2016: 9.2) GW. In contrast, markets in India, Taiwan and Malaysia are picking up. India will experience the strongest growth in 2017, with a market volume of 8.6 (2016: 4.4) GW.

SOLAR MARKETS REMAIN HIGHLY COMPETITIVE. The potential for new solar installations remains high in 2017 and the overall market outlook is positive. Nevertheless, the solar market will still be an environment of tough competition and low prices, as the supply of solar products along the entire value chain continues to exceed demand. Market analysts anticipate that demand for high-power modules will rise more sharply than demand for conventional multicrystalline solar modules, as system costs with high-power modules are lower for the same output capacity and therefore project returns are higher. Thus, the market share of monocrystalline solar power technology should increase compared with that of multicrystalline technology. The latter will continue to dominate the mass market, however. Because of lower prices at module and component level, solar power systems will become more profitable overall, which could boost global demand. Experts at Bloomberg expect prices to fall again over the course of 2017, though less sharply than in 2016.

EXPECTED BUSINESS DEVELOPMENT 2017

FUTURE DEVELOPMENT IN TRADE

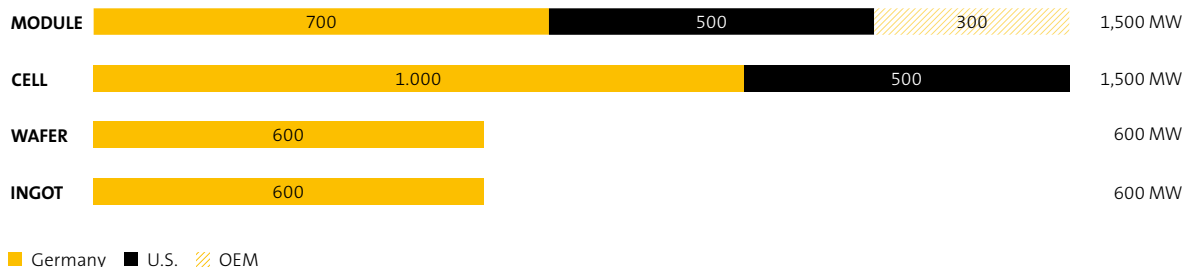
FOCUS ON MARGIN – STABILIZE SHIPMENTS. We expect that global demand for solar power products will increase slightly in 2017 and that the price level will remain low. We are preparing for this market trend by focusing on shipments of products with which we create value for customers and achieve better margins. This means concentrating on monocrystalline high-performance products. We are aiming to increase shipments of these products significantly in 2017, whereas we will reduce and ultimately cease sales of multicrystalline solar modules. Overall, we will thus increase groupwide shipments in 2017 compared with the previous year (2016: 1,375 MW).

SHIFT IN REGIONAL MARKETS. As a result of the anticipated international market trend, it is likely that the American market will account for a smaller share of SolarWorld's shipments in 2017. Shipments in America are set to make up 35 (2016: 50) percent of the total volume. Our business in Europe, MENA, Asia-Pacific and Africa is expected to grow more strongly and thus reach a share of 65 percent.

QUALITY PROVIDER FOR ALL MARKET SEGMENTS. SolarWorld is positioned in the international solar market as a quality provider, under the "SolarWorld – REAL VALUE" brand. We will be underlining this message in 2017 by doubling our product workmanship warranty from 10 to 20 years for all modules. In the future, we want to keep gaining quality-oriented customers in all three segments of the solar market – Residential, Commercial and Utility. In the Utility segment, where large-scale solar projects are realized, we believe that our potential is still not fully exploited. Therefore, we will organize a very specific targeting of customers in the engineering, procurement and construction (EPC) field.

PORTFOLIO FOCUSED ON VALUE. From 2017, SolarWorld will consistently focus on products that give customers particular added value. Mainly these are solar modules based on monocrystalline high-performance cells. Our range comprises modules in standard format with 60 cells and in XL format with 72 cells. In each case, SolarWorld will offer glass-film and glass-glass variants. Streamlining the portfolio increases the clarity and availability for our customers. They will still be able to plan and implement a complete solar energy solution with SolarWorld, for example with battery storage.

PRODUCTION CAPACITIES 2017



G21

FUTURE DEVELOPMENT IN PRODUCTION

FOCUS IN PRODUCTION. In production, SolarWorld will focus on two aspects in 2017: Firstly, there will be a groupwide focus on manufacturing monocrystalline high-performance products. Secondly, our three production sites at Freiberg, Arnstadt and Hillsboro will each specialize in specific sections of the value chain.

In the future, our two German sites will represent the solar value chain from crystallization to the module, in complementary roles. From 2017, our subsidiary SolarWorld Industries Thüringen GmbH will exclusively take charge of crystallization and cell production for manufacturing in Germany. This site, which we acquired from Bosch in 2014, has the longest experience and the highest capacities in monocrystalline technology in this country. Our subsidiary SolarWorld Industries Sachsen GmbH in Freiberg, for its part, will specialize from 2017 in sawing monocrystalline ingots using diamond wire and in the production of solar modules. Equipment from our Freiberg cell production facility will be transferred to Arnstadt over the course of 2017.

SolarWorld Americas Inc. will continue to manufacture monocrystalline PERC cells and modules in Hillsboro, United States. We want to serve the American market with products from Hillsboro and all other markets with German-made products. To supplement our own production operations, we will continue our partnership with external original

equipment manufacturers (OEMs) in 2017.

This focusing in production gives our manufacturing sites the opportunity to grow.

RESOURCE SAVINGS. In order to protect our environment and at the same time generate economic advantages, in particular in the form of cost and material savings, we are continually working to reduce the use of resources throughout the group. For this purpose, we have set clear targets for reducing energy and water use, waste and CO2 emissions, among others, by 2020. ► [Environmental goals 2020 – p. 041](#)

FUTURE RESEARCH AND DEVELOPMENT ACTIVITIES

RETAIN TECHNOLOGICAL LEADERSHIP. Innovation will continue to be strategically important for SolarWorld AG in the future. The goal of the group's own research and development activities is to create added value for customers, reduce costs and thus boost competitiveness. We aim to maintain our technological leadership role in the international solar market in the future. We shall therefore continue to give our attention to the entire solar value chain, from silicon to the complete solar energy solution. As in all areas, we will focus on monocrystalline technology in research and development in 2017 and thus support the implementation of our product strategy.

FUTURE HUMAN RESOURCES DEVELOPMENT

SUPPORT OUR FOCUSING. The main task for our human resources department in 2017+ will be to support our focusing plans. This will lead to a reduction in personnel requirements by about 400 full-time equivalents, which will affect employees in all segments of the SolarWorld group. For the remaining employees, the focusing will involve changes, including moving to a different department or site in some cases. We will discuss these changes in detail and jointly decide on their implementation together with the codetermination bodies, i.e. the group works council and the works councils at the three German sites.

FURTHER STRENGTHENING COMMITMENT. In 2017, we will also continue measures to strengthen our employees' commitment, which are based on the employee survey conducted in 2015. The employee survey shall be repeated in the future to gain an up-to-date picture and find out what impacts the measures derived from the first survey have had. The future employee survey will also be a barometer for how our focusing has affected our employees' commitment.

POSITION SOLARWORLD AS AN ATTRACTIVE EMPLOYER. We wish to continue to retain and attract specialists and executives. One of our major concerns, therefore, is to position ourselves as an attractive employer. Here, we take up SolarWorld's positive image as an employer especially with young professionals. As an example, SolarWorld ranked 51st among the Top 100 employers in the 2016 trendence Young Professional Barometer. This is one of the largest surveys among professionally experienced employees in Germany, with about 10,000 participants from all sectors, including 3,700 engineering and IT specialists.

The solar industry is still an industry of the future, with great opportunities, tough competition and dynamic growth. This challenge, along with the green idea, is often what motivates applicants to choose our company. In 2017, we will use employer branding to raise our profile as an employer.

EXPECTED EARNINGS AND FINANCIAL POSITION

EXPECTED DEVELOPMENT OF REVENUE AND PROFIT OR LOSS

In 2017, the SolarWorld group wants to increase its worldwide shipments moderately, compared with the previous year (2016: 1,375 MW). SolarWorld expects that price pressure for solar products will persist during 2017, but will not be extraordinarily strong. ► *Solar markets remain highly competitive – p. 077* Under this assumption, the Management Board expects that consolidated revenue 2017 will remain at about previous year's level (2016: € 803 million).

Earnings before interest, taxes, depreciation and amortization (EBITDA) will presumably rise moderately in 2017, compared with the previous year (2016: € -26 million). Measures initiated to cut costs will mainly take effect as

of H2 2017 with transition into the year 2018. Earnings before interest and taxes (EBIT) will also improve moderately versus 2016, but remain negative.

The Management Board is continuously looking into assumptions and framework conditions on which our business plan is based and expressly points out that these could change over the course of the year. The Management Board's assessments are based on available information, which it currently considers to be realistic but which is dependent on various factors that are beyond the control and influence of the Management Board of SolarWorld AG and therefore of limited predictability. Known risks whose occurrence could lead to negative deviations from the business plan are presented in our

► *Risk report – p. 061*

EXPECTED DIVIDEND AND DISTRIBUTION

There are no plans to distribute a dividend in 2017. A distribution of a dividend can't be expected for the time being.

SCHEDULED FINANCING MEASURES

No major financing measures are planned for 2017.

PLANNED INVESTMENTS

In fiscal year 2017, group investments will be in the mid double-digit million range. Mostly, investments will focus on upgrading our monocrystalline wafer production in

Freiberg, Germany, with diamond wire saws and on expanding our PERC capacities at our sites in Arnstadt, Germany, and Hillsboro, United States.

EXPECTED LIQUIDITY DEVELOPMENT

Cash flow development in 2017 will be influenced to a large degree by the operating result and by potential fluctuations in our working capital. The agreed streamlining of our product portfolio will aid the reduction of inventories and improve working capital, so that less liquid funds should be tied up. In 2017, we expect liquid funds to remain at about previous year's level. As at December 31, 2016, they amounted to € 88.1 million.

OVERALL STATEMENT BY THE MANAGEMENT BOARD ON FUTURE GROUP DEVELOPMENT

The Management Board of SolarWorld AG expects that the solar market will continue to grow in the future and will be characterized by tough competition and price pressure. Against this background, the group's management is going to reorganize its company between 2017 and 2019 in such a way that it will be able to successfully compete in a challenging market environment. This includes a bundle of measures to focus its operating activities and its product portfolio.

SolarWorld will continue to be an integrated manufacturer along the complete solar value chain, but is going to focus on the most competitive steps at each of its production sites. This will increase efficiency and create space for future growth. In its portfolio, SolarWorld is going to focus

on monocrystalline solar power products with the PERC high-power technology. Customers recognize the added value of this technology, which can be combined with other efficiency-enhancing processes. SolarWorld will also increasingly offer bifacial solar power solutions, which are a further development of the PERC concept.

Successful implementation of these measures will enable SolarWorld to cut costs significantly and to increase its competitiveness. Thus, the group will create the prerequisite for improving the operating result and to return to profitability.



CORPORATE GOVERNANCE

085 CORPORATE GOVERNANCE

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- 094 Remuneration report

100 REPORT BY THE SUPERVISORY BOARD 2016

CORPORATE GOVERNANCE

DECLARATION ON CORPORATE GOVERNANCE

As an internationally active group that is oriented towards sustainability, SolarWorld feels compelled to maintain a responsible and transparent system of corporate governance and monitoring. Good corporate governance fosters the trust of market participants in the company and in the functional capability of the capital market as a whole. We also see this as a basic prerequisite for sustainably increasing the company's value and securing the interests of our investors, business partners, employees and other stakeholders.

In addition to following the legal requirements of the capital market and corporate law, the corporate governance system of SolarWorld AG also takes into account the recommendations of the German Corporate Governance Code (GCGC). We are continuously working on further developing the corporate governance system within the company while also adequately involving all stakeholders. ► *Sustainability in detail 2016 – p. 170*

CORPORATE GOVERNANCE REPORT 2016

DECLARATION OF COMPLIANCE

The Management Board and Supervisory Board have dealt extensively with the issue of how to apply the recommendations of the GCGC version dated May 5, 2015 to the SolarWorld group. In the declaration of compliance submitted each year in accordance with Section 161 German Stock Corporation Act (AktG), they report on compliance with the recommendations of the GCGC and explain any deviations. In November 2016, the Management Board and

Supervisory Board declared that they had complied with the recommendations with only a few exceptions and will continue to comply with them accordingly. Reasons for the exceptions are explained in detail.

The declaration of compliance in accordance with Section 161 AktG can be accessed by the public permanently on the company's website ► www.solarworld.de/declaration-of-compliance. All declarations since 2007 are also available there.

MANAGEMENT AND MONITORING

SolarWorld AG has the dual management and monitoring structure legally specified for German stock corporations with clear division of the staff of the management and supervising organs. The Management Board and Supervisory Board cultivate a trustful and result-oriented collaboration to ensure that efficient corporate management and monitoring is achieved. ► *Report by the Supervisory Board 2016 – p.100*

MANAGEMENT BOARD

The Management Board leads the group on its own responsibility with the aim of increasing the value of the company in the long term. Its key tasks include setting corporate goals, developing a strategy, managing and controlling the group as well as the provision of investment funds. It involves the Supervisory Board in important decisions and informs the latter regularly and extensively of current business developments, the economic position of the group as well as the financial and investment planning.

The Management Board of SolarWorld AG bases its leadership philosophy on the interests of the different stakeholders of SolarWorld AG in line with Section 4.1.1. of the GCGC. In fiscal year 2016, it had the same five members as in the previous year. ► *Boards of SolarWorld AG – p. 091*

When filling leadership positions within the company, the Management Board of SolarWorld focuses on maintaining diversity and particularly on giving women a stronger consideration. SolarWorld's goal is to make the proportion of women in leadership positions equal to the proportion of women in the entire group. In fiscal year 2016, 25.5 (2015: 25.5) percent of the group's employees were women. As at December 31, 2016, the share of women in management positions amounted to 21.7 (2015: 16.7) percent. To further decrease this disparity, the Management Board of SolarWorld AG determined the following targets: The share of women on the two highest management levels below the Management Board of both the group and the SolarWorld AG should be at least 25 percent overall by June 30, 2017. Furthermore, each individual management level should itself achieve a 25 percent share of women by December 31, 2020. ► *Management structure – p.022*

SolarWorld AG particularly used its talent management program in the reporting period to prepare qualified female young talents for management tasks within the group.

THE SUPERVISORY BOARD

The Supervisory Board appoints the Management Board and supervises and advises it in its conduct of business. It is also responsible for auditing and approving the consolidated financial statements and the group management report.

Since June 2, 2015, SolarWorld AG has had a co-determined Supervisory Board on a basis of parity, made up of a total of twelve members in accordance with the German Stock Corporation Act (AktG), the Co-Determination Act (MitBestG) and the Articles of Association: six representatives of the shareholders and six employee representatives. The shareholder representatives on the Supervisory Board are elected by the Annual General Meeting. The elections of shareholder representatives are generally carried out as single elections. The shareholders are not limited to the election suggestions made by the Supervisory Board, but can also nominate their own candidates. The employee representatives on the Supervisory Board are appointed in accordance with the regulations of the Co-Determination Act.

COMMITTEES

To adapt its work to the specific situation of the company and to organize it more efficiently, the Supervisory Board of SolarWorld AG has set up in accordance with the recommendations of the GCGC an audit committee and a nomination committee, as well as a business committee, a human resources committee, a mediation committee and a technology and development committee. An overview of the respective Chairs and members can be found at ► *Committees of the Supervisory Board – p.093*

Under Section 5.3.2 Sentence 2 GCGC, the Chair of the audit committee should have particular knowledge and experience of the application of accounting principles and internal control processes. Since, however, no member of the Supervisory Board alone fully satisfies all prerequisites of this recommendation, SolarWorld AG does not comply with this requirement. Nevertheless, this does not devalue the quality of the work of the audit committee. Rather,

the efficiency of the committee work is ensured through communication and by bundling the expertise of all committee members.

GOALS FOR THE COMPOSITION OF THE MANAGEMENT BOARD AND SUPERVISORY BOARD

COMPETENCE

The Supervisory Board shall be composed in such a way that its members as a group possess the knowledge required for the correct performance of its duties. The Supervisory Board of SolarWorld AG meets this requirement and its individual members participate in training measures required for their work on their own responsibility, in accordance with Section 5.4.5 GCGC.

DIVERSITY

Attention should be paid to diversity when deciding the composition of both the Management Board and the Supervisory Board. In particular, appropriate representation of both genders plays a central role in this respect.

At its meeting on August 12, 2015, the Supervisory Board specified a target of a 20 percent share of women on the Management Board by June 30, 2017, in accordance with Section 111 (5) AktG. This share is already achieved by the current Management Board, which is made up of one woman and four men. Although the Supervisory Board considers an increase in the share of women on the Management Board desirable, there are no plans to expand the Management Board of the company. The Supervisory Board attaches great importance to continuity on the Management Board from the current perspective.

In accordance with the “Law on Equal Participation of Men and Women in Private-Sector and Public-Sector Management Positions,” the Supervisory Board of a listed company and one subject to co-determination must satisfy a fixed share of at least 30 percent for both genders. Accordingly, all Supervisory Boards newly elected as from January 1, 2016, have to be composed of at least 30 percent women and at least 30 percent men.

Since June 2, 2015, SolarWorld AG has had a co-determined Supervisory Board on a basis of parity, which consists of twelve members. The previous shareholder candidates, who at the time had been in office for only one year, had their positions confirmed in the new elections required by law. Only one woman was elected in the employee elections. As a result of the resignation of Mr. Faisal M. Al Suwaidi, the competent court appointed Ms. Daria Revina as second female member of the Supervisory Board as of November 29, 2016. The current composition of the Supervisory Board is diverse and international. Nevertheless, it does not meet the gender-specific diversity requirements of the German Corporate Governance Code, yet. Currently, the share of female members amounts to 17 (2015: 8) percent. The Supervisory Board welcomes the greater diversity that will result following future Supervisory Board elections on the basis of the mandatory statutory regulations applicable since January 1, 2016.

AGE PROVISION

In accordance with Section 5.1.2 of the GCGC, an age limit of 68 years applies for membership in the Management Board of SolarWorld AG. For the Supervisory Board, an age limit of 70 years has been specified (Section 5.4.1 GCGC). No board member has currently reached or will be reaching this limit during the current term of office.

The Supervisory Board in its present form has not specified any concrete targets regarding its composition, the number of independent members and the regular limit of length of membership yet. These targets shall be discussed and set as part of the next efficiency audit, which is expected to be performed in May 2017.

INDEPENDENCE

The Supervisory Board pursues the objective of ensuring that it always includes an adequate number of independent members (Section 5.4.2 GCGC). The employee representatives are considered as independent in this context. Moreover, the majority of the shareholder representatives are independent, too. Therefore, the Supervisory Board of SolarWorld AG assesses that it is composed of an adequate number of independent members.

In accordance with Section 5.4.1 (4 to 6) GCGC, the following must be disclosed concerning two active and one former member of the shareholder representatives:

The company Qatar Solar S.P.C., Doha, which Dr. Khalid Klefeekh Al Hajri is affiliated with, holds a stake of 29 percent in SolarWorld AG. Furthermore, SolarWorld AG holds a stake of 29 percent in Qatar Solar Technologies Q.S.C., which the two active members Dr. Khalid Klefeekh Al Hajri and Ms. Daria Revina are affiliated with.

The Qatar Foundation for Education, Science and Community Development, Doha, which the former Supervisory Board member Mr. Faisal M. Al Suwaidi, who held office until November 28, 2016, is affiliated with, is in control of 100 percent of Qatar Solar S.P.C., which holds a 29 percent stake in SolarWorld AG.

The remaining Supervisory Board members do not have any personal or business relationships that must be disclosed in accordance with the Code.

DIRECTORS' DEALINGS AND SHAREHOLDINGS OF THE MANAGEMENT BOARD AND SUPERVISORY BOARD

Pursuant to Article 19 of the EU Market Abuse Regulation (MAR), members of the Management Board and Supervisory Board as well as related parties are obliged to disclose transactions with shares or debt instruments of SolarWorld AG or related financial instruments, if the value of these transactions reaches or exceeds a total of € 5,000 within a calendar year. No transactions pursuant to Article 19 MAR were reported to SolarWorld AG in 2016.

The Management Board and Supervisory Board cumulatively hold more than one percent of the voting rights in SolarWorld AG. As at December 31, 2016, the Management Board accounted for a total of 20.9 percent of the voting rights through direct and indirect shareholdings. The members of the Supervisory Board held a 0.005 percent share in the company's capital stock as at the cut-off date.

TRANSPARENT COMMUNICATION

The investor relations department of SolarWorld AG is integrated into the organization very closely to the Management Board and reports directly to the Chief Financial Officer.

It is responsible for ensuring compliance with all legal post-admission obligations under the capital market and stock market law. Information that could potentially be relevant for the capital market is examined for its ad hoc relevance both internally and by external legal consultants. All publications pursuant to Article 17 MAR (Public disclosure of inside information) go through the relevant media channels and are made available for distribution across Europe in accordance with the applicable legal requirements.

As recommended by the GCGC, all financial reports are conveyed to the Supervisory Board before publication and discussed in a shared meeting with the Management Board. We publish the Annual Group Report within 90 days following the end of the reporting period; the interim report for the first half and the quarterly statements are published on the company's website accordingly within 45 days. Reporting is provided in two languages: German and English.

Furthermore, SolarWorld AG prepares a corporate financial calendar each year with the most important upcoming dates and makes it available on its website.

In line with the fair disclosure principle, we treat all of our stakeholders equally with regard to information relevant for evaluation. The preferred platform for publication and communication is the internet, since it facilitates the real-time, continual and widespread distribution of information. For instance, we provide the presentations of the quarterly held analysts' conference calls immediately online to ensure that the information given in these documents is also available to retail investors. We maintain German and English language versions of our website so that international stakeholders also have access to the relevant information.

SolarWorld AG communicates intensively and transparently within the context of the quarterly analyst conferences as well as individual discussions, group meetings and conferences with analysts, shareholder representatives and institutional investors. The company also seeks continuous dialog with its retail investors. Both shareholders and noteholders can contact investor relations staff directly through the investor hotline or via email. Additionally, we also offer a bilingual newsletter service that provides timely information on the publication of inside information (ad hoc announcements) and corporate news.

The current shareholder structure of SolarWorld AG can be seen on our website. Any reportable changes will be published there in due time after they are received by the company.

No voting right notifications pursuant to Sections 21, 25 and 25a of the German Securities Trading Act (WpHG) were made in the reporting period.

ANNUAL GENERAL MEETING

Our shareholders can exercise the rights of co-determination and control attached to their shares in the Annual General Meeting (AGM). The AGM is held once a year at the place of the company's registered offices in Bonn and is chaired by the Chairman of the Supervisory Board in accordance with the Articles of Association. At the AGM our shareholders have the opportunity of exercising their right to information, their right to speak as well as their voting right. When voting, one share always corresponds to one vote. The company has not issued any preferred shares devoid of the right to vote or shares that bestow special voting privileges. Our shareholders can cast their vote on site through personal participation in the AGM or in advance by postal vote. SolarWorld AG also appoints voting proxies for each AGM that are bound by the shareholders' instructions. They will accept voting instructions as from the time of convening until shortly before the vote and then exercise these. Finally, our shareholders can also have themselves represented by an authorized third party of their choice and exercise their rights in this way.

All relevant information and documentation concerning the AGM, including the power-of-attorney forms, are available on our website within a sufficient period of time before the meeting and remain available until shortly after it is over. The respective voting results from the AGM are also disclosed there immediately.

COMPLIANCE MANAGEMENT SYSTEM

To promote a culture of integrity throughout the whole company while also preventing corruption and legal violations, SolarWorld AG has constructed an extensive compliance management system and is continually developing it further. The global compliance officer is responsible for this. As the central inter-divisional controlling body, the compliance committee led by the global compliance officer meets each quarter and whenever necessary. Its key tasks are to consult about potential for improvement to the compliance management system and to adopt specific measures for the purpose of further developing the system. It conducts an annual analysis of the compliance risks for the group, which it uses to identify weak points as well as to work out and implement risk reduction measures with the responsible departments. Our compliance regulations are also reviewed annually and updated where necessary.

The groupwide code of conduct, which governs how economic, legal and moral challenges are handled in everyday life at SolarWorld, is an important pillar of the compliance management system. In 2016, the code of conduct was reviewed for the foreign sites in terms of compatibility with the respective national laws, with the aim of carrying out adjustments, if necessary.

During the past fiscal year, SolarWorld continued the compliance training measures. These involve an introductory training course for new employees as well as annual refresher trainings that are carried out as e-learning courses since October 2016. Training is compulsory for employees who are exposed to particular compliance risks.

Furthermore, the compliance management system of SolarWorld also contains the whistleblower system “SolarWorld SpeakUp”. This makes it possible for all employees of the company as well as any of our main suppliers to report potential compliance-relevant incidents – also anonymously, if requested. In 2016, 1 (2015: 6) notice was submitted through the system. This was not a compliance case. The system “SpeakUp” was once more communicated intensively to the employees by publications on the intranet and in the employee magazine as well as by a more prominent placing on the internal compliance page. The objective is to promote the use of SpeakUp, if necessary.

The measures named above are meant to sharpen awareness of potential compliance risks in the entire group and ensure professional handling of concrete incidents.

SolarWorld supports the “Call to Action” of the UN Global Compact for battling corruption and fostering good corporate governance. Further information on the subject of compliance is available on the SolarWorld homepage ► www.solarworld.de/en/group/compliance.

BOARDS OF SOLARWORLD AG

MANAGEMENT BOARD

- **Dr.-Ing. E. h. Frank Asbeck, 57**
Chief Executive Officer (CEO) and founder of the company
Responsible for strategic group development, innovation, technology development and public relations including energy and environmental policy
Period of office: 1999 to January 9, 2019
- **Dipl.-Wirtschaftsing. Frank Henn, 51**
Chief Sales Officer (CSO)
Responsible for international sales including the areas after sales service, technical support and customer service
Period of office: 2004 to January 31, 2019
- **Dipl.-Kfm. tech. Philipp Koecke, 45**
Chief Financial Officer (CFO)
Responsible for the areas of finance, controlling, accounting and investor relations
Period of office: 2003 to April 30, 2019
- **RAin Colette Rückert-Hennen, 56**
Chief Information, Brand & Personnel Officer (CIBPO)
Responsible for the areas information technology, human resources, brand management, marketing and compliance.
Period of office: 2011 to June 30, 2020
- **Dipl.-Ing. Jürgen Stein, 51**
Chief Product Officer (CPO)
Responsible for the areas product management, product development, production, quality management, purchasing and supply chain management
Period of office: 2014 to April 30, 2020

SUPERVISORY BOARD

As at December 31, 2016, the members of the Supervisory Board of SolarWorld AG were:

SHAREHOLDER REPRESENTATIVES

- **Dr. Georg Gansen, 57**

Chairman
residing in Bonn, Germany
Attorney-at-law/Corporate Legal Counsel
at Deutsche Post AG

- **Dr. Khalid Klefeekh Al Hajri, 62**

residing in Doha, Qatar
Chairman and CEO of Qatar Solar Technologies Q.S.C.
Vice Chairman and Managing Director of
Qatar Solar S.P.C.

- **Heiner Eichermüller, 60**

residing in Scottsdale/Arizona, U.S.
Senior Business Consultant

- **Dr. Andreas Pleßke, 55**

residing in Herrsching am Ammersee, Germany
Attorney
- Chairman of the Supervisory Board of
m.a.x. Informationstechnologie AG, Munich, Germany
- Member of the Supervisory Board of smartOne
Consulting AG, Berg/Starnberger See, Germany
- Member of the Supervisory Board of KBA
Mödling GmbH, Mödling, Austria
- Member of the Supervisory Board of König &
Bauer AG, Würzburg, Germany

- **Daria Revina, 30**

residing in Doha, Qatar
Senior Business Support Specialist at Qatar Solar
Technologies Q.S.C. in Doha, Qatar
Member of the Supervisory Board since
November 29, 2016

- **Jürgen Wild, 55**

residing in Vaucresson, France
Managing Director of RAG-Stiftung Beteiligungs-
gesellschaft mbH
- Member of the Supervisory Board of SAG Group GmbH,
Langen, Germany
- Member of the Supervisory Board of R. Stahl AG,
Waldenburg, Germany

From January 1, until November 28, 2016 also

- **Faisal M. Al Suwaidi, 63**

residing in Doha, Qatar
President of Research and Development at Qatar Founda-
tion for Education, Science and Community Development
in Doha, Qatar

had belonged to the Supervisory Board of SolarWorld AG.

EMPLOYEE REPRESENTATIVES

- **Gerald Voigt, 58**
Deputy chairman
residing in Chemnitz, Germany
District manager IG BCE district Dresden/Chemnitz
- Member of the Supervisory Board of
envia Mitteldeutsche Energie AG, Chemnitz, Germany
- **Albrecht Handke, 34**
residing in Dresden, Germany
Press and public relations at and member of the works
council of SolarWorld Industries Sachsen GmbH
- **Wolfgang Lemb, 55**
residing in Frankfurt am Main, Germany
Executive Member of the Management Board
of IG Metall
- **Dr. Ute Mareck, 52**
residing in Freiberg, Germany
Manager of technology and process
at SolarWorld Industries Sachsen GmbH
- **Alexander Richter, 43**
residing in Freiberg, Germany
Member of the works council of
SolarWorld Industries Sachsen GmbH and member
of the group works council of SolarWorld AG
- **Olaf Zirr, 44**
residing in Erfurt, Germany
Team manager QHSE and deputy chairman
of the works council of
SolarWorld Industries Thüringen GmbH

COMMITTEES OF THE SUPERVISORY BOARD

- **Business committee**
Dr. Georg Gansen (Chairman)
Gerald Voigt (Deputy Chairman)
Dr. Khalid Klefeekh Al Hajri
Dr. Andreas Pleßke
Wolfgang Lemb
Alexander Richter
- **Human resources committee**
Dr. Georg Gansen (Chairman)
Gerald Voigt (Deputy Chairman)
Dr. Khalid Klefeekh Al Hajri
Albrecht Handke
- **Mediation committee**
Dr. Georg Gansen (Chairman)
Gerald Voigt (Deputy Chairman)
Dr. Khalid Klefeekh Al Hajri
Wolfgang Lemb
- **Audit committee**
Dr. Georg Gansen
Jürgen Wild
Alexander Richter
- **Technology and development committee**
Heiner Eichermüller (Chairman)
Dr. Ute Mareck (Deputy Chairwoman)
Olaf Zirr
- **Nomination committee**
Dr. Georg Gansen (Chairman)
Dr. Khalid Klefeekh Al Hajri
Heiner Eichermüller

REMUNERATION REPORT

This remuneration report is part of the group management report and complies with the recommendations of the German Corporate Governance Code (GCGC) as well as the requirements of the German Commercial Code (HGB) and the German Accounting Standards (DRS 17). It explains the main points of the remuneration system for the Management Board and Supervisory Board and discloses the amount of remuneration for each individual in accordance with its different components.

REMUNERATION OF THE MANAGEMENT BOARD

The Supervisory Board of SolarWorld AG determines the remuneration system of the Management Board and negotiates with each Management Board member the individual Management Board remuneration amount derived from this system. The structure of the remuneration system is oriented towards the sustainable development of the company and accounts for the company's distinctive characteristics as well as the relevant industry environment. The financial situation of the SolarWorld group is also taken into account.

The remuneration system of SolarWorld AG is composed of non-performance related and performance-related components. In accordance with Section 87 German Stock Corporation Act (AktG), the total remuneration for an individual Management Board member is reasonably proportionate to his or her tasks and the situation of the company.

Management contracts do not contain any severance provision for the case of premature termination of an employment relationship.

NON-PERFORMANCE RELATED REMUNERATION

Non-performance related components comprise fixed annual compensation and fringe benefits. The fixed annual compensation is to be paid in twelve monthly installments at the end of each month. Fringe benefits include use of a company car as well as payment of the costs for accident

and D&O insurance. The agreed deductible for the D&O insurance corresponds, in accordance with Section 93 para. 2 sentence 3 AktG, to at least 10 percent of the respective damage up to at least one and a half times the fixed annual compensation. In addition to that, the Chief Financial Officer (CFO), Chief Sales Officer (CSO), Chief Information Technology, Brand and Personnel Officer (CIBPO) and the Chief Product Officer (CPO) receive grants towards their health insurance. Moreover, the CFO, CSO and CPO are provided with direct insurance in the highest amount permissible according to tax law. Work-related disbursements, expenses and allowances are reimbursed in accordance with Section 670 of the German Civil Code (BGB).

PERFORMANCE-RELATED REMUNERATION

The remuneration system of SolarWorld AG contains a variable component that is linked to the economic development of the company and depends on the achievement of predefined goals. This variable remuneration consists of a short-term and a long-term component.

The amount of the short-term variable remuneration is dependent on the degree to which the individual target values (key performance indicators) set for each Management Board member are reached, exceeded, or fallen short of. Key performance indicators are EBITDA margin, calculated from consolidated EBITDA and revenue, groupwide shipments and the achievement of preset step cost and saving targets, although not all key performance indicators are equally relevant to all Management Board members. The amount of annual performance-related remuneration is calculated based on the key performance indicators relevant to the respective Management Board member and is in each case limited to an individually agreed maximum amount.

As required under Section 4.2.3 GCGC and Section 87 para. 1 sentence 3 AktG, the long-term variable remuneration of the Management Board members consists of a sustainability component, which is dependent on the development of the average EBITDA margin over a period of three years. The calculation is based on consolidated EBITDA and groupwide

revenue of the past fiscal year and the two fiscal years to follow. The amount of long-term variable remuneration is also limited to an individually agreed maximum amount for each Management Board member.

Initially, the CEO, the CFO and the CIBPO only receive an advance of 75 percent of the long-term variable remuneration for the past fiscal year. After three years have passed, the final variable remuneration will be determined according to the average value from the actually achieved EBITDA margin. If this long-term variable remuneration turns out to be lower than the advance that has already been paid out, then no additional payment will be made. The advance is not recallable. If the final variable remuneration calculated according to the average value turns out to be higher than the advance that has already been paid, a supplementary payment will be made.

The CPO and the CSO receive 100 percent of the long-term variable remuneration as interest-free advances. These advances have to be reimbursed promptly after determination of the actual amount of the long-term variable remuneration for the respective calculation period, if the final determination results in a lower amount.

Contrary to the recommendation of the GCGC (Section 4.2.3, para. 2 sentence 8), the Supervisory Board reserves the right to make retrospective alterations to the performance targets or to the comparison parameters. In a dynamically developing market environment, it can, from the perspective of the Supervisory Board, be sensible and expedient for the company to adapt the performance targets or the comparison parameters for variable remuneration components retrospectively to a changed environment in justified cases.

SPECIAL BONUS

To ensure that the system fulfills its role as an incentive, the variable Management Board remuneration will be supplemented by special bonuses granted under certain circumstances. One example would be a special assignment carried out by the Management Board in economically difficult years that should be rewarded to maintain the competitiveness of Management Board remuneration. It is for this reason that the Supervisory Board, as the organ re-

sponsible for Management Board remuneration, may deem it appropriate to award Management Board members with a special bonus in addition to their variable remuneration to offer incentive.

PENSIONS

There is no separate pension entitlement, which is why Management Board members are permitted to convert parts of their remuneration into company pension provisions.

MAXIMUM REMUNERATION

In 2009, the Annual General Meeting decided to place an overall cap on Management Board remuneration per board member amounting to twenty times the average employee remuneration. On May 20, 2010, the AGM also declared approval of the system for compensating members of the Management Board in accordance with Section 120 para. 4 AktG. The Chairman of the Supervisory Board outlined the basic elements of the remuneration system and any changes thereto at the subsequent AGMs (Section 4.2.3 GCGC).

The Management Board remuneration complies with all guidelines of acceptability and the stipulations of the GCGC and the law adopted on June 18, 2009, for Permissibility of Management Board Remuneration (Vorstag).

REMUNERATION OF THE MANAGEMENT BOARD 2016

Altogether, the total remuneration of the Management Board for the fiscal year 2016 amounted to k€ 2,515.5 (2015: k€ 2,718.5). The disclosure of the Management Board remuneration for the fiscal year 2016 was done in accordance with the recommendation of the GCGC in the version dated May 5, 2015 (Section 4.2.5). The uniform model tables make it possible to display separately the contributions and the actual allocation (meaning the payments made) for the year being reported. When considering the allocation, the remuneration values that can be achieved in minimum or maximum must also be provided. Furthermore, additional remuneration for Management Board membership in subsidiaries of SolarWorld AG is listed separately.

MANAGEMENT BOARD REMUNERATION I: BENEFITS GRANTED

in k€	Dr.-Ing. E. h. Frank Asbeck CEO				Frank Henn CSO				Philipp Koecke CFO			
	Start: 1999				Start: 2004				Start: 2003			
	2015	2016	Min.	Max.	2015	2016	Min.	Max.	2015	2016	Min.	Max.
Fixed remuneration	270.0	270.0	270.0	270.0	307.5	350.0	350.0	350.0	308.0	308.0	308.0	308.0
Other remuneration	163.0 ¹	134.1 ²	134.1	134.1	0	0	0	0	67.2 ³	60.0 ⁴	60.0	60.0
Fringe benefits (non-cash compensation)	12.4	15.5	15.5	15.5	11.0	11.8	11.8	11.8	19.8	16.5	16.5	16.5
Fringe benefits (grants)	0	0	0	0	4.2	4.3	4.3	4.3	3.7	3.8	3.8	3.8
Total (fixed components)	445.4	419.6	419.6	419.6	322.7	366.1	366.2	366.2	398.7	388.3	388.3	388.3
One-year variable remuneration (bonus)	443.9	209.9	0	810.0	0	31.7	0	160.0	252.8	119.5	0	307.5
Multi-year variable remuneration (sustainability components)	0	0	0	0	0	0	0	160.0	0	0	0	0
Special Bonus	0	0	0	0	0	0	0	0	0	0	0	0
Total (variable components)	443.9	209.9	0	810.0	0	31.7	0	320.0	252.8	119.5	0	307.5
Service cost	0	0	0	0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total remuneration	889.3	629.5	419.6	1,229.6	324.4	399.6	367.9	687.9	653.2	509.6	390.0	697.5

¹ 2015: Remuneration for Management Board membership in subsidiary Solarparc GmbH (162.71 k€) and inventor remuneration for SolarWorld Innovations GmbH (0.3 k€)

² 2016: Remuneration for Management Board membership in subsidiary Solarparc GmbH (134.1 k€)

³ 2015: Remuneration for Management Board membership in subsidiary Solarparc GmbH (67.17 k€)

⁴ 2016: Remuneration for Management Board membership in subsidiary Solarparc GmbH (60.0 k€)

in k€	Colette Rückert-Hennen CIBPO				Jürgen Stein CPO				Management Board Total			
	Start: 2011				Start: 4/1/2014							
	2015	2016	Min.	Max.	2015	2016	Min.	Max.	2015	2016	Min.	Max.
Fixed remuneration	300.0	300.0	300.0	300.0	300.0	450.0	450.0	450.0	1,485.5	1,678.0	1,678.0	1,678.0
Other remuneration	0	0	0	0	46.0 ¹	60.0 ²	60.0	60.0	276.2	254.1	254.1	254.1
Fringe benefits (non-cash remuneration)	8.0	11.1	11.1	11.1	10.0	13.2	13.2	13.2	61.2	68.1	68.1	68.1
Fringe benefits (grants)	3.8	3.9	3.9	3.9	3.8	3.9	3.9	3.9	15.5	15.9	15.9	15.9
Total (fixed components)	311.8	315.0	315.0	315.0	359.8	527.1	527.1	527.1	1,838.4	2,016.1	2,016.2	2,016.2
One-year variable remuneration (bonus)	90.0	38.9	0	180.0	90.0	96.0	0	110.0	876.6	495.9	0	1,567.5
Multi-year variable remuneration (Sustainability components)	0	0	0	0	0	0	0	110.0	0	0	0	270.0
Special Bonus	0	0	0	0	0	0	0	0	0	0	0	0
Total (variable components)	90.0	38.9	0	180.0	90.0	96.0	0	220.0	876.6	495.9	0	1,837.5
Service cost	0	0	0	0	0	0	0	0	3.5	3.5	3.5	3.5
Total remuneration	401.8	353.9	315.0	495.0	449.8	623.1	527.1	747.1	2,718.5	2,515.5	2,019.7	3,857.2

¹ 2015: Remuneration for Management Board membership in subsidiary SolarWorld Innovations GmbH (46.0 k€).

² 2016: Remuneration for Management Board membership in subsidiary SolarWorld Innovations GmbH (60.0 k€)

MANAGEMENT BOARD REMUNERATION II: ALLOCATION

in k€	Dr.-Ing. E. h. Frank Asbeck CEO		Frank Henn CSO		Philipp Koecke CFO		Colette Rückert-Hennen CIBPO		Jürgen Stein CPO		Management Board Total	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Fixed remuneration	270.0	270.0	307.5	350.0	308.0	308.0	300.0	300.0	300.0	450.0	1,485.5	1,678.0
Other remuneration	163.0	134.1	0	0	67.2	60.0	0	0	46.0	60.0	276.2	254.1
Fringe benefits (non-cash remuneration)	12.4	15.5	11.0	11.8	19.8	16.5	8.0	11.1	10.0	13.2	61.2	68.2
Fringe benefits (grants)	0	0	4.2	4.3	3.7	3.8	3.8	3.9	3.8	3.9	15.5	15.9
Total (fixed components)	445.4	419.6	322.7	366.2	398.7	388.3	311.8	315.0	359.8	527.1	1,838.4	2,016.2
One-year variable remuneration (bonus)	206.6	442.8	0	0	0	252.1	19.1	89.6	49.8	89.6	275.5	874.1
Multi-year variable remuneration (sustainability component)	0	0	0	0	0	0	0	0	0	0	0	0
Special Bonus	0	0	0	0	0	0	0	0	0	0	0	0
Total (variable components)	206.6	442.8	0	0	0	252.1	19.1	89.6	49.8	89.6	275.5	874.1
Service cost	0	0	1.8	1.8	1.8	1.8	0	0	0	0	3.5	3.6
Total remuneration	652.0	862.4	324.4	368.0	400.4	642.2	330.9	404.6	409.6	616.7	2,117.4	2,893.9
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REMUNERATION OF THE SUPERVISORY BOARD

In accordance with the Articles of Association, the Annual General Meeting held on May 30, 2014, approved the system of Supervisory Board remuneration with effect from June 1, 2014.

Every member of the Supervisory Board receives a yearly fixed remuneration of k€ 40.0 in addition to reimbursement for their expenditures in accordance with Section 670 German Civil Code (BGB). In accordance with Section 5.4.6 GCCG, the agreed remuneration system takes into account the chair and deputy chair of the Supervisory Board as well as the chair and members of the committees. The chairman of the Supervisory Board receives three times the fixed compensation, therefore earning k€ 120.0, and the deputy chairman receives double the fixed compensation, so k€ 80.0. Thus, membership or chairmanship in committees is also compensated. Ordinary members receive an additional k€ 5.0 in total for membership in one or more committees, in the case that the person is a committee chairman in at

least one committee they will instead receive double, which would be k€ 10.0. There is no entitlement to variable extra pay or separate attendance pay.

All amounts are given plus VAT, if such tax is applicable. If tenure as a member of the Supervisory Board is taken up or ended during the year, then remuneration will be awarded pro rata temporis.

In addition to Supervisory Board remuneration, SolarWorld AG also takes responsibility for paying premiums for appropriate insurance protection in accordance with the legal liability inherent in duties on the Supervisory Board (D&O insurance). In accordance with Section 3.8 GCCG, the Supervisory Board voluntarily agreed on July 1, 2010, to a deductible of at least 10 percent for the respective damage and up to at least one and a half times the fixed annual remuneration.

REMUNERATION OF THE SUPERVISORY BOARD 2016

The remuneration of the Supervisory Board for the 2016 fiscal year totaled k€ 650.5 (2015: k€ 517.9) and is shown individually in the following table:

SUPERVISORY BOARD REMUNERATION 2016

in k€	Fiscal year 2016			Fiscal year 2015		
	Fixed remuneration	Remuneration for committee work	Total remuneration	Fixed remuneration	Meeting attendance fee	Total remuneration
Members of the Supervisory Board as at Dec. 31, 2016						
Dr. Georg Gansen (chairman)	120.0	0	120.0	120.0	0	120.0
Heiner Eichermüller	40.0	10.0	50.0	56.8	3.9	60.7
Dr. Khalid K. Al Hajri	40.0	5.0	45.0	40.0	1.9	41.9
Dr. Andreas Pleßke	40.0	5.0	45.0	40.0	1.9	41.9
Jürgen Wild	40.0	5.0	45.0	40.0	1.9	41.9
Gerald Voigt (deputy chairman)	80.0	0	80.0	46.7	0	46.7
Wolfgang Lemb	40.0	5.0	45.0	23.3	1.9	25.3
Dr. Ute Mareck	40.0	5.0	45.0	23.3	1.9	25.3
Olaf Zirr	40.0	5.0	45.0	10.2	0.7	10.9
Alexander Richter	40.0	5.0	45.0	10.2	0.7	10.9
Albrecht Handke	40.0	5.0	45.0	10.2	0.7	10.9
Daria Revina (since Nov. 29, 2016)	3.6	0	3.6	–	–	–
Former Supervisory Board members						
Faisal Al Suwaidi (until Nov. 28, 2016)	36.4	0	36.4	40.0	0	40.0
Peter Finger	–	–	–	13.2	0.7	13.8
Joachim Götz	–	–	–	13.2	0.7	13.8
Anke Martin-Heede	–	–	–	13.2	0.7	13.8
Total compensation	600.0	50.0	650.0	500.2	17.7	517.9



REPORT BY THE SUPERVISORY BOARD 2016

Dr. Georg Gansen
Chairman of the Supervisory Board

DEAR SHAREHOLDERS,

The 2016 fiscal year was a year of two halves for SolarWorld AG: In the first half of the year, the company posted a good performance and even achieved a positive operating result in the second quarter. However, the company did not continue this trend in the second half of the year. From mid-year, the international market for solar power products was hit unexpectedly by a sharp drop in prices, triggered by excess capacity in the Chinese domestic market. The resulting market distortions had a negative impact on the development of shipments, revenue, earnings and liquidity of the SolarWorld group. Although the company increased its shipments significantly and its consolidated revenue moderately, it did not achieve its forecast targets.

To adjust to the difficult market conditions and maintain competitiveness, the Management Board of SolarWorld AG implemented short-term operational measures intended to cut costs and generate liquidity. In addition, to complement these steps, a comprehensive strategic focusing plan for various core areas of the group was devised, which will be implemented from 2017 onward.

The Supervisory Board would like to thank the SolarWorld staff and management for their extraordinary effort and loyalty to the company.

SUPERVISORY ACTIVITIES OF THE SUPERVISORY BOARD

The Supervisory Board again accompanied the Management Board in an advisory capacity during the past fiscal year and supervised its activities on the basis of written and verbal management reports. In addition, the chairman of the Supervisory Board maintained regular contact with the Management Board. The Management Board regularly informed the Supervisory Board about the following subjects: business policy; all issues relevant to the company's planning, including the financial, investment and HR planning; course of business; ongoing revenue, earnings and liquidity development; economic situation of the company and group, including risk situation and risk management; compliance within the group; strategic realignment of the group within the framework of the focusing process developed and implemented by the Management Board; as well as important decisions and transactions relating

to the company and group. Reporting was made as and when appropriate, i.e. when specifically requested by the Supervisory Board, as well as regularly according to the rules of procedure issued by the Supervisory Board for the Management Board. The Supervisory Board also consulted external advisors, where necessary. As required by law as well as by the Articles of Association and the rules of procedure for the Management Board, the Supervisory Board was involved in all decisions of fundamental importance to the company.

COMPOSITION OF THE SUPERVISORY BOARD

Since the Annual General Meeting (AGM) on June 2, 2015, the Supervisory Board of SolarWorld AG, pursuant to Section 97 German Stock Corporation Act (AktG) and the provisions of the German Co-determination Act, has comprised a total of twelve members – six shareholder representatives elected by the AGM plus six employee representatives.

The AGM of June 2, 2015, elected the shareholder representatives named below for a period of five years, i.e. until the conclusion of the AGM which decides on the 2019 fiscal year: Heiner Eichermüller, Dr. Khalid Klefeekh Al Hajri, Faisal M. Al Suwaidi, Dr. Andreas Pleßke, Jürgen Wild and Dr. Georg Gansen.

On November 28, 2016, Faisal M. Al Suwaidi left the Supervisory Board at his own request. The competent district court (Amtsgericht) appointed Daria Revina as new member of the Supervisory Board, effective November 29, 2016. Ms. Revina is currently working as Senior Business Support Specialist to the chairman and CEO of Qatar Solar Technologies and has more than twelve years' experience in the fields of energy, project development and government relations.

The six employee representatives Wolfgang Lemb, Gerald Voigt, Dr. Ute Mareck, Olaf Zirr, Albrecht Handke and Alexander Richter have been in office since the results of the elections were officially announced by the central election committee on October 5, 2015.

Dr. Georg Gansen is Chairman of the Supervisory Board and Gerald Voigt is its Deputy Chairman.

SUPERVISORY BOARD MEETINGS

In fulfilling its obligations, the Supervisory Board held a total of eleven meetings during the 2016 reporting period – on January 12, January 19, February 25, March 16, May 2, June 7, August 19, September 12, September 28, November 10 and December 22. The Supervisory Board meetings on January 19, March 16, September 12, September 28 and December 22 were held as telephone conferences. In addition, the Management Board regularly informed the Supervisory Board by telephone of any current issues. They also phoned ad hoc in preparation for or to follow up Supervisory Board meetings. All members of the Supervisory Board participated in all the respective board meetings, with the exception of Dr. Khalid Klefeekh Al Hajri on January 19, February 25, June 7 and September 12, Faisal M. Al Suwaidi on January 12 and 19, February 25, March 16, May 2, June 7 and November 10, Wolfgang Lemb on January 12, June 7 and September 28, Dr. Andreas Pleßke on January 19 and August 19, Alexander Richter on May 2, Gerald Voigt on January 19 and on September 28 and Jürgen Wild on September 28. In 2016, Mr. Al Suwaidi was increasingly involved in his main occupation as President of Research and Development at Qatar Foundation for Education, Science and Community Development and was therefore only able to attend less than half of the Supervisory Board meetings in the reporting period. Ultimately, this led to his decision to resign as a member of the Supervisory Board of SolarWorld AG at the end of November 2016.

ADVISORY AND AUDITING PRIORITIES

The ongoing revenue, earnings and liquidity development as well as short- and medium-term liquidity forecasts for the company were explained to the Supervisory Board at all meetings and then discussed with the Management Board. These topics were dealt with in particular depth during monthly financial reporting conference calls with the Chief Financial Officer. The focus of the advisory and supervisory activities during the reporting period was on improving production processes, coordinating production and sales processes and the HR measures necessitated by the decline in revenue in the second half of the year. Other topics included developments in the individual national sales markets, the legal dispute with the U.S. silicon supplier Hemlock, the company's capital resources and the contractually agreed covenants.

On February 25, 2016, in the presence of the auditors, the Supervisory Board discussed the 2015 annual financial statements, the auditors' report and the auditors' mandate for the 2016 fiscal year.

Furthermore, in 2016 the audit committee of the Supervisory Board considered the recommendation for the appointment of the auditor for the 2017 fiscal year and had a call for tenders issued for this purpose.



MAIN TOPICS IN THE INDIVIDUAL SUPERVISORY BOARD MEETINGS

Topics prioritized in individual Supervisory Board meetings were:

On January 12, the budget for the 2016 fiscal year was presented and discussed.

The telephone conference on January 19 served the further analysis and subsequent approval of the budget for the 2016 fiscal year.

At the meeting on February 25, the draft versions of the consolidated financial statements and the annual financial statements for the 2015 fiscal year as well as the respective management reports were discussed with the auditor. BDO AG Wirtschaftsprüfungsgesellschaft, Bonn, presented the preliminary results of their audit and discussed these with the Supervisory Board. Another topic at this Supervisory Board meeting was the reorganization of the Management Board's responsibilities.

During the telephone conference on March 16, the annual financial statements for the 2015 fiscal year and the corresponding consolidated financial statements were adopted. The Supervisory Board also agreed to recommend that the AGM should mandate BDO AG Wirtschaftsprüfungsgesellschaft, Bonn, with the audit for the 2016 fiscal year.

The meeting on May 2 was designated for a discussion of the results for the first quarter of 2016. In addition, the Management Board informed about the status of the corporate audit and the joint venture Qatar Solar Technologies Q.S.C. The Supervisory Board furthermore decided on the reorganization of responsibilities on the Management Board and approved the sale of a stake in a real estate project.

The Supervisory Board meeting on June 7 was held immediately after the AGM of SolarWorld AG and served to follow up the points that were discussed and decided in that meeting. In addition, the Supervisory Board received report on the internal compliance organization and its findings.

At a further meeting on August 19, the results for the second quarter of 2016 were discussed. The Supervisory Board also gave its attention to the worsened national and international market situation and the resulting risk of breaching applicable covenants. The Supervisory Board obtained information about the personnel development in the group and discussed in which areas external experts could usefully support the Management Board.

The telephone conference on September 12 served to discuss the sale of a solar park from the company's asset portfolio.

The telephone conferences on September 28 and October 27 focused in each case on the development of revenue and profit or loss and the company's liquidity position in the wake of declining prices across the solar market. The Management Board and Supervisory Board discussed the planned counter-measures.

At the meeting on November 10, the Supervisory Board reviewed the results for the third quarter of 2016 along with the short-term measures to improve liquidity and reduce costs in the group. It also discussed the call for tenders that had been issued for the auditors' mandate for the coming fiscal years as well as the audit committee's recommendation regarding the mandate for 2017. The Management Board explained its long-term HR policy plans.

In the telephone conference on December 22, the Supervisory Board reviewed the main points of the "SolarWorld 2019" strategy with regard to the focusing of the business model and necessary HR measures.

COMMITTEES

Following expansion of the Supervisory Board from six to twelve members, a number of new committees were installed: business committee, human resources committee, mediation committee in accordance with Section 27 (3) German Co-determination Act, audit committee, technology and development committee and nomination committee.

The business committee is responsible for preparing Supervisory Board meetings and taking decisions in urgent matters. The human resources committee deals with Management Board matters. The mediation committee fulfills tasks assigned on the basis of Section 27 (3) Co-determination Act. The audit committee focuses on monitoring accounting, controlling, risk management and auditing. It is its responsibility to provide the Supervisory Board with a substantiated recommendation for the appointment of the auditor. As stated in the declaration of compliance with the German Corporate Governance Code (GCGC), no individual member of the Supervisory Board fulfills all the requirements of an expert in the field of accounting and internal control processes. Where appropriate, the Supervisory Board and the audit committee consult external experts to support their members in the execution of their duties. The technology and development committee deals with production technology, research and development and supply chain management. In the 2016 fiscal year, it dealt with i. a. the technology plan, production plans and development of the production sites, particularly Hillsboro, United States. The nomination committee proposes, if and when required, candidates for the Supervisory Board to the AGM.

ADVISORY AND AUDITING ACTIVITIES ON THE 2016 ANNUAL AND CONSOLIDATED FINANCIAL STATEMENTS

The AGM appointed BDO AG Wirtschaftsprüfungsgesellschaft to audit the annual financial statements and consolidated financial statements of SolarWorld AG for the 2016 fiscal year as well as the management report for the fiscal year from January 1 to December 31, 2016. The Supervisory Board subsequently discussed and assigned the audit mandate.

The auditors reviewed the 2016 SolarWorld AG management report and the annual financial statements prepared according to the German Commercial Code (HGB) accounting rules and awarded the unqualified audit opinion. This status was also awarded to the consolidated financial statements and group management report prepared according to IFRS accounting rules. The auditors confirmed that the consolidated financial statements complied with the conditions required for exemption from preparing financial statements under German law. In addition, they also checked the early risk detection system at SolarWorld AG and determined that it fulfills the management responsibilities stipulated in the German Control and Transparency in Business Act (KonTraG).

The financial statements and auditor's reports were presented to the Supervisory Board in good time. They were discussed in detail and checked in the presence of the auditor on February 25, 2017. The auditor reported on the audit procedure and the essential findings of the audit. The Supervisory Board recorded notes from the audit reports and discussed these with the Management Board.

On examination of the annual financial statements as at December 31, 2016, with the management report and the consolidated financial statements with the group management report, the Supervisory Board found no grounds for objection. The Supervisory Board accepted the auditors' opinion and approved the respective documents on March 16, 2017. The annual financial statements of SolarWorld AG are thereby adopted.

DECLARATION OF COMPLIANCE AND CORPORATE GOVERNANCE

Corporate governance plays a major role for the Supervisory Board. It presents its report on the topic together with the Management Board in the Corporate Governance Report, which is part of the Group Management Report.

In November 2016, the Supervisory Board and Management Board issued the annual declaration of compliance with the GCGC and published it on the company's website.

The remuneration of Supervisory Board members is published in the Remuneration Report, which is part of the Group Management Report.

The Supervisory Board identified no conflicts of interest among its members in the 2016 fiscal year.

An examination of efficiency of the Supervisory Board as recommended by the GCGC was last performed during the 2013 fiscal year. No further efficiency review has been conducted since then due to changes in the composition of the Supervisory Board in 2014, 2015 and 2016. An examination of efficiency is on the agenda for the regular Supervisory Board meeting in May 2017.

CHANGES IN THE MANAGEMENT BOARD AND THE SUPERVISORY BOARD

There were no personnel changes in the Management Board in 2016. The appointment of Colette Rückert-Hennen as a member of the Management Board of SolarWorld AG was extended until June 30, 2020. Jürgen Stein's contract as Chief Product Officer was extended until April 30, 2020. The conditions of employment for Management Board members are in line with the tasks at hand and the market and are in a balanced relation to the employment conditions of the other Management Board members.

Effective November 28, 2016, Faisal M. Al Suwaidi left the Supervisory Board at his own request. Effective November 29, 2016, Ms. Daria Revina was appointed by court order as new Supervisory Board member, provisionally until the next AGM of SolarWorld AG; which is expected to be held on July 3, 2017.

Bonn, March 22, 2017



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The Supervisory Board

Dr. Georg Gansen
Chairman

CONSOLIDATED FINANCIAL STATEMENTS

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CONSOLIDATED FINANCIAL STATEMENTS

FOR THE BUSINESS YEAR
JANUARY 1, 2016 TO DECEMBER 31, 2016

CONSOLIDATED INCOME STATEMENT

in k€	Notes	2016	2015
1. Revenue	2.22, 3, 15	803,066	763,465
2. Change in inventories of finished goods and work in progress	2.10, 2.22, 23	21,070	24,512
3. Own work capitalized	4	1,343	3,852
4. Other operating income	2.22, 5	63,427	102,574
5. Cost of materials	6	-576,627	-519,143
6. Personnel expenses	7	-171,850	-157,989
7. Amortization and depreciation	2.8, 8, 16	-73,066	-44,966
8. Other operating expenses	2.22, 9	-166,207	-176,456
9. Operating result		-98,844	-4,151
10. Result from investments measured at equity	2.3.2, 11, 19	-897	-12,877
11. Interest and similar financial income	2.22, 11	66	128
12. Interest payable and similar financial expenses	2.22, 11	-33,940	-28,687
13. Other financial result	2.22, 11	298	742
14. Financial result		-34,473	-40,694
15. Result before taxes on income		-133,317	-44,845
16. Taxes on income	2.23, 12	41,380	11,563
17. Consolidated net result		-91,937	-33,282
Of which attributable to:			
- Shareholders of SolarWorld AG		-91,937	-33,282
18. Earnings per share	13		
a) Weighted average number of shares outstanding (in 1,000)		14,896	14,896
b) Consolidated net result (in €)		-6.17	-2.23

STATEMENT OF CONSOLIDATED COMPREHENSIVE RESULT

in k€ – Note 14	2016	2015
Consolidated net result	-91,937	-33,282
Profit/loss from remeasurement of defined benefit plans		
Profit/loss from remeasurement of defined benefit plans, before tax	-826	867
Deferred taxes on profit/loss from remeasurement of defined benefit plans	247	-260
Profit/loss from remeasurement of defined benefit plans, net of tax	-579	607
Items not to be reclassified to profit or loss	-579	607
Exchange differences from currency translations		
Unrealized currency translation gains	2,242	9,885
Deferred taxes relating to exchange differences on translating foreign operations	3,205	-7,001
Exchange differences from currency translations, net of tax	5,447	2,884
Items that may be reclassified subsequently to profit	5,447	2,884
Other comprehensive net result	4,868	3,491
Of which:		
Other comprehensive result before tax	1,416	10,752
Deferred taxes relating to other comprehensive result	3,452	-7,261
Total comprehensive result	-87,069	-29,791
Of which attributable to:		
- Shareholders of SolarWorld AG	-87,069	-29,791

CONSOLIDATED BALANCE SHEET AS AT DECEMBER 31, 2016

Assets in k€	Notes	Dec 31, 16	Dec 31, 15
A. Non-current assets		310,504	367,182
I. Intangible assets	2.6, 2.8, 16, 17	21,270	23,301
II. Property, plant and equipment	2.7, 2.8, 16, 18	277,458	319,825
III. Investments measured at equity	2.3.2, 19	8,174	8,986
IV. Other financial assets	2.13, 21, 40	3,195	3,062
V. Other non-current assets	2.9, 22	145	9,736
VI. Deferred tax assets	2.23, 12, 21	262	2,272
B. Current assets		367,460	500,157
I. Inventories	2.10, 23	185,693	171,563
II. Trade receivables	2.11, 24	55,032	97,402
III. Current income tax assets	2.23, 12, 25	120	187
IV. Other receivables and assets	2.12, 26	16,685	17,510
V. Other financial assets	2.13, 2.17, 27, 40	21,858	24,853
VI. Liquid funds	2.14, 29, 40, 41	88,072	188,642
C. Assets held for sale	2.15, 29	8,979	1,369
		686,943	868,708

Equity and liabilities in k€	Notes	Dec 31, 16	Dec 31, 15
A. Equity	30	121,808	208,877
1. Subscribed capital		14,896	14,896
2. Capital reserve		158	158
3. Other reserves		19,593	14,725
4. Accumulated results		87,161	179,098
B. Non-current liabilities		370,598	446,157
I. Non-current financial liabilities	2.16, 2.17, 31, 40	321,974	348,627
II. Accrued investment grants	2.18, 32	19,866	23,921
III. Non-current provisions	2.19, 2.20, 33	28,267	23,524
IV. Other non-current liabilities	2.21, 34	19	18
V. Deferred tax liabilities	2.23, 12, 35	472	50,067
C. Current liabilities		193,478	213,674
I. Current financial liabilities	2.16, 2.17, 31, 40	68,501	57,222
II. Trade payables	2.16, 40	51,202	77,771
III. Income tax liabilities	2.23, 12, 36	2,346	1,398
IV. Current provisions	2.20, 33	18,252	6,831
V. Other current liabilities	2.21, 34	53,177	70,452
D. Liabilities related to assets held for sale	2.15, 37	1,059	0
		686,943	868,708

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

in k€ – Notes 2.4, 30	Subscribed capital	Capital reserve	Other reserves		Accumulated results	Total
			Currency translation reserve	IAS 19 reserve		
As at Jan 1, 2015	14,896	158	13,137	-1,903	212,380	238,668
Total comprehensive result	-	-	2,884	607	-33,282	-29,791
As at Dec 31, 2015	14,896	158	16,021	-1,296	179,098	208,877
Total comprehensive result	-	-	5,447	-579	-91,937	-87,069
As at Dec 31, 2016	14,896	158	21,468	-1,875	87,161	121,808

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CONSOLIDATED CASH FLOW STATEMENT

in k€ – Note 41		2016	2015
	Result before tax	-133,317	-44,845
+	Amortization and depreciation	73,066	44,966
+	Financial result (excluding profits and losses from currency translation)	34,776	42,030
-	Profit from disposal of assets	-9,833	-343
-	Reversal of accrued investment grants	-4,076	-4,949
-/+	Other material non-cash income/expenses	23,455	-21,151
=	Cash flow from operating result	-15,929	15,708
+	Changes in prepayments and customer advances	23,485	23,151
-	Increase in inventories	-37,450	-21,507
+/-	Decrease/Increase in trade receivables	33,818	-19,953
-/+	Decrease/Increase in trade payables	-29,182	26,215
-/+	Development in other net assets	-14,593	30,741
=	Cash flow from operating result and changes in net assets	-39,851	54,355
+	Interest received	62	104
-	Taxes on income paid	-599	-1,998
=	Cash flow from operating activities	-40,388	52,461
-	Cash payments for investments in fixed assets	-31,807	-41,540
+	Cash receipt from investment grants	0	1,247
+	Cash receipts from the disposal of fixed assets	20,055	32
+	Cash receipts from negative purchase price	2,200	33,800
=	Cash flow from investing activities	-9,552	-6,461
+	Cash receipts from borrowings	0	300
-	Cash payments from the repayment of loans	-35,614	-31,258
-	Interest paid	-14,773	-26,683
=	Cash flow from financing activities	-50,387	-57,641
-	Net changes in cash and cash equivalents	-100,327	-11,641
+	Consolidation-related change of cash and cash equivalents	0	17,425
-/+	Currency-related change of cash and cash equivalents	-243	5,761
+	Cash and cash equivalents at the beginning of the period	188,642	177,097
=	Cash and cash equivalents at the end of the period	88,072	188,642

CONSOLIDATED NOTES

GENERAL DISCLOSURES AND ACCOUNTING POLICIES

1. GENERAL INFORMATION

SolarWorld AG is a listed corporation domiciled at Martin-Luther-King-Straße 24, Bonn, Germany. SolarWorld AG's Management Board prepared the consolidated statements on March 21, 2017.

SolarWorld group is the largest manufacturer of solar power products outside of Asia. SolarWorld AG and its subsidiaries research, develop, produce and recycle on all levels of the solar value added chain. The focus of operations is on the production and international distribution of high-end solar energy facilities – from rooftop solar systems to components for outdoor solar parks. The products can be used both in the on- and off-grid area.

In accordance with § 315a HGB, SolarWorld AG prepared its consolidated financial statements per December 31, 2016 pursuant to the International Financial Reporting Standards (IFRS) of the International Accounting Standards Board (IASB) as applicable in the European Union ("EU-Endorsement") at balance sheet date as well as to the interpretations of the IFRS Interpretations Committee (IFRS IC). In addition, the commercial law regulations further stated in § 315a para. 1 HGB were taken into account. All mandatory applicable standards and interpretations have been considered. Non-mandatory IFRS have not been adopted.

The consolidated financial statements are prepared in Euro. Unless otherwise stated, all amounts are rounded either up or down to the nearest full thousand Euro (k€) in accordance with commercial rounding.

The income statement was prepared in accordance with the nature of expense method. Balance sheet classifications follow maturities. For the purpose of clear and more comprehensive presentation, individual items are combined on balance sheet and income statement. Additional details are given in the notes where those items are presented separately.

2. SIGNIFICANT ACCOUNTING POLICIES

2.1 BASIS OF PREPARATION

The consolidated financial statements have been in principle prepared on the historical cost basis. However, a number of Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities, as explained in the accounting policies below.

Historical cost is generally based on the fair value of the consideration given exchange for goods and services.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless whether that price is directly observable or estimated using another valuation technique.

In estimating the fair value of an asset or liability, SolarWorld group takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at measurement date. Fair value for measurement and/or disclosure purposes in these consolidated financial statements is determined on such a basis, except for measurements that have some similarities to fair value but are not fair value, such as realizable value in IAS 2 or value in use in IAS 36.

A market price is not always being readily available and a fair value cannot be reliably determined, but must often be calculated based on different measurement parameters. For financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date.
- Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- Level 3 inputs are unobservable inputs for the asset or liability.

If the inputs used to measure the fair value of an asset or a liability fall into different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

SolarWorld group recognizes transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

The principal accounting policies are set out below. They basically correspond with those principles applied last year except for those stated as an exception from that rule below.

2.2 CHANGES IN ACCOUNTING POLICIES

First-time mandatory adoption of standards and interpretations for 2016

The following standards and interpretations or substantial amendments became bindingly applicable for the first time in the business year 2016.

AMENDMENTS TO IAS 19 - DEFINED BENEFIT PLANS: EMPLOYEE CONTRIBUTIONS.

On November 21, 2013 the IASB issued narrow-scope amendments to IAS 19 "Employee Benefits" titled "Defined Benefit Plans: Employee Contributions (Amendments to IAS 19)" that were adopted into European law on December 17, 2014. The amendments are applicable to recognizing contributions of employees or third parties to defined benefit plans. Hereby it will be allowed to recognize employees' or third parties' contributions as a reduction of current service costs in the period in which the corresponding servicing has been rendered if the contributions are independent of the number of years of employee service. The amendments to IAS 19 are to be applied for accounting periods beginning on or after July 1, 2014. In the context of the endorsement, the mandatory effective date was deferred to fiscal years beginning on or after February 1, 2015; earlier application was permitted. The amendments do not materially affect the consolidated financial statements of SolarWorld AG.

IMPROVEMENTS TO IFRS. On December 12, 2013, the IASB issued the annual improvements for the 2010 to 2012 cycle in terms of smaller and less urgent adjustments that were also adopted into European law on December 17, 2014. The following selected contents of the collective standard regarding improvements of IFRS had to be taken into account upon preparing the consolidated financial statements for SolarWorld group:

- **IFRS 2 – SHARE-BASED PAYMENT:** Amends the definitions of 'vesting condition' and 'market condition' and adds definitions for 'performance condition' and 'service condition' (which were previously part of the definition of 'vesting condition').
- **IFRS 3 – BUSINESS COMBINATIONS:** Clarifies that contingent consideration that is classified as an asset or a liability shall be measured at fair value at each reporting date.
- **IFRS 8 – OPERATING SEGMENTS:** Requires an entity to disclose the judgments made by management in applying the aggregation criteria to operating segments. Clarifies that an entity shall only provide reconciliations of the total of the reportable segments' assets to the entity's assets if the segment assets are reported regularly.

- **IFRS 13 – FAIR VALUE MEASUREMENT:** Clarifies that issuing IFRS 13 and amending IFRS 9 and IAS 39 did not remove the ability to measure short-term receivables and payables with no stated interest rate at their invoice amounts without discounting if the effect of not discounting is immaterial.
- **IAS 16 – PROPERTY, PLANT AND EQUIPMENT:** Clarifies that when an item of property, plant and equipment is revalued the gross carrying amount is adjusted in a manner that is consistent with the revaluation of the carrying amount.
- **IAS 24 – RELATED PARTY DISCLOSURES:** Clarifies that an entity providing key management personnel services to the reporting entity or to the parent of the reporting entity is a related party of the reporting entity.
- **IAS 38 – INTANGIBLE ASSETS:** Clarifies that when an intangible asset is revalued, the gross carrying amount is adjusted in a manner that is consistent with the revaluation of the carrying amount.

The amendments are mandatorily effective for accounting periods beginning on or after July 1, 2014. In the context of the endorsement, the mandatory effective date was deferred to fiscal years beginning on or after February 1, 2015; earlier application was permitted. The amendments do not materially affect the consolidated financial statements of SolarWorld AG.

AMENDMENTS TO IFRS 11 – JOINT ARRANGEMENTS. On May 6, 2014 the IASB issued amendments to IFRS 11 “Joint Arrangements” that were adopted into European law on November 24, 2015. The amendments clarify that both the initial and subsequent acquisition of interests in a joint operation that constitutes a business must be accounted for in line with the principles of IFRS 3 “Business Combinations” except where these principles conflict with the guidance in IFRS 11. In addition, the disclosure requirements of IFRS 3 must be met. The amendments are to be applied for fiscal years beginning on or after January 1, 2016; earlier application was permitted. The amendments do not materially affect the consolidated financial statements of SolarWorld AG.

AMENDMENTS TO IAS 16 – PROPERTY, PLANT AND EQUIPMENT AND IAS 38 – INTANGIBLE ASSETS. On May 12, 2014 the IASB issued amendments to IAS 16 “Property, Plant and Equipment” and IAS 38 “Intangible Assets” providing additional guidelines for determining an acceptable method of depreciation or amortization. They have been adopted into European law on December 2, 2015. The amendments clarify that revenue-based methods are not appropriate for calculating

the depreciation of property, plant and equipment and are only appropriate in limited circumstances for calculating the amortization of intangible assets. The amendments are to be applied for fiscal years beginning on or after January 1, 2016; earlier application was permitted. The amendments do not affect the presentation of the consolidated financial statements of SolarWorld AG.

IMPROVEMENTS TO IFRS. On September 25, 2014 the IASB issued the annual improvements for the 2012 to 2014 cycle in terms of smaller and less urgent adjustments that have been adopted into European law on December 15, 2015. In the context amendments of four standards were published: IFRS 5 “Non-current Assets held for Sale and Discontinued Operations”, IFRS 7 “Financial Instruments: Disclosures”, IAS 19 “Employee Benefits” and IAS 34 “Interim Financial Reporting”. The amendments are effective for fiscal years beginning on or after January 1, 2016 and have to be applied prospectively or retrospectively depending on the respective amendment; earlier application was permitted. The amendments do not materially affect the consolidated financial statements of SolarWorld AG.

AMENDMENTS TO IAS 1 – PRESENTATION OF FINANCIAL STATEMENTS: DISCLOSURE INITIATIVE. On December 18, 2014, the IASB issued Amendments to IAS 1 “Presentation of Financial Statements” as part of its disclosure initiative. The amendments relate primarily to clarifications relating to the presentation of financial reports.

Firstly, disclosures are only required to be made in the notes if their inclusion is material for users of the financial statements. This also applies when an IFRS Standard explicitly specifies a minimum list of disclosures. Secondly, items to be presented in the balance sheet, income statement and comprehensive income can be aggregated or disaggregated by using subtotals. Thirdly, it clarifies that an entity's share of other comprehensive income of equity-accounted entities is required to be analyzed – within the Statement of comprehensive result – to show “components, which will be subsequently reclassified to profit and loss” and “components, which will be not subsequently reclassified to profit and loss”. Fourthly, it is stressed that there is no standard template for the notes and that the emphasis should be on structuring the notes based on the relevance for the specific reporting entity. The Standard is mandatory for the first time for annual periods beginning on or after January 1, 2016. Application of the new rules has no material impact on the consolidated financial statements of SolarWorld AG.

The following standards effective for fiscal years beginning on or after January 1, 2016 have no impact on the Group's consolidated financial statements and are not presented in detail:

New or amended standards	Possible impact on consolidated financial statements
IFRS 14 - Regulatory Deferral Accounts	None. The standard is available only to first-time adopters of IFRSs. The European Commission has decided not to endorse this Interim standard into EU law.
Amendments to IFRS 10, IFRS 12 and IAS 28 - Investment Entities: Applying the consolidation exception	None. The amendments address issues that have arisen in the context of applying consolidation exception for investment entities.
Amendment to IAS 27 - Equity Method in separate financial statements	None. As the amendments to IAS 27 concern an entity's separate financial statements, it does not have any impact on the Group's consolidated financial statements.
Amendment to IAS 16 and IAS 41 - Agriculture: Bearer Plants	None. SolarWorld group is not engaged in agricultural activities.

In the current period, the option of an earlier application of any non-mandatory standards or interpretations has not been used by SolarWorld AG.

Standards and interpretations not yet mandatory

The following standards and interpretations have been issued by the IASB. Their adoption has not been mandatory at the present time and must be endorsed partially by the EU:

IFRS 9 – FINANCIAL INSTRUMENTS. On November 12, 2009 the IASB issued the new standard IFRS 9 “Financial Instruments” on the classification and measurement of financial assets. This standard marks the first of three phases of the project to completely replace the existing IAS 39 “Financial Instruments: Recognition and Measurement”. The first phase deals initially only with financial assets. IFRS 9 amends the recognition and measurement for financial assets, including various hybrid contracts.

In accordance with the approach of IFRS 9 financial assets are measured at either amortized cost or fair value. IFRS 9 harmonizes the various rules contained in IAS 39 and reduces the number of valuation categories for financial instruments on the assets side of the balance sheet. The classification to one of the two measurement categories is based partly on how an entity manages its financial instruments (so called business model) and partly on the contractual cash flow characteristics.

On October 28, 2010 the IASB issued requirements on the accounting for financial liabilities which amend IFRS 9 “Financial Instruments” and complete the classification and measurement phase of the IASB's project to replace IAS 39 “Financial Instruments: Recognition and Measurement”. With the new requirements, an entity choosing to measure liabilities at fair value will recognize the portion of the change in its fair value due to changes in the entity's own credit risk in other comprehensive income within equity and not in profit and loss.

Issuing amendments to IFRS 9 “Financial Instruments” and to IFRS 7 “Financial Instruments: Disclosures” on December 16, 2011, the IASB defers the mandatory effective date of IFRS 9 from January 1, 2013 to January 1, 2015. In addition the amendment provides relief from the requirement to restate comparative financial statements for the effect of applying IFRS 9; earlier application is permitted. Instead, additional transition disclosures have been added to IFRS 7 to help users of the financial statements to understand the effect that the initial application of IFRS 9 has on the classification and measurement of financial instruments.

On November 19, 2013 the IASB issued further amendments to IFRS 9 “Financial Instruments” (Hedge Accounting and Amendments to IFRS 9; IFRS 7 and IAS 39). On the one hand, the amendments overhaul the requirements for hedge accounting by introducing a new hedge accounting model. They also enable entities to change the accounting for liabilities they have elected to measure at fair value, such that fair value changes due to changes in “own credit risk” would not require to be recognized in profit or loss. In addition, extensive disclosures are required. The mandatory effective date of January 1, 2015 was removed and a new application date of January 1, 2018 set.

On July 24, 2014 the IASB issued the final version of IFRS 9 “Financial Instruments”. The new version includes revised requirements for the classification and measurement of financial assets and for the first time regulations on the impairment of financial instruments; with the new “expected loss model” losses are recognized earlier because both existing and expected losses are recognized. The new regulations must be applied for fiscal years beginning on or after January 1, 2018. In general they must be applied retrospectively, but various transition options are allowed; earlier application is permitted. Currently, Management assumes that the amendments will have an impact of the disclosures regarding financial instruments.

IFRS 15 – REVENUE FROM CONTRACTS WITH CUSTOMERS. On May 28, 2014 the IASB issued the new standard IFRS 15 “Revenue from Contracts with Customers”. The purpose of the new standard on revenue recognition is to bring together the large number of existing guidelines contained in various standards and interpretations. At the same time it establishes uniform core principles to be applied to all industries and all types of revenue transactions. A 5-step model is used to determine at which point in time or over which period of time revenues are to be recognized and in what amount. The standard also includes further detailed guidance and extended disclosure requirements. Due to the amendment to IFRS 15 issued on September 11, 2015, the mandatory effective date was deferred from fiscal years beginning on or after January 1, 2017 to fiscal years beginning on or after January 1, 2018. In general it must be applied retrospectively, but various transition options are allowed; early application continues to be permitted. Currently, Management does not expect the amendments to have a material impact on the Group’s consolidated financial statements.

AMENDMENTS TO IFRS 10 – CONSOLIDATED FINANCIAL STATEMENTS AND IAS 28 – INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (2011). On September 11, 2014 the IASB issued amendments to IFRS 10 “Consolidated Financial Statements” and IAS 28 “Investments in Associates and Joint Ventures (2011)”. The amendments address a well-known inconsistency between the two standards regarding the accounting of the sale or contribution of assets between an investor and its associate or joint venture. When a transaction involves a business in accordance with IFRS 3, a full gain or loss has to be recognized by the investor; when the transaction involves assets that do not constitute a business, only a partial gain or loss has to be recognized. The amendments were planned to become effective for fiscal years beginning on or after January 1, 2016, but effective date was deferred by the IASB for an indefinite period on December 17, 2015; earlier application continues to be permitted. The EU has not yet endorsed the amendments. Currently, Management does

not expect the amendments – if endorsed by the EU in the current version – to have a material impact on the Group’s consolidated financial statements.

IFRS 16 – LEASES. On January 13, 2016 the IASB issued the new standard IFRS 16 “Leases”. IFRS 16 supersedes the existing applicable standard IAS 17 and related interpretations IFRIC 4, SIC-15 and SIC-27. The new standard brings most leases on-balance sheet for lessees under a single model, eliminating the distinction between operating and finance lease. The lessor’s accounting model regulated in IAS 17 largely remains unchanged. The new standard is effective for fiscal years beginning on or after January 1, 2019, with earlier adoption permitted if IFRS 15 “Revenue from Contracts with Customers” has also been applied. The EU has not yet endorsed the standard. Currently, Management assumes that the initial application of the Standard will have certain impacts due to the existing rental contracts for commercial properties. These impacts materialize by way of capitalizing rights of use and correspondingly recording a lease liability. In the profit and loss statement, there will be no more other operating expenses for lease expenses. Instead, depreciation for the capitalized rights of use and interest expenses from the lease liabilities will be recorded. In regard to the extent, we refer to our disclosures in note 38.

AMENDMENTS TO IAS 12 – INCOME TAXES. On January 19, 2016 the IASB has published final amendments to IAS 12 “Income Taxes” concerning the recognition of deferred taxes for unrealized losses. The amendments clarify the following aspects:

- Unrealized losses on debt instruments measured at fair value and measured at cost for tax purposes give rise to a deductible temporary difference regardless of whether the debt instrument’s holder expects to recover the carrying amount of the debt instrument by sale or by use.
- The carrying amount of an asset does not limit the estimation of probable future taxable profits.
- Estimates for future taxable profits exclude tax deductions resulting from the reversal of deductible temporary differences.
- An entity assesses a deferred tax asset in combination with other deferred tax assets. Where tax law restricts the utilization of tax losses, an entity would assess a deferred tax asset in combination with other deferred tax assets of the same type.

The amendments are effective for fiscal years beginning on or after January 1, 2017; earlier application is permitted. The EU has not yet endorsed the standard. Currently, Management does not expect the amendments – if endorsed by the EU in the current version – to have a material impact on the Group’s consolidated financial statements.

AMENDMENTS TO IAS 7 – STATEMENT OF CASH FLOWS. On January 29, 2016 the IASB has published final amendments to IAS 7 “Statement of Cash Flows”. The amendments are intended to clarify IAS 7 to improve information to users of financial statements about an entity’s financing activities. They are effective for fiscal years beginning on or after January 1, 2017; earlier application is permitted. The EU has not yet endorsed the standard. Currently, Management assumes that – if the Standard is endorsed by the EU in the current version – further disclosures regarding the development of the financial liabilities might become necessary.

CHANGES IN ACCOUNTING METHODS

SolarWorld AG has applied all accounting principles endorsed by the EU and compulsory for accounting periods beginning before or on January 1, 2016, if affecting these consolidated financial statements. We refer to our comments stated above.

2.3. BASIS OF CONSOLIDATION AND GROUP STRUCTURE

2.3.1. SUBSIDIARIES

The consolidated financial statements incorporate the financial statements of SolarWorld AG and all domestic and foreign entities (including structured entities). Subsidiaries are fully consolidated once the group has control. Control is achieved when SolarWorld AG:

- has power over the investee,
- is exposed, or has rights, to variable return from the investment with the investee and
- has the ability to use its power to affect the returns.

The Company reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

Consolidation of a subsidiary begins when SolarWorld AG obtains control over the subsidiary and ceases when the Company loses control over the subsidiary. Specifically, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated statement of profit or loss and other comprehensive income from the date the Company gains control until the date the Company ceases to control the subsidiary.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with SolarWorld group’s accounting policies.

All intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions of the Group are eliminated in full on consolidation.

The following additions apply with regard to recognition of project entities that were or are specially established for the construction, operation and marketing of solar parks: Amongst other things, SolarWorld group's operations include the development, construction and marketing of solar parks. For this purpose, special project entities are founded that are fully consolidated in the consolidated financial statements if SolarWorld group controls them in terms of IFRS 10. Deliveries and services rendered to the respective project entity by SolarWorld group within the consolidation period therefore do not result in revenue recognition but instead either result in an increase of inventories through work in progress or finished goods or of fixed assets in the case of external marketing not scheduled in the medium-term. Revenue recognition occurs at the time of deconsolidation, i.e. when SolarWorld group no longer controls the project entity. Since the construction and marketing of solar parks is part of SolarWorld group's operations, deconsolidation of project entities, from an economic point of view, equals the sale of a solar park that is therefore recognized as a revenue transaction on the income statement and shown in the cash flow from operating activities on the cash flow statement.

For capital consolidation, cost of the investment is offset with the proportional equity amount - measured at fair value – at the time of acquisition. A resulting positive difference is allocated to the assets insofar as their carrying amount differs from the fair value. Any remaining positive difference is considered goodwill. A negative difference is recognized through profit and loss.

a) Changes in SolarWorld group's ownership interest in existing subsidiaries

Changes in SolarWorld group's ownership interest in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. In the scope of an equity transaction, the additional acquisition only concerns the allocation of the owners' residual claims. Hence, recognition of assets and liabilities remain unchanged. Within equity, however, a shift in value takes place between majority owners and non-controlling owners.

When the Group loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between

- the aggregate of the fair value of the consideration received and the fair value of any retained interest and
- the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interest.

All amounts previously recognized in other comprehensive income in relation to that subsidiary are accounted for as if the Group had directly disposed of the related assets or liabilities of the subsidiary (i.e. reclassified to profit or loss or transferred to another category of equity as specified/permitted by applicable IFRSs).

b) Business combinations

Business combinations are accounted for using the acquisition method. Costs of a business combination consist of the balance of the transferred consideration measured at fair value as of acquisition date and - if applicable - the non-controlling interests in the acquired entity. Acquisition-related costs are generally recognized in profit or loss as incurred.

If an entity is acquired, the classification and designation of the financial assets and assumed liabilities is assessed in compliance with the contract terms, economic framework and conditions prevailing at the time of acquisition.

Upon initial recognition, goodwill is measured at cost as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree - if any - over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, a negative difference arises from the acquisition (badwill), the excess is recognized immediately in profit or loss as a bargain purchase gain.

If the initial accounting for a business combination is incomplete by the end of a reporting period, SolarWorld reports provisional

amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date. Measurement period cannot exceed one year from the acquisition date.

2.3.2. INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a joint agreement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint Control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The Group's investments in associates and joint ventures are recognized in accordance with the equity method.

Investments in other companies accounted for using the equity method are recognized on the balance sheet at cost in consideration of changes that occurred after the acquisition date regarding the Group's participation in the investee's equity, of the hidden reserves and burdens recognized at acquisition as well as of the unrealized proportionate intercompany results from transactions with the investee. Goodwill connected with the investment is included in the carrying amount of the investment and is subject to neither regular amortization nor separate impairment tests.

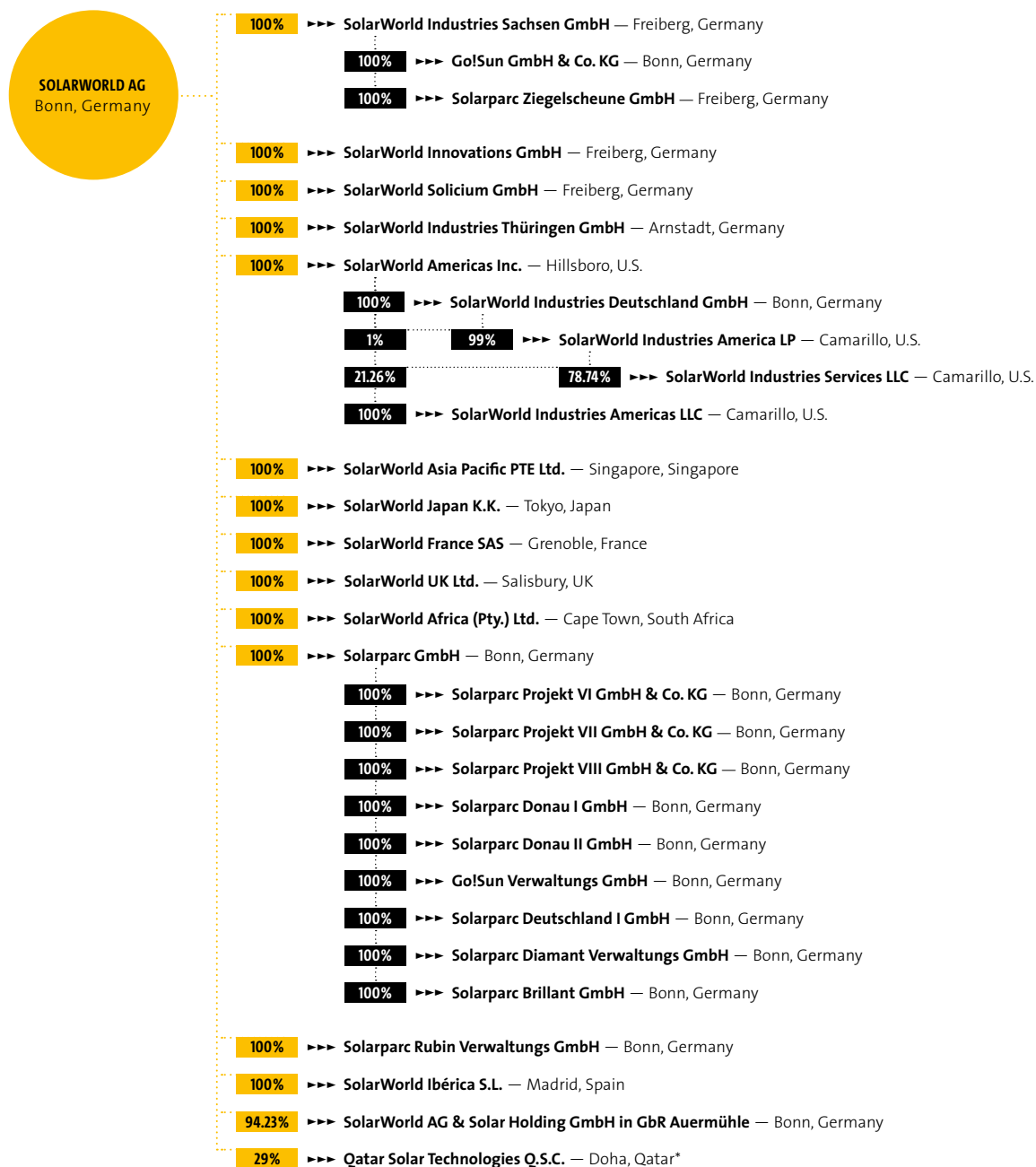
The consolidated income statement contains in the line item "result from investments measured at equity" the Group's share in the profit or loss of the investee including the effects of the development of the disclosed hidden reserves and burdens. These concern profit allocable to the investors and, thus, profit after tax and non-controlling interests in the investee's subsidiaries. The Group recognizes any changes recognized directly in the investee's equity to the extent of its share. Unrealized intercompany results from transactions between the investee and the Group are also eliminated through the item "result from investments measured at equity" in accordance with the latter's share in the investee.

The financial statements of the investments are prepared as per the same balance sheet date as those of the parent. When necessary, adjustments are made to the financial statements of investments to bring their accounting policies into line with SolarWorld group's accounting policies.

After application of the equity method, the Group determines whether it is necessary to recognize any additional impairment loss with respect to the Group's investment. As per each balance sheet date, the Group determines whether there is any evidence indicating that the investment in an associate or joint venture could be impaired. If this is the case, the difference between the recoverable amount of the investment in an associate or joint venture and the carrying amount of the investment is recognized in profit or loss.

2.3.3. GROUP STRUCTURE

All entities listed below were included in the consolidated financial statements of SolarWorld AG per December 31, 2016 by way of full consolidation, except for Qatar Solar Technologies Q.S.C.:



* Consolidated at equity

Liquidation of SolarWorld Czech s.r.o., Teplice/Czech Republic, a 100 percent subsidiary of SolarWorld AG, Bonn, has been completed in the reporting period. The company was deleted from the commercial register on August 16, 2016.

SolarWorld Industries Sachsen GmbH, Solarparc GmbH, SolarWorld Innovations GmbH, SolarWorld Industries Deutschland GmbH, Solarparc Ziegelscheune GmbH, SolarWorld Solicium GmbH and SolarWorld Industries Thüringen GmbH utilize the disclosure and preparation facilitations provided by § 264 para. 3 HGB.

2.4. CURRENCY TRANSLATION

The functional currency of SolarWorld group is the Euro (€). Financial statements of the consolidated companies that are presented in foreign currencies are translated into Euro (€) in accordance with the concept of functional currency as set forth by IAS 21. The

functional currency of foreign companies is determined by the primary economic environment in which the company principally generates and uses means of payment. Within SolarWorld AG, functional currency basically equals the domestic currency with the exemption of SolarWorld Asia Pacific PTE Ltd. and Qatar Solar Technologies Q.S.C. whose functional currency is US\$.

For the purpose of translating the foreign companies' financial statements into the reporting currency of the Group, assets and liabilities are translated per closing rate while expenses and revenue are translated by means of the average annual rate. Due to the application of the closing date method, differences resulting from the translation are transferred to a currency exchange reserve, thereby not affecting profit or loss. The amount recognized in the reserve for a foreign operation is re-recognized and shown on the income statement upon disposal of the foreign operation.

The following exchange rates were used for currency translation:

		Closing rate		Average rate	
1 € =		Dec 31, 16	Dec 31, 15	2016	2015
U.S.	USD	1.06	1.09	1.11	1.11
South Africa	ZAR	14.47	16.99	16.27	14.17
Czech Republic	CZK	27.02	27.02	27.03	27.28
Japan	JPY	123.51	131.12	120.18	134.31
U.K.	GBP	0.86	0.74	0.82	0.73

2.5. SUBSTANTIAL JUDGMENTS, ESTIMATIONS AND ASSUMPTIONS OF MANAGEMENT

In the scope of preparing the consolidated financial statements in consideration of IFRS, some items require that judgments, estimations and assumptions are made which affect recognition and measurement of assets and liabilities on the balance sheet or the amount and presentation of revenue and expenses on the Group's income statement as well as the statement of contingent assets and liabilities. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results in future periods may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to estimates are recognized in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

The following substantial judgments, estimates and assumptions were made when the Group's financial statements in 2016 were prepared:

The consolidated financial statements are based on the assumption of a going concern.

Furthermore, the most significant assumptions and estimations concern the measurement of inventories, usability of deferred tax assets, impairment tests for fixed assets, the accounting of long-term purchase agreements for silicon concluded in the past and measurement of provisions, especially provisions for litigation risks and warranties. These assumptions and estimations are based on premises that are, in turn, based on the respective state of knowledge currently available. However, these circumstances and assumptions regarding future developments can change due to market fluctuations and the market situation as well as legal assessments to the contrary that lie outside the Group's influence.

Assumptions regarding expected business development are especially based on the existing circumstances at the time of preparation of the consolidated financial statements and the future development of the global and sector-specific environment as is deemed realistic at the time.

The Group's impairment tests are based on calculations using the discounted cash flow method. The cash flows are derived from the finance plan of the next three years whereas future expansion investments that are not yet being implemented and will increase the earning power of the tested cash-generating unit are not included. The recoverable amount greatly depends on the discount rate used in the scope of the discounted cash flow method as well as on the expected future cash inflows and the growth rate used for extrapolation. More details on the basic assumptions for determining the recoverable amount for the cash-generating unit are provided in note 8.

Especially with regard to measurement on the basis of the recoverable amount, the inventory measurement is based on assumptions regarding the expected sales prices and costs expected to be incurred until completion. As a basic principle, we assumed that raw materials and consumables as well as work in progress are further processed to modules and sold as modules.

With regard to long-term purchase agreements for silicon concluded in the past and the respective prepayments made, assumptions are made that relate to the legal validity of the agreements and, as regards to their extent, on the measurement of such prepayments. Such assumptions are subject to considerable uncertainties and are essentially based on estimations of the company's legal consultants and our own estimations.

With respect to the legal validity of the agreements, the company assumes, based on legal opinions prepared by third parties, that purchase commitments from contracts on which basis the supplier made a successful compensation claim of € 0.8 billion in trial court most probably violate EU anti-trust laws and therefore are null and void. Thus, in the accounting, the company did not set up a provision for onerous contracts in terms of IAS 37. With regard to the accounting of the respective prepayments made (carrying amount € 81.3 million), the company assumes that it is unrealizable. The prepayments were therefore completely written off already in the past. We refer to our comments in note 42.

Due to uncertainties in the scope of legal disputes as well as possible changes of strategy, the accounting and measurement of the long-term contracts is subject to periodic reestimation upon changing circumstances over time.

The warranty provision is set up for specific individual risks, for the general risk of claims due to statutory warranties and performance guarantees granted with regard to sold solar modules. The latter are granted for a period of 25 and 30 years. Since SolarWorld AG has been producing and selling solar modules for less than 25 years, it is only partially possible to fall back on experience regarding the calculation of the performance guarantee provision. In addition, assumptions and estimations are required that are also subject to uncertainties. Their modification due to further gaining experience regarding claims due to the performance guarantee over the course of time can lead to adjustments of the provision or consequences on the expenses from warranties recognized on the income statement.

With respect to the exact specification of assumptions made in connection with the determination of further provisions, we refer to the respective disclosures in notes 2.20 and 33.

With regard to tax loss carryforwards, deferred tax claims are recognized only if their realization is likely in the medium-term (within the next five years). If a tax unit shows a history of losses, deferred tax claims from loss carryforwards of this unit are only recognized if sufficient taxable temporary differences or substantial indications for their realization exist. When determining the amount of deferred tax assets suitable for capitalization, substantial management assumptions and estimations are necessary with respect to the expected time of occurrence and the amount of the future taxable income as well as future tax planning strategies. Due to the loss

history of some of the group entities, no deferred tax assets for tax loss carryforwards were recognized for the largest part.

Uncertainties exist with respect to the interpretation of complex tax regulations, changes in tax law and the amount and time of origination of future results subject to tax. Due to the great bandwidth of international business relations and the non-current character and complexity of existing contractual agreements, it is possible that deviations between the actual results and the assumptions made or future modifications of such assumptions might require adjustments of tax income and tax expenses already recognized. On the basis of reasonable estimations, the Group sets up provisions for possible tax field audits in the countries of operations. The extent of such provisions is based on different factors, e.g. experience from past tax field audits and different interpretations of tax law regulations by the taxpaying entity and the responsible tax office. Such different interpretations can result from a number of different facts and circumstances depending on the conditions that prevail in the country of domicile of the respective group company.

To the extent to that the fair value of financial assets and liabilities recognized on the balance sheet cannot be determined by way of active market data, it is primarily determined in application of measurement procedures including the discounted cash flow method. If possible, the factors included in the model are based on observable market data. For further details, we refer to note 40.

Expenses from postemployment defined benefit plans and the present value of pension obligations are determined on the basis of actuarial computations. The actuarial measurement is carried out on the basis of assumptions regarding discount rates, mortality and future increase in pensions. Due to the complexity of measurement, the assumptions used as a basis and their long-term nature, a defined benefit obligation shows very sensitive reactions to any modifications of these assumptions. All assumptions are subject to evaluation at each balance sheet date. When determining the appropriate discount rate, management keeps to the interest rates of corporate bonds with at least sound creditworthiness. The mortality rate is based on publicly accessible mortality tables. Further details regarding the applied assumptions can be found in notes 2.19 and 33.

2.6. INTANGIBLE ASSETS

Intangible assets with finite useful lives are capitalized at cost and amortized on a straight-line basis generally over a period of 3 to 15 years, depending on their estimated useful lives. At SolarWorld group these mainly include concessions, industrial property and similar rights and assets as well as licenses in such rights and assets. Intangible assets with indefinite useful lives do not exist. Expenditure on research incurred upon generation of intangible assets is immediately recognized as an expense. The same applies as regards development expenditure because research and development are iteratively linked and reliable severability therefore generally does not exist.

Profits or losses from derecognition of intangible assets are determined as the difference between the net disposal gain and the carrying amount of the asset and recognized through profit or loss in the period in which the asset is derecognized. Amortization of intangible assets is recognized in the amortization and depreciation item on the income statement.

All expenses for exploration and evaluation of natural resources are recorded as such and separately recognized as intangible assets. To the extent to that indications exist that point to impairment in terms of IFRS 6.20, the intangible asset is assessed for potential impairments. At balance sheet date, such indications were not at hand. After successful exploration and evaluation, the intangible asset is subject to regular amortization for the duration of the production period. Depreciation of property, plant and equipment used for exploration and evaluation purposes is part of the expenses that are recognized as intangible asset.

2.7. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are measured at cost less regular physical depreciation. Cost comprises all individual expenses directly attributable to the manufacturing process as well as appropriate proportions of the necessary cost of materials and manufacturing overhead. In addition, cost includes depreciation caused by manufacturing and the manufacturing-related pro-rata costs for company retirement benefit plans as well as the voluntary social benefits of the company. Administration costs are considered to the extent to

which they can be attributed to manufacturing. Cost also includes – in addition to the purchase price after reduction of discounts, rebates and cash discounts – all directly attributable costs incurred to bring the asset to a location and condition necessary for it to be capable of operating in the manner intended by management.

Borrowing costs that can be directly attributed to acquisition, construction or production of a qualifying asset are capitalized as part of the cost of the respective asset if a period of at least one year is required to prepare the asset for its intended use or sale. All other borrowing costs are recognized as an expense in the period in which they are incurred. Borrowing costs are interest and other costs incurred by an enterprise in connection with the borrowing of funds. As a basic rule, the Group capitalizes borrowing costs for qualifying assets. As in the prior year, however, no qualifying assets were identified in the annual period 2016. Hence, all borrowing costs were recognized as expenses.

Ongoing maintenance and repair expenses that do not constitute material replacement investments are recognized as expense right away. Where substantial parts of property, plant and equipment need to be replaced in regular intervals, the Group recognizes these as separate assets with specific useful lives or depreciation. In the event of a major inspection, the Group capitalizes in the carrying amount of the item of property, plant and equipment the cost of replacing part of such an item when that cost is incurred if the recognition criteria are met. All other inspection and maintenance cost is recognized through profit or loss immediately.

To the extent to that depreciable property, plant and equipment consist of material identifiable components with different useful lives, these components are recognized separately and written down over the course of the respective useful life.

With respect to own work capitalized we refer to note 4.

The following useful lives are used as a basis for depreciation:

Buildings including investment property	15 to 50 years
Buildings/fixtures on leasehold land	Lease agreement terms (max. 10 to 15 years)
Technical equipment and machinery	up to 10 years
Wind power and photovoltaic plants	20 years
Other equipment, factory and office equipment	3 to 5 years

Property, plant and equipment are derecognized either upon disposal or as soon as no further economic benefit is expected from further utilization or disposal of the recognized asset. The profits or losses resulting from derecognizing the asset are determined as the difference between the net sale price and the carrying amount of the asset and are recognized on the income statement through profit or loss in the period in which the asset is derecognized.

Investment grants and subsidies do not reduce the respective asset's cost but are subject to deferral on the liabilities side of the balance sheet. We refer to notes 2.18 and 32.

2.8. IMPAIRMENTS OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

At each balance sheet date, the carrying amounts of property, plant and equipment and intangible assets are examined with regard to indications of the occurrence of impairments (impairment test). If such indications are identifiable, the recoverable amount of the asset is estimated to determine the extent of any possible impairment expenses. To the extent to that the recoverable amount cannot be estimated for the individual asset, the determination is conducted on the level of the cash generating unit (CGU) to which the respective asset is assigned.

The recoverable amount is the higher one of fair value less costs to sell and the value in use. In the impairment test, SolarWorld principally only determined the value in use.

For determining the value in use, the estimated future cash flows are discounted with a pre-tax interest rate, which considers both the current market assessment through time value of money and risks concerning the asset to the extent to that they are not yet accounted for in the scope of the cash flow estimation. The computations are based on forecasts that are based on financial plans for the next three years as authorized by management. This planning horizon shows the assumptions for short- and medium-term market developments. Free cash flows were discounted at weighted average costs of capital after corporation taxes between 11.5 percent and 12.1 percent (2015: 10.8 percent and 11.0 percent) at the balance sheet date. This discount rate is based on the risk-free interest rate determined in accordance with the reporting date-related interest structure at the bond market for which a value between 0.81 percent and 2.86 percent (2015: 1.29 percent and 2.76 percent) was applied and a general market risk premium before personal taxes – unchanged compared to the prior year – between 5.80 percent and 6.25 percent. Data of a representative peer group, in which SolarWorld AG is not considered because of the influence of the restructuring on past data from which the beta factor is derived, were used for determining the beta factor, borrowed capital surcharge and capital structure.

As far as the fair value less costs to sell is necessary for the purpose of determining the minimum value according to IAS 36.105 or for single item valuation, it was calculated on the basis of current market conditions and a general commercial use by market participants. For parts of fixed assets, expert estimates on the fair value less costs to sell were at hand. Evaluating machinery, prices and price indices for commercial products (based on the original value and current replacement value) as well as the variable factors time value and utility value were included in particular. The time value factor comprises the loss in value attributed to the age of the object as well as current market trends. The utility value factor is above all determined by the condition of the machinery as well as its location and its time and degree of utilization. For marketing assumptions, several scenarios were considered.

To the extent to that the recoverable amount of an asset or a CGU falls short of its carrying amount, the carrying amount is written down to the recoverable amount. The impairment loss is immediately recognized through profit and loss.

Should the impairment loss be reversed, the carrying amount of the asset or the CGU will be increased to the reassessed recoverable amount. Attention needs to be paid to the ceiling of the addition in the amount of the original carrying amount of the asset or CGU. The reversal of an impairment loss is immediately recognized through profit and loss.

With regard to the results of the impairment tests conducted during the reporting year, we refer to note 8.

2.9. OTHER NON-CURRENT ASSETS

Prepayments made on inventories are recognized in other non-current assets.

2.10. INVENTORIES

Inventories include raw materials and supplies, work in process and finished goods, merchandise and short-term prepayments for inventories. Purchased inventories are recognized at acquisition cost that, depending on the type of inventory, is determined either on the basis of average costs or in accordance with the “first-in-first-out” (FIFO) method. Inventories of the Group’s own making are recognized at production cost. In addition to the individual costs, cost includes adequate proportions of the necessary cost of materials and manufacturing overhead based on regular capacity utilization of the production facilities. Cost also includes depreciation caused by manufacturing which can be directly allocated to the manufacturing process and, to the extent to that they are manufacturing-related, pro-rata expenses for company retirement benefit plans and voluntary social benefits. Administration costs are taken into account to the extent to that they concern manufacturing. Borrowing costs are not taken into account, as inventories do not constitute qualifying assets from the Group’s point of view.

Measurement per balance sheet date occurs at the respective lower amount of cost on the one hand side and net realizable value on the other. The latter is the estimated sales proceed of the final good realizable in the normal course of business less estimated costs until completion of the good as well as estimated necessary distribution costs.

Due to the prevailing manufacturing circumstances in both, entity and industry, finished goods and merchandise are summarized in the comments on inventories in note 23.

If current prepayments recognized in inventories were paid in foreign currencies, measurement was carried out at historic rate at payment date because the prepayments are non-monetary items in terms of IAS 21.16.

2.11. TRADE RECEIVABLES

Trade receivables are accounted for at their nominal value. If there is doubt concerning the recoverability of the debt, the receivables are recognized at lower realizable value. In part, allowances are made using a contra account. The decision whether an allowance is made via contra account or by directly reducing the carrying amount depends on the probability of the expected loss. Receivables stated in foreign currencies are accounted for at closing rate.

Receivables from construction contracts will be accounted for in accordance with the percentage-of-completion-method as set forth by IAS 11. We refer to our statements in note 2.22.

2.12. OTHER RECEIVABLES AND ASSETS

Other receivables and other assets are accounted for at nominal value. Identifiable risks and general credit risks are taken into consideration by setting up corresponding value adjustments.

2.13. OTHER FINANCIAL ASSETS

Financial assets in terms of IAS 39 are either categorized as financial assets

- “measured at fair value through profit or loss”,
- “held-to-maturity-investments”,
- “financial assets available for sale”,
- “loans and receivables”, or
- derivatives that were designated as hedging instruments and are effective as such.

The Group determines the classification of its financial assets upon initial recognition. Upon initial recognition, financial assets are measured at fair value plus transaction costs. Financial assets classified as “measured at fair value through profit or loss” are exempted therefrom, as they are initially recognized at fair value without taking transaction costs into account.

In cases where trade date and settlement date of purchases or sales of financial assets do not coincide, the trade date is used for initial recognition or derecognition.

At reporting date, no securities categorized as “held-to-maturity investments” exist.

Subsequent measurement of financial assets depends on their categorization.

Securities are “measured at fair value through profit or loss” if they are either designated as such or “held for trading”.

Securities are categorized as “held for trading” if they were acquired with the intention to sell them in the short term. This category also includes the Group’s derivative financial instruments that are not designated as hedging instruments in hedge accounting in terms of IAS 39.

Financial assets are designated as “at fair value through profit or loss” if they are part of a portfolio that is evaluated and managed on the basis of fair values. At reporting date, financial assets of this category did not exist.

Financial assets “at fair value through profit or loss” are recognized at fair value. Each profit or loss resulting from measurement is recognized in the financial result through profit or loss. The recognized net gain or loss also includes possible dividends and interest of the financial asset.

The fair value of financial instruments traded in active markets is determined by the market price at balance sheet date without any deduction for transaction costs. The fair value of financial instruments not traded in an active market is determined in application of appropriate measurement methods. For further details on the applied measurement methods, we refer to note 40.

Financial assets categorized as “loans and receivables” are non-derivative assets with fixed or identifiable payments that are not listed in an active market. After initial recognition, such financial assets are measured at amortized cost using the effective interest method less possible impairments in value in the scope of subsequent measurement.

Financial assets categorized as “available-for-sale financial assets” are financial instruments intended to be held for an indefinite period, which may be sold as a reaction to liquidity needs or changes of the market environment. After initial recognition, “available-for-sale financial assets” are measured at fair value in the following periods. Unrealized profits or losses are recognized in the Afs-reserve. Upon derecognising such an asset, the accumulated profit or loss is transferred to be shown on the income statement.

In consideration of IFRIC 14 and IAS 19, the Group capitalized liability insurances in the financial assets. These insurances serve as insolvency insurance with regard to early retirement obligations. Recognition is based on the insurance company's statements regarding the asset value and conducted in the amount in that the insurance value exceeds the amount of the early retirement obligations (plan asset surplus).

2.14. LIQUID FUNDS

Liquid funds include cash and cash equivalents in the form of cash in hand, bank balances and current investments made with banks that can be converted into cash contributions at any time and are subject to only marginal fluctuations in value. They are categorized as “loans and receivables” and measured at amortized cost less possible impairments in accordance with the effective interest method.

For the purpose of the cash flow statement, cash and cash equivalents include cash in hand and current deposits less utilized advances on current accounts. To the extent to that means of payment are subject to restrictions on disposal of more than three months they are shown in other financial assets.

2.15. ASSETS AND LIABILITIES HELD FOR SALE

Individual non-current assets and disposal groups of assets and liabilities are recognized as “assets held for sale” if their carrying amounts are largely realized via sales transactions as opposed to via continued usage and if, additionally, they meet the criteria set forth in IFRS 5. Regular depreciation or amortization on these assets ceases. Impairments are only recognized if the fair value less costs to sell is lower than the carrying amount. Any impairment previously recognized needs to be reversed if the fair value less costs to sell is increased later on. The addition is limited to the impairments previously recognized for the respective assets.

2.16. FINANCIAL LIABILITIES AND TRADE PAYABLES

Upon first-time recognition, financial liabilities are measured at fair value. The transaction costs directly attributable to the acquisition are also recognized with regard to all liabilities that are, subsequently, not measured at fair value through profit or loss.

Financial liabilities measured at fair value through profit or loss in subsequent recognition usually concern derivative financial instruments. We refer to note 2.17 below.

With respect to subsequent recognition, trade payables and other original financial liabilities, e.g. interest bearing loans, are measured at amortized cost in accordance with the effective interest method. Profits and losses are recognized through profit or loss if the liabilities are derecognized and in the scope of amortization by way of the effective interest method.

2.17. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING

SolarWorld group utilizes derivatives for hedging interest rate, currency exchange and commodity risks resulting from operating activities, financial transactions and investments. These financial instruments are measured at fair value through profit or loss and are classified as financial assets or liabilities held for trading if they are acquired for the purpose of selling it in the near term or not designated as hedging instruments in hedge accounting in terms of IAS 39. Profits or losses from financial assets or liabilities held for trading are recognized through profit or loss. The results are stated in other operating income or expenses to the extent to that the financial instrument was concluded for hedging purposes with regard to operating activities. Results are stated in other financial result to the extent to that the financial instrument concerns financing or investment activities.

Derivative financial instruments that are designated as hedging instruments and effective as such are categorized as current or non-current or split up in a current and a non-current part on the basis of an assessment of the facts and circumstances.

SolarWorld group applies hedge accounting provisions in accordance with IAS 39 (Hedge Accounting) to hedge future cash flows.

The decisive factor for recognition of changes in fair value – recognition on the income statement through profit or loss or recognition in equity not affecting profit or loss – is whether or not the derivative is included in an effective hedging relationship in accordance with IAS 39. If hedge accounting is not applied, changes of the derivatives' fair values are immediately recognized through profit or loss. If, however, an effective hedge relationship in terms of IAS 39 exists, the hedging relationship as such is accounted for.

At inception of the hedging relationship, the relation between hedged item and hedging instrument including the risk management objectives is documented. In addition, both at inception and in the course of the hedge, documentation is carried out continuously as to whether the designated hedging instrument is highly effective with regard to compensation of cash flow changes in the hedged item.

The effective part of the change in fair value of a derivative or a non-derivative financial instrument designated as a hedging instrument in the scope of a cash flow hedge is recognized in equity. Profit or loss falling upon the ineffective part is immediately recognized through profit or loss.

Amounts recognized in equity are transferred to the income statement in that period in which the hedged item of the cash flow hedge becomes effective through profit or loss. Recognition on the income statement occurs within the same line item in which the hedged item is recognized. If, however, a hedged forecast transaction leads to the recognition of a non-financial asset or a non-financial liability, the profits and losses previously recognized in equity are derecognized and taken into consideration at initial determination of cost of the asset or liability.

Hedge accounting is discontinued if the hedging relationship is revoked, the hedging instrument expires or is sold, terminated or exercised or is no longer appropriate for hedging purposes. All profits or losses recognized in equity at this time remain in equity and are

only accounted for through profit or loss once the forecast transaction is also recognized on the income statement. If the transaction is no longer expected to occur, the entire profit recognized in equity is immediately transferred to recognition on the income statement.

At initial recognition and in subsequent measurement, derivative financial instruments are recognized at fair value. The recognized fair values of traded derivative financial instruments equal the market prices. Derivative financial instruments that are not subject to trade are calculated using accepted measurement methods based on discounted-cash-flow-analyses and by taking recourse to current market parameters. We refer to note 40.

2.18. ACCRUED INVESTMENT GRANTS

Investment grants accounted for are accrued in application of IAS 20 and released to income over the course of the useful lives of the respective assets. Thus, the item is allocated to the periods of useful lives of the subsidized property, plant and equipment, and gradually increases future business years' pre-tax income. This increase in income occurs alongside amortization and depreciation expenses of corresponding amounts, which are, therefore, neutralized upon balancing. In addition, tax effects will arise. Here income-increasing reversals of the accrued investment grants occur income tax exempt to the extent to which they result from tax-free investment grants.

IAS 20 also applies to income from investment tax credits. Claims for tax credits are recognized if there is reasonable assurance that the material requirements for receipt are met and they are granted. The claims are measured at present value.

2.19. RETIREMENT BENEFITS

Group retirement benefits predominantly occur via defined contribution plans. The company pays contributions into a state or private pension fund on the basis of statutory or contractual obligations or on a voluntary basis and, once the contributions are paid, has no further benefit obligations. The annual contributions are recognized as personnel expenses.

Two of SolarWorld AG's subsidiaries have defined benefit plans. In one of the subsidiaries the insolvency protection is secured via the pension insurance association (Pensionsversicherungsverein). Plan assets do not exist. In the other subsidiary, there are plan assets pursuant to IAS 19. Pension provisions are measured in accordance with the projected unit credit method for defined benefit plans as required under IAS 19. The interest proportion included in the pension expenses is recognized in the item "interest and similar financial expenses".

The amount to be recognized as a liability from a defined benefit plan includes the present value of the defined benefits (using a discounted interest rate on the basis of first-class fixed-interest industrial bonds) less the yet unrecognized past service cost and the yet unrecognized actuarial losses (plus gains).

2.20. OTHER PROVISIONS

Other provisions are set up to the extent to which a current (legal or constructive) obligation to third parties exists originating from an event in the past that will probably make for a future outflow of resources and a reliable estimate can be made of the amount of the obligation. Provisions are measured at the best estimate of the extent of the obligation. Provisions for obligations that will probably not make for an outflow of resources in the year following the reporting year are recognized at present value of the expected outflow of resources. To the extent to that the Group expects at least a proportionate refund for a provision carried as liability (e.g. in case of an insurance agreement), the refund is recognized as a separate asset if the inflow of the refund is virtually certain. The expense from setting up the provision is recognized on the income statement less the refund. For further details, we refer to note 33.

If a provision cannot be set up because some criteria are not met while the possibility of a claim is all but remote, the respective obligations are recognized as contingent liabilities. In this context, we refer to note 42.

Provisions for expenses in connection with warranties are set up at the time the respective product is sold or the service is rendered. First-time recognition is conducted on the basis of estimations and assumptions. The original estimation of expenses in connection with warranties is subject to examination on a regular basis and adjustments are made especially regarding the input parameters cost structure, number of customer complaints and discount rate to reflect the current state of knowledge.

Provisions for restructuring measures are set up if a detailed formal restructuring plan is prepared and the respective parties were informed about such plan.

Provisions for restoration obligations are recognized for contractually agreed obligations and are measured with the future expected costs for restoration.

Provisions for contingent losses from onerous contracts are set up if the economic benefit expected from the contract ranges below the expenses inevitable for meeting the contract requirements.

2.21. OTHER LIABILITIES

Accrued liabilities included in the balance sheet item "other liabilities" are recognized for services and goods received and for obligations to employees that do not yet meet the requirements for payment. With regard to these liabilities, future outflow of resources is, on the merits, certain and is merely subject to minor uncertainties as regards the amount. Measurement is conducted at best estimate of the expenditure required.

If customer advances recognized in other liabilities are denominated in foreign currencies, they were recognized at historic exchange rates valid at the date of collection as the customer advances are no monetary items in terms of IAS 21.16.

2.22. REVENUE AND EXPENDITURE RECOGNITION

Income is recognized when it is probable that the economic benefit will flow to the Group and the amount of income can be reliably determined. Income is measured at fair value of the received or to be claimed payment less granted (cash) discounts and VAT or other dues.

Revenue from the sale of goods or products is recognized at the time the significant risks and rewards are transferred if – as commonly true – the other requirements (no continued involvement, reliable estimation of the amount of revenue and probability of inflow) are also met.

Revenue from project business is recognized in accordance with the percentage of completion method (PoC) set forth by IAS 11 to the extent to that the corresponding requirements are met. For customer-specific projects, a pro-rata profit realization is recognized by reference to the stage of contract completion if the assessment of the stage of contract completion, total costs and total revenue of the respective contract can be reliably estimated in terms of IAS 11. The state of completion is assessed in accordance with the cost-to-cost method pursuant to IAS 11.30 (a). If the stated requirements are met, the overall contract revenue is recognized on a pro-rata basis in compliance with the stage of completion. Contract expenses include the costs directly attributable to the contract and a proportion of overhead. To the extent to that the result of a construction contract cannot be reliably determined, project income is recognized in the amount of the connected project costs, which makes for a zero balance (zero-profit-method).

Grants related to expenses are recognized on an accrual basis through profit corresponding to the occurrence of the respective expenses.

Operating expenses are recognized when goods and services are received or at the time of their occurrence respectively. Provisions for warranties are set up upon realization of the corresponding revenue.

All financial instruments measured at amortized cost as well as interest bearing financial assets classified as available-for-sale, interest income and interest payable are recognized at effective interest rate. This is the calculation interest rate at which the estimated future incoming and outgoing payments are accurately discounted to the net carrying amount of the financial asset or the financial liability over the course of the expected maturity of the financial instrument or possibly a shorter period. Interest income or expenses are recognized on the income statement as part of interest and other financial income or interest and similar financial expenses and are recognized on an accrual basis.

2.23. TAXES

a) Current taxes on income

Current tax assets and tax liabilities for the current and earlier periods are measured at the amount that equals the expected refund from or payment to the tax authorities. The calculation of the amount is based on tax rates and tax provisions effective in the country the Group is operating in and generates taxable income at balance sheet date.

b) Deferred taxes

Deferred taxes are set up using the liability method for temporary differences between the recognition of an asset or a liability on the balance sheet and its value on the tax balance sheet at balance sheet date.

Deferred tax liabilities are recognized for all taxable temporary differences with the exemption of:

- deferred tax liabilities from the initial recognition of goodwill
- deferred tax liabilities from taxable temporary differences that are related to investments in subsidiaries, associates and interests in joint ventures if the temporal course of the reversal of the temporary differences can be steered and it is probable that the temporary differences will reverse in the near future.

Deferred tax assets are recognized for all deductible temporary differences, not yet used tax loss carryforwards and not yet used tax credits to the extent to that it is probable that taxable income will be available against which the deductible temporary differences and the not yet used tax loss carryforwards and tax credits can be offset. An exemption are deferred tax assets from deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures if it is probable that the temporary differences will not be reversed in the near future or if no sufficient taxable income will be available to set off against the temporary differences.

The carrying amount of the deferred tax assets is subject to inspection at each balance sheet date and reduced to the extent to that it is no longer probable that sufficient taxable income will be available against which the deferred tax asset may be offset at least in part. Deferred tax assets that are not recognized are subject to inspection at each balance sheet date and recognized to the extent to that it became probable that a future taxable income might enable the realization of the deferred tax asset.

Deferred tax assets and liabilities are measured at the tax rates anticipated to be valid in the period in which the asset is realized or a liability is paid. The tax rates (and tax laws) effective at balance sheet date are used as a basis. Future tax rate changes are taken into account if, in the scope of a legislative procedure, substantial prerequisites for its future applicability are met.

Deferred taxes that concern items that are not recognized on the income statement are recognized directly in equity in correspondence with the transaction they are based on.

Deferred tax assets and deferred tax liabilities are offset if the Group has a legally enforceable right to set off current tax assets against current tax liabilities and these relate to income taxes levied by the same tax authority.

c) VAT

Income, expenses and assets are recognized after VAT is deducted. The following cases are an exemption to this rule:

- If VAT incurred upon the acquisition of assets or the utilization of services cannot be claimed by the tax authority, the VAT is recognized as part of cost of the asset or part of expenses.
- Receivables and liabilities are recognized with the respective VAT amounts.

The VAT amount to be refunded by or paid to the tax authority is recognized on the balance sheet in the item "other receivables and assets" or in "other current liabilities".

COMMENTS ON THE INCOME STATEMENT

3. REVENUE

Revenue and its allocation to the business segments and regions can be taken from segment reporting (note 15) in these consolidated notes. Consolidated revenue consist of the following products and services:

in T€	2016	2015
Module- and assembly kit sales	782,339	742,958
Cells/wafers	11,593	11,555
Power generation	4,804	5,446
Other revenue	4,330	3,506
Total	803,066	763,465

At the reporting date, contrary to the prior year, no ongoing projects exist the revenue of which was accrued in accordance with the POC-method as stated in IAS 11. Accordingly, receivables and liabilities (prior year: receivables) resulting therefrom do not exist at reporting date. The chart below shows the prior year's sum of incurred contract costs and recognized profits less the amount of advances received and treated as a liability for the recognized contracts:

in T€	2015
Aggregate amount of costs incurred and recognized profits	2,958
Advances received/payments from partial billing	-1,138
Total	1,820
Receivables from construction contracts (note 24)	1,820

Other revenue primarily includes income from the operational management of solar and wind power plants, income from the sale of other primary and waste products.

4. OWN WORK CAPITALIZED

Own work capitalized mainly concerned reconstruction work of technical installations as well as work in connection with the extension of the ERP system. In the prior year it mainly reflected the implementation of a new ERP system.

5. OTHER OPERATING INCOME

in k€	2016	2015
Gains from currency translation	17,933	26,244
Income from the sale of fixed assets	10,181	408
Gains from revaluation of fixed assets	8,764	0
Income from grants for research and development	6,941	8,015
Income from other trade business	6,409	28,688
Reversal of accrued investment grants	4,076	4,949
Reversal of provisions and liabilities	2,283	22,056
Income from derivative financial instruments	1,722	53
Income relating to other periods	1,236	1,296
Income from revaluation of current assets	66	2,289
Income from deconsolidation	0	2,385
Miscellaneous other operating income	3,815	6,191
Total	63,426	102,574

Exchange rate gains are offset by exchange rate losses of € 14,954k (prior year € 19,094k) which are recognized in other operating expenses (note 9).

The income from sales of non-current assets are mainly attributable to the sale of PV plants in Freiberg and Arnstadt.

With regard to the gains from the appreciation of fixed assets, please refer to note 8.

Research and development grants received are earmarked to the specific projects they were granted for. Technical facilities resulting from these funded projects also have to be used for research purposes. Besides that, there are no other restrictions in connection with the grants received.

Other trade income primarily results from sales of commodities, supplies and merchandise that do not constitute a component of ordinary activities. These are offset by corresponding other operating expenses (note 9) in the amount of € 6,779k (prior year € 27,739k).

The income from reversal of provisions and liabilities in the prior year was primarily attributable to the reversal of warranty provisions.

6. COST OF MATERIALS

in k€	2016	2015
Cost of commodities, supplies and merchandise	533,771	486,579
Cost of purchased services	42,856	32,564
Total	576,627	519,143

7. PERSONNEL EXPENSES

in k€	2016	2015
Wages and salaries	142,392	131,799
Social security and pensions	29,458	26,190
Total	171,850	157,989

The increase in personnel expenses mainly resulted from the expansion of production in the first half of the year.

8. AMORTIZATION AND DEPRECIATION

a) Regular amortization and depreciation

The combination and classification of regular amortization and depreciation for intangible assets, property, plant and equipment and investment property of € 48,374k (prior year € 44,966k) can be taken from the fixed asset movement schedule. We refer to note 16.

b) Impairment test for property, plant and equipment and intangible assets and non-scheduled amortization and depreciation

At reporting date, the market capitalization of SolarWorld group sustainably fell short of the consolidated equity. In accordance with IAS 36.12.d, this can be understood as an indication for existing impairment requirements for all existing assets. Hence, we assessed possible impairments of all assets on the lowest possible aggregation level.

In the reporting period, there were impairments as well as reversals of impairment losses as a result of the impairment test. The impairments are mainly attributed to the worsening market situation during the second half of the year and the subsequent decision to focus operating activities.

In total, the result was an impairment of property, plant and equipment and intangible assets amounting to € 24.7 million (no impairment in prior year), whereas corresponding reversals of accrued investment grants amounted to € 1.9 million.

Reversals of impairment losses of property, plant and equipment amounted to € 8.8 million (no impairment reversals in prior year), whereas corresponding increases of accrued investment grants amounted to € 2.0 million.

The consolidated income statement shows the impairment losses in amortization and depreciation, while the impairment reversals and accrued investment grant changes are included in the other operating income.

aa) Basic assumptions for the calculation of the recoverable amount

Value in use

Aside from market and industrial trends, general expectations regarding macroeconomic developments and in-house experience, the detailed budgets of the cash-generating units (CGUs) for the first three years are based on the following substantial assumptions:

- Continuation of the trend in growth of sales
- On short-term further declining, in medium term – differentiated by markets – slightly declining sales prices
- Further increase in the efficiency levels of solar cells
- Further reduction of production costs, particularly regarding material
- Increased productivity and production capacity utilization

In consideration of the on-going continuous growth of revenue as well as, although the market situation is currently still characterized by overcapacities, an expected improvement of the market situation, an earnings level extrapolated with a growth rate of 1.0 percent on the basis of the last detailed planning year is considered in the free cash flows in the period of perpetuity.

Upon calculating value in use of the tested CGUs, the assumptions used as a basis are subject to estimation uncertainties especially with respect to:

- Gross profit margins,
- Development of prices for commodities and materials,
- Output quantity in the observation period and
- Discount interest rate (including the growth rate used as basis for the extrapolation).

GROSS PROFIT MARGINS. Gross profit margins result from the scheduled transfer and sales prices and the planned cost development. For the development of step costs, we assumed an output quantity that does not include expansion investments. In addition, we expect increases in productivity and mainly decreases in cost of materials (in part cyclical increase in commodity prices). On short term, SolarWorld AG expects a further decline of market prices for solar modules – on mid-term a slowdown of the price decline is expected, which is also addressed by SolarWorld with a shift in the product mix to high efficiency PERC modules.

DEVELOPMENT OF PRICES FOR COMMODITIES AND MATERIALS. The estimations include the published price indices for important commodities like silicon and silver. Actual past developments of commodity and material prices are used as an indicator for future price developments and - if necessary – amended by management's estimations.

ASSUMPTIONS REGARDING OUTPUT QUANTITY. For the determination of the value in use in the scope of the impairment tests, SolarWorld AG assumes an almost full utilization of production capacity in the annual periods 2017 until 2019. An increase is expected with respect to the output quantity in watt peak due to technological progress (increasing efficiency) and efficiency increase programs.

DISCOUNT RATES. The discount rates reflect current market assumptions regarding the specific risks attributable to SolarWorld AG. The discount rate was derived on the basis of the customary average weighted capital costs (WACC).

ESTIMATIONS OF THE SUSTAINED GROWTH RATE. Unchanged to the prior year, the growth rate used as a uniform basis in the phase of sustained growth amounts to 1.0 percent for all CGUs.

Fair value less costs to sell (net realisable value)

Expert's estimates of the fair value less costs to sell of real estate are based on the capitalization of future cash flows. Here, experts assumed a general commercial use, which means an abstracted view from the use up to now (production of solar modules and intermediate products). Land prices result from offer prices for properties of a comparable kind in the neighborhood. Market rents result from market rents according to use, adapted to location, size and equipment. Returns depending on location and use are based on market data considering the macro-location and micro-location as well as the age of the buildings. Costs and loss of earnings resulting from the marketing were estimated by taking the local market activity into consideration. Costs to sell under market conditions were deducted.

Expert's estimates of the fair value less costs to sell for machinery and equipment are in principle based on the comparative value method and thus on market prices, as far as prices for the same or similar assets are available. When no comparative values were available, the asset value method was applied. Value assessment then derives from replacement values less depreciation and reductions due to economic or technical excess of age.

bb) Results of impairment tests

In the reporting year, the result of the impairment test on the level of the CGUs with regard to fixed assets was as follows:

Due to the focus of operating activities to monocrystalline high-efficiency products, the former CGU „Wafer Freiberg“, which included all production facilities for ingots and wafers at the location Freiberg, was split up into a CGU “Wafer Multi”, which includes the production facilities for ingots and wafers on the basis of polycrystalline silicon technology, and a CGU “Wafer Mono”, which includes the production facilities for wafers on the basis of monocrystalline silicon technology. Both CGUs are assigned to the “Production Germany” segment.

With regard to the CGU “Wafer Multi”, an impairment loss of € 4.4 million was recognized on the net realizable value of the individual asset items. For individual assets that were already impaired in prior years, there were impairment reversals amounting to € 0.2 million due to higher net realizable values. For significant assets of the CGU, there were expert evaluations of net realizable values at hand (level 2). For the other assets, the net realizable values were determined based on these expert evaluations and company specific factors (level 3).

Looking at the full year, there was no need for impairment in the CGU “Wafer Mono”. However, increased market values of real estate led to an impairment reversal of € 3.6 million.

With regard to the CGU “Zelle Freiberg”, which is assigned to the “Production Germany” segment, an impairment loss of € 12.1 million was recognized on the net realizable value of the individual asset items. For significant assets of the CGU, there were expert

evaluations of net realizable values at hand. For the other assets, the net realizable values were determined based on these expert evaluations and company specific factors.

With regard to the CGU “CZ Wafer USA”, which produces monocrystalline ingots at the Hillsboro (Oregon, USA) site and which is part of the “Production U.S.” segment, an impairment loss of € 3.0 million was recognized on the realizable value of the individual asset items. For individual assets that were already impaired in prior years, there were impairment reversals amounting to € 0.1 million due to higher net realizable values of the individual asset items. Net realizable values assessed by an expert assessment were at hand for the substantial assets. For the other assets, the net realizable values were determined based on these expert evaluations and company specific factors.

With regard to the CGU “Modul Arnstadt”, which includes the shutdown module production at the site in Arnstadt and is assigned to the “Production Germany” segment, an impairment loss of € 1.7 million was recognized on the net realizable value of the individual asset items.

Moreover, impairment charges of € 3.5 million were recognized for individual assets. Thereof, € 1.2 million related to real estate, which is included in the “Production Germany” segment, while € 2.3 million relate to technical equipment included in the “Others” segment. Furthermore, due to increased market values, impairment reversals of € 4.9 million were recorded on real estate included in the “Production Germany” segment.

In the prior year, the impairment tests led to no impairments in any CGU.

9. OTHER OPERATING EXPENSES

in k€	2016	2015
Outside staff expenses	25,835	24,926
Selling expenses	22,098	19,738
Losses from currency translation	14,954	19,094
Maintenance expenses	13,116	16,829
Expense from additions to restructuring provision	12,320	0
Legal fees, consultancy and audit expenses	11,002	10,427
Expenses in connection with other trade business	6,779	27,739
Data processing expenses	6,617	4,983
Rent and lease expenses	4,636	3,347
Travel expenses	4,490	4,900
Marketing expenses	4,392	6,528
Expenses for insurances and fees	3,524	3,580
Other taxes	3,494	2,971
Expenses from sewage and waste disposal	3,155	3,004
Expenses for contractual penalties	2,752	76
Expenses from additions to warranty provision	2,743	1,750
Expenses relating to other periods	1,867	2,799
Bad debt allowances and losses	1,566	234
Research and development expenses (third party)	1,467	3,141
Expenses for phone, stamps and internet	1,289	1,689
Expenses from the addition to other provisions	216	60
Expenses from derivative financial instruments	64	1,192
Miscellaneous other operating expenses	17,831	17,449
Total	166,207	176,456

Exchange rate losses are offset by exchange rate gains of € 17,933k (prior year € 26,244k) which are recognized in other operating income (note 5).

Due to new challenges in the solar market, SolarWorld decided in the fourth quarter 2016 to strategically realign the business model by implementing a clear focus and streamlining in technology, production activities and the product portfolio. For the implementation of these focus measures, SolarWorld recognized a provision of € 12,320k. We also refer to our comments in note 33.

Rent and lease expenses include minimum lease payments from operating lease agreements in an amount of € 3,979k (prior year € 1,561k).

Expenses relating to other periods include an expense of € 1,200k regarding an insolvency contesting of customer payments received in the years 2011 and 2012. In the prior year, it mainly included a value adjustment on claims from electricity tax refunds according to the German Electricity Tax Act in amount of € 1,539k.

The expense from contractual penalties primarily regards compensation for damages due to lower purchases than contractually agreed.

10. RESEARCH AND DEVELOPMENT EXPENSES

Research and development costs of SolarWorld group were accounted for a total of € 26,018k (prior year € 23,339k) in the reporting period.

11. FINANCIAL RESULT

a) Result from investments measured at equity

in k€	2016	2015
Expenses from investments measured at equity	-897	-12,877
Total	-897	-12,877

In the reporting year, expenses from investments measured at equity concern Qatar Solar Technologies Q.S.C. In the prior year, for a one month period, it also concerned Auermühle. The result is positively influenced by one-off effects in the attributable amount of € 10 million in connection with a business combination (badwill) as well as with the derecognition of liabilities.

b) Interest and similar income

in k€	2016	2015
Interest income	57	77
Other financial income	9	51
Total	66	128

Income from interest includes interest from interest-bearing securities, fixed term deposits and other bank balances categorized as “loans and receivables”.

c) Interest and similar expenses

in k€	2016	2015
Interest expenses	33,099	27,568
Other financial expenses	846	1,119
Total	33,945	28,687

Interest expenses exclusively consist of interest payable for financial liabilities categorized as “measured at amortized cost”. The increase in 2016 results from the partial use of a contractual right to postpone the interest payments to the maturity date of the financial liabilities while increasing the interest rate.

As in the prior year, borrowing costs eligible for capitalization leading to a reduction of interest expenses do not exist.

d) Other financial result

in k€	2016	2015
Net gains and losses from financial assets and financial liabilities designated as measured at fair value	0	-598
Gains/losses from currency translation	302	1,340
Total	302	742

In the prior year, the net result of the category “designated at fair value through profit or loss” was not influenced by changes of the credit risk.

Derivatives that are part of a hedging relationship are not taken into account when it comes to the presentation of net gains and losses.

12. INCOME TAXES

The following chart shows the composition of recognized tax expenses and income:

in k€	2016	2015
Actual domestic tax income (-)/expenses (+)	306	-15
Actual foreign tax expenses	2,431	759
Total actual tax expenses	2,737	744
Deferred domestic tax income (-)/expenses (+)	-44,040	-12,139
Deferred foreign tax income/expenses	-77	-168
Total deferred tax income/expenses	-44,117	-12,307
Total recognized tax result	-41,380	-11,563

Taxes paid or owed on income in the individual countries as well as deferred taxes are recognized as taxes on income.

Both in the reporting period and in prior years, tax losses were incurred by some of the group entities. IAS 12 sets high standards when it comes to recognizing deferred taxes on loss carryforwards if there is a recent loss history. These requirements were not met at reporting date. Thus, as in the prior year, no deferred tax assets were set up with regard to loss carryforwards in 2016 for the largest part.

In regard to the determination of existing tax loss carryforwards of the SolarWorld AG tax group, there are substantial legal uncertainties from the year 2014. The amount is significantly dependent on the tax treatment of the debt to equity swap executed in 2014 and the resulting remaining income after the offset with tax loss carryforwards per December 31, 2013 and its intrayear offsetting against the 2014 result. Therefore, it cannot be ruled out that the corporate and trade tax loss carryforwards per December 31, 2016 are considerably lower than described below. In consideration of corporate and trade tax loss carryforwards per December 31, 2013 and the tax results for the years 2014 to 2016 as determined by the company, the corporate tax loss carryforwards per December 31, 2016 amount to € 165 million (prior year € 146 million) and the trade tax loss carryforwards amount to € 236 million (prior year € 224 million). The loss carry forwards of the German fiscal unity are generally not subject to expiration.

With regard to "Federal tax", the tax loss carryforwards of the U.S. entities amount to an equivalent of some € 695 million (prior year € 639 million). They can be offset with tax gains until at least 2024 and will then gradually be forfeited in the years 2025 to 2036. These loss carryforwards represent some € 216 million (prior year € 198 million) in deferred tax assets. With regard to "State tax", the tax loss carryforwards amount to some € 684 million (prior year € 581 million) and allocate to the Federal states of California € 291 million (prior year € 242 million), Oregon € 355 million (prior year € 307 million) and other states € 38.4 million (prior year € 32.3 million). In California, they can be offset with tax gains until at least 2018. An amount of roughly € 40 million (prior year € 38 million) will then gradually be forfeited in the years 2019 to 2021. The remaining € 251 million (prior year € 204 million) will forfeit in the years 2031 until 2036. In Oregon, the loss carryforwards will gradually be forfeited starting in 2022. In the other states, the loss carryforwards of € 38.4 million (prior year € 32.3 million) will be forfeited starting in 2025. Overall, deferred tax assets of some € 54 million (prior year € 48 million) are attributable to these loss carryforwards.

The following chart shows non-netted and netted deferred tax assets and liabilities with regard to accounting differences in the different balance sheet items and tax loss carryforwards:

in k€	Deferred tax assets		Deferred tax liabilities	
	Dec 31, 16	Dec 31, 15	Dec 31, 16	Dec 31, 15
Intangible assets and property, plant and equipment	88,956	96,985	19,690	23,031
Other non-current assets	0	0	14,080	17,285
Current assets	8,627	6,089	4,356	2,141
Assets held for sale	65	156	847	250
Accrued investment grants	410	666	405	489
Other non-current liabilities	4,785	3,601	1	28,500
Current liabilities	15,263	12,218	2,602	2,351
Tax loss carryforwards	99	159	0	0
Allowances on deferred tax assets	-76,434	-93,622	0	0
Total	41,771	26,252	41,981	74,047
Offsetting	-41,509	-23,980	-41,509	-23,980
Recognized deferred taxes	262	2,272	472	50,067

At reporting date, as in the prior year no deferred tax assets and no deferred tax liabilities were recognized in equity due to the lack of hedging relationships.

As in the prior year, no deferred tax liabilities for temporary differences in connection with investments in subsidiaries or associates in accordance with IAS 12.39 were recognized per December 31, 2016. The corresponding temporary differences make for a total of € 12,035k (prior year € 11,945k).

The substantial differences between nominal and effective tax rates in the course of the reporting year and the prior year are illustrated below:

in k€	2016	2015
Result before taxes	-133,317	-44,845
Expected income tax rate (incl. trade tax)	30.0%	30.0%
Expected result from income tax	-39,995	-13,454
Deviating domestic and foreign tax burden	-2,359	948
Actual taxes relating to other periods	1,604	158
Taxes from non-deductible expenses	1,439	1,233
Tax reductions due to tax-exempt income	-877	-1,699
Effect from gain resulting from a business combination (badwill)	0	58
Utilization of deferred tax assets impaired in previous years	-15,609	-3,301
Allowances on deferred tax assets	14,431	-621
Other deviations of tax expenses	-13	5,114
Recognized income tax result	-41,380	-11,563
Effective income tax rate	31.0%	25.8%

13. EARNINGS PER SHARE

Earnings per share are calculated as ratio of the consolidated net result and the weighted average of the number of shares in circulation during the business year. As in the prior year, the key figure “diluted earnings per share” was not applicable as option rights or conversion privileges are not outstanding. The consolidated result for the year results exclusively from continued operations. The weighted average of the shares in circulation used as a basis for the determination of earnings per share amounts to 14,896,000, as in the prior year.

14. STATEMENT OF COMPREHENSIVE INCOME

SolarWorld group decided to present all items of income and expense recognized in a period in two statements, a separate income statement and a statement of comprehensive income. The statement of comprehensive income directly follows the income statement.

Since the amounts that were re-classified from equity to result of the period or allocated to cost of non-financial assets and the profits and losses not shown through profit or loss including any tax effects are presented in the statement of comprehensive income, no further disclosures are required at this point.

15. SEGMENT REPORTING

a) Segment disclosures

The presentation of segment reporting follows the “full management approach”. As in the prior year, the following reportable segments were identified:

- Production Germany,
- Production U.S.,
- Trade.

This is due to SolarWorld AG’s prevailing internal organization, reporting and steering structure that focuses on the production and distribution of solar systems and solar modules. The greater objective of the Group is to increase the existing synergy and efficiency potentials of the entire value added chain and thus achieve strategic competitive advantages for the marketing of solar systems.

For the purpose of the segment reporting the operating segments “Production Freiberg” and “Production Arnstadt” have been aggregated to form the aforementioned reportable operating segment “Production Germany”. Each of the two production segments combines regionally related and fully integrated manufacturing activities in Germany and the U.S. and each include the manufacturing areas of the entire value added chain.

The operating segment “Trade” comprises the worldwide distribution of solar systems and solar modules, the sale of wafers and cells and the operations of Solarparc GmbH.

The category "Other" includes various business activities of the Group that does in principal not materially affect the Group's financial position and financial performance.

As in the prior year, the accounting principles applicable for the consolidated entity also apply for the individual segments.

INFORMATION ON OPERATING SEGMENTS FOR THE REPORTING PERIOD 2016

in m€	Production Germany	Production U.S.	Trade	Other	Reconciliation	Consolidated
Revenue						
External revenue	5	1	795	2	0	803
Inter-segment revenue	511	277	51	1	-840	0
Total revenue	516	278	846	3	-840	803
EBITDA	19	3	-68	16	4	-26
Scheduled depreciation	-26	-12	-5	-5	0	-48
Impairment charges	-19	-3	0	-3	0	-25
Operating result (EBIT)	-26	-12	-73	8	4	-99
Financial result						-34
Result before taxes on income						-133
Taxes on income						41
Result from continued operations						-92
Consolidated net result						-92
Material non-cash income	13	1	1	0		15
Other material non-cash expenses	-15	-2	-15	-2		-34

INFORMATION ON OPERATING SEGMENTS FOR THE REPORTING PERIOD 2015

in m€	Production Germany	Production U.S.	Trade	Other	Reconciliation	Consolidated
Revenue						
External revenue	6	2	755	0	0	763
Inter-segment revenue	436	240	138	2	-816	0
Total revenue	442	242	893	2	-816	763
EBITDA	11	9	9	9	3	41
Scheduled depreciation	-26	-11	-2	-6	0	-45
Operating result (EBIT)	-15	-2	7	3	3	-4
Financial result						-41
Result before taxes on income						-45
Taxes on income						12
Result from continued operations						-33
Consolidated net result						-33
Material non-cash income	9	6	13	3		31
Material non-cash expenses	-2	-2	-1	0		-5

With regard to inter-segment revenue, the reconciliation column includes eliminations from expense and income consolidation.

Reconciliation of the balance of the segment results to the consolidated result is mainly attributable to intra-group profit elimination and other immaterial consolidation entries affecting profit or loss.

Revenue of the category “Other” in an amount of € 3 million (prior year € 2 million) primarily includes intra-group income from the rental of PV installations, as well as external electricity sales. The positive EBIT in this segment substantially results from the sale of a PV plant.

The material non-cash income includes the income from reversal of provisions and liabilities, the income from revaluation of current assets (Production Germany € 8.7 million; Production U.S. €

0.1 million) and reversals of accrued investment grants. The prior year’s figure also included an income from deconsolidation. The material non-cash expenses primarily comprise value adjustments on inventories and receivables

b) Disclosures on group level

With respect to the breakdown of revenue in accordance with products, we refer to the information provided in note 3.

No external customer accounts for more than 10 percent of Solar-World group’s revenue.

Allocation of revenue to individual countries or regions is carried out on the basis of invoicing. Revenue is considered generated in the country in which the addressee of the invoice is domiciled.

in m€	Revenue		Intangible assets, property, plant and equipment	
	2016	2015	Dec 31, 16	Dec 31, 15
Germany	119	133	219	256
Rest of Europe	182	170	0	0
Asia	56	36	0	0
U.S.	406	394	80	87
Others	40	30	0	0
Total	803	763	299	343

COMMENTS ON THE CONSOLIDATED BALANCE SHEET

16. DEVELOPMENT OF INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT

Composition and development of intangible assets, property, plant and equipment can be taken from the following chart:

in k€	Cost							As at Dec 31, 16
	As at Jan 1, 16	Reclassifications	Addition	Reclassifications to assets held for sale	Disposal	Currency difference	Changes in scope of consolidation	
I. Intangible assets								
1. Concessions, industrial property and similar rights and assets as well as licenses in such rights and assets	46,067	1,081	3,793	37	585	212	0	50,531
2. Goodwill	39,524	0	0	0	0	0	0	39,524
3. Exploration and evaluation	1,902	0	9	1,911	0	0	0	0
4. Prepayments	1,063	-1,043	1,657	157	-156	0	0	1,676
	88,556	38	5,459	2,105	429	212	0	91,731
II. Property, plant and equipment								
1. Land and buildings	415,335	2,660	1,973	0	2	4,316	0	424,282
2. Technical equipment and machinery	945,366	13,696	24,748	11,297	39,099	12,472	0	945,886
3. Other equipment, factory and office equipment	35,227	133	1,381	0	799	213	0	36,155
4. Construction in progress and prepayments	20,651	-16,527	3,132	0	164	551	0	7,643
	1,416,579	-38	31,234	11,297	40,064	17,552	0	1,413,966
	1,505,135	0	36,693	13,402	40,493	17,764	0	1,505,697

in k€	Cost							As at Dec 31, 15
	As at Jan 1, 15	Reclassifications	Addition	Reclassifications to assets held for sale	Disposal	Currency difference	Changes in scope of consolidation	
I. Intangible assets								
1. Concessions, industrial property and similar rights and assets as well as licenses in such rights and assets	32,620	5,729	11,003	0	3,978	693	0	46,067
2. Goodwill	39,524	0	0	0	0	0	0	39,524
3. Exploration and evaluation	1,862	0	40	0	0	0	0	1,902
4. Prepayments	5,834	-5,729	1,063	0	105	0	0	1,063
	79,840	0	12,106	0	4,083	693	0	88,556
II. Property, plant and equipment								
1. Land and buildings	425,214	785	818	0	3,248	14,193	22,427	415,335
2. Technical equipment and machinery	1,000,068	2,391	16,394	0	113,545	41,972	1,914	945,366
3. Other equipment, factory and office equipment	35,086	159	1,644	0	1,950	570	282	35,227
4. Construction in progress and prepayments	10,648	-9,722	19,756	0	42	771	760	20,651
	1,471,016	-6,387	38,612	0	118,785	57,506	25,383	1,416,579
III. Investment property	16,245	6,387	5	0	0	0	22,637	0
	1,567,101	0	50,723	0	122,868	58,199	48,020	1,505,135

Amortization and depreciation								Carrying amounts		
As at Jan 1, 16	Reclassifications	Scheduled additions	Impairment charges	Impairment reversals	Reclassifications to assets held for sale	Disposal	Currency difference	As at Dec 31, 16	As at Dec 31, 16	As at Dec 31, 15
25,731	0	5,399	34	0	37	406	216	30,937	19,594	20,336
39,524	0	0	0	0	0	0	0	39,524	0	0
0	0	0	0	0	0	0	0	0	0	1,902
0	0	0	0	0	0	0	0	0	1,676	1,063
65,255	0	5,399	34	0	37	406	216	70,461	21,270	23,301
278,159	0	6,007	3,928	8,479	0	1	3,476	283,090	141,192	137,176
786,074	0	34,916	19,966	289	4,816	29,059	11,734	818,526	127,360	159,292
28,397	0	2,052	166	0	0	773	198	30,040	6,115	6,830
4,124	0	0	598	0	0	0	130	4,852	2,791	16,527
1,096,754	0	42,975	24,658	8,768	4,816	29,833	15,538	1,136,508	277,458	319,825
1,162,009	0	48,374	24,692	8,768	4,853	30,239	15,754	1,206,969	298,728	343,126

Amortization and depreciation								Carrying amounts		
As at Jan 1, 15	Reclassifications	Scheduled additions	Impairment charges	Reclassifications to assets held for sale	Disposal	Currency difference	Changes in scope of consolidation	As at Dec 31, 15	As at Dec 31, 15	As at Dec 31, 14
26,411	0	2,668	0	0	3,977	629	0	25,731	20,336	6,209
39,524	0	0	0	0	0	0	0	39,524	0	0
0	0	0	0	0	0	0	0	0	1,902	1,862
105	0	0	0	0	105	0	0	0	1,063	5,729
66,040	0	2,668	0	0	4,082	629	0	65,255	23,301	13,800
266,417	0	6,152	0	0	3,118	11,164	2,456	278,159	137,176	158,797
828,208	239	33,493	0	0	112,296	37,121	691	786,074	159,292	171,860
27,924	-239	2,224	0	0	1,856	503	159	28,397	6,830	7,162
3,732	0	0	0	0	0	392	0	4,124	16,527	6,916
1,126,281	0	41,869	0	0	117,270	49,180	3,306	1,096,754	319,825	344,735
1,450	0	429	0	0	0	0	1,879	0	0	14,795
1,193,771	0	44,966	0	0	121,352	49,809	5,185	1,162,009	343,126	373,330

The changes in scope of consolidation shown in the prior year resulted from the deconsolidation of SolarWorld AG & Solar Holding GmbH in GbR Auermühle as of November 30, 2015.

17. INTANGIBLE ASSETS

The line item "Exploration and evaluation" amounting to € 1,902k included in intangible assets in the prior year were reclassified to "assets held for sale" in the financial year. No self-generated intangible assets were capitalized.

18. PROPERTY, PLANT AND EQUIPMENT

With respect to development and composition of property, plant and equipment please refer to the asset movement schedule in note 16.

Leases in accordance with IAS 17 that would lead to capitalization of an asset do not exist.

19. INVESTMENTS MEASURED AT EQUITY

in k€	Dec 31, 16	Dec 31, 15
Qatar Solar Technologies Q.S.C. (29 %)	8,174	8,986

SolarWorld AG holds a 29 percent investment in the assets and results of Qatar Solar Technologies Q.S.C. domiciled in the Emirate Qatar. Together with Qatar Foundation and Qatar Development Bank, SolarWorld AG is constructing a production facility for polysilicon.

With regard to related party disclosures we refer to note 43.

The following chart includes summarized financial information regarding the investment measured at equity.

in k€	2016		2015	
	Total	SolarWorld group's share	Total	SolarWorld group's share
Assets	1,583,594	459,242	1,306,783	378,967
Of which current	112,038	32,491	74,096	21,488
included 'cash and cash equivalents'	83,834	24,312	57,292	16,615
Of which non-current	1,471,556	426,751	1,232,687	357,479
Liabilities	1,553,732	450,583	1,286,108	372,971
Of which current	140,933	40,871	102,658	29,771
Of which non-current	1,412,799	409,712	1,183,450	343,201
included 'non-current financial liabilities'	0	0	0	0
Net assets	29,862	8,659	20,675	5,996
Equity contribution	0	0	11,984	3,475
Others		-485		-485
Carrying amount of the investment		8,174		8,986
Revenue	15	4	668	194
Interest income	6,542	1,897	4,370	1,267
Interest expenses	-2,931	-850	-2,029	-589
Share in net result for the year	-24,868	-7,212	-40,502	-11,746
Other comprehensive result	21,775	6,315	0	0
Total comprehensive result	-3,093	-897	-40,502	-11,746

20. OTHER NON-CURRENT FINANCIAL ASSETS

As in the previous year, other financial assets contain the non-current portion of the receivable in the amount of € 3,000k from the acquisition of a large part of the production lines and other assets from Bosch Solar Energy AG by SolarWorld in 2014.

21. DEFERRED TAX ASSETS

Deferred tax assets result from accounting policies for recognition and measurement of assets and liabilities that differ from tax principles and current loss carryforwards. The development of deferred tax assets is included in the comments on tax expenses (note 12).

22. OTHER NON-CURRENT ASSETS

In prior year, this item mainly concerned the non-current portion of prepayments made on raw materials. At the end of the current reporting period, there are no more non-current prepayments, so that only prepaid expenses remain in this balance sheet item.

23. INVENTORIES

in k€	Dec 31, 16	Dec 31, 15
Finished goods and merchandise	83,555	61,583
Work in progress	55,580	54,185
Commodities and supplies	34,769	40,358
Prepayments (current)	11,789	15,437
Total	185,693	171,563

For the purpose of the breakdown above, only solar modules were qualified as finished goods of the Group.

In the reporting year, inventory impairments of € 19,673k (prior year € 3,804k) were recognized as expenses. Other than in the prior year, no reversals of impairment losses (prior year € 2,289k) were recorded in the reporting period.

Almost all inventory items are assigned by way of collateral for the credit facilities and notes. Please refer to our comments under note 31.

24. TRADE RECEIVABLES

Trade receivables amounting to € 52,727k (prior year € 94,700k) are assigned as collateral for loan obligations.

in k€	Dec 31, 16	Dec 31, 15
Trade receivables	55,032	95,582
Receivables from construction contracts	0	1,820
Total	55,032	97,402

The following chart illustrates the aging structure of receivables:

in k€	Dec 31, 16	Dec 31, 15
Neither past due nor impaired	36,552	69,197
Past due but not impaired		
- up to 30 days	9,012	15,103
- between 31 and 60 days	1,922	4,465
- between 61 and 90 days	534	2,286
- between 91 and 180 days	88	1,248
- between 181 and 360 days	5,280	310
- exceeding 360 days	479	4,650
Impaired	1,165	143
Total	55,032	97,402

With regard to trade receivables that were not impaired, an indication for the recognition of impairment losses did not exist or impairment losses did not have to be recognized due to existing collaterals. The receivables included in the „between 1 and 90 days“ cluster were almost completely redeemed within the preparation period of the consolidated financial statements. The receivables included in the "between 181 and 360 days" cluster result relate to sales for a project that was delayed. For this receivable, SolarWorld has securities in terms of a downpayment and reservation of title regulations.

The following chart illustrates the development of the bad debt allowance:

in k€	2016	2015
As at Jan 1	3,398	18,943
Utilization	-327	-15,820
Net release/allocation	1,597	208
Currency translation	13	67
As at Dec 31	4,681	3,398

25. INCOME TAX ASSETS

Tax assets of € 120k (prior year € 187k) are especially due to corporate tax loss carrybacks. In the prior year, the item primarily included creditable investment income tax.

26. OTHER RECEIVABLES AND ASSETS

in k€	Dec 31, 16	Dec 31, 15
VAT receivables	6,318	7,452
Deferred items	2,785	2,495
Receivables from research and development investment subsidies	2,308	1,578
Electricity tax refund	1,426	2,664
Other prepayments	2,057	412
Other	1,791	2,909
Total	16,685	17,510

Unsettled receivables from electricity tax refunds result from the German Electricity Tax Act.

27. OTHER CURRENT FINANCIAL ASSETS

in k€	Dec 31, 16	Dec 31, 15
Sub-participation Solarparks of Extremadura S.L., Spain	13,834	13,834
Liquid funds subject to restrictions on use	6,120	0
Security deposits	1,644	2,202
Claim from debt assumption	0	6,439
Receivable from negative purchase price	0	2,200
Other financial assets	261	178
Total	21,859	24,853

The sub-investment in Solarparks of Extremadura S.L., Spain, results from a cooperation agreement with a wholly owned subsidiary of Deutsche Bank AG (DB), in which DB grants Solarparc GmbH the right to participate in the result from marketing or alternatively the operation of solar parks in Extremadura (Spain). The recognized carrying amount of the sub-investment offsets an amount payable to DB of € 12,667k (compare note 31), which DB can claim at any time.

Bank balances subject to restrictions on use serve as collateral for received bank guarantees.

The claim from debt assumption shown in prior year concerned a bank loan from SolarWorld AG & Solar Holding GmbH in GbR Auermühle, which was attributable to the purchaser of the Auermühle property.

28. LIQUID FUNDS

Liquid funds almost entirely concern bank balances. At reporting date, these were invested in fixed term deposits and day-to-day money with different banks. Bank accounts with a credit balance of € 86 million (prior year € 166 million) are subject to pledge agreements.

29. ASSETS HELD FOR SALE

At reporting date, assets held for sale mainly include various PV installations as well as the capitalized exploration and evaluation expenses in regard to SolarWorlds lithium activities. Assets held for sale were subject to an appreciation of €66k (prior year € 0k) and a write-down of € 432k (prior year € 0k) in the reporting period, which are included under other operating income and the other expenses, respectively. The background of the planned sales is the disposal of non-operating assets. The assets held for sale are mainly included in the segment “Others”.

30. EQUITY

a) Subscribed capital

At reporting date, the capital stock amounts to € 14,896k (prior year € 14,896k) and similar to the prior year solely includes common shares, namely 14,896,000 non-par bearer shares.

b) Authorized capital

At SolarWorld AG's first Annual General Meeting since the completion of financial restructuring that was held on May 30, 2014, shareholders authorized the Management Board to increase the company's capital stock by to a maximum total of € 7,448,000.00 once or several times in accordance with the Supervisory Board until May 30, 2019 by issuing new, no-par bearer shares or registered shares in exchange for cash contributions or contributions in kind. The aim is to enable a flexible and rapid response to market conditions in the future while minimizing the negative impact on the company's share price.

c) Conditional capital

SolarWorld AG does not have any conditional capital.

d) Other reserves

Currency translation reserve

The currency translation reserve contains differences arising from currency translation in the scope of translating annual financial statements of foreign subsidiaries.

e) Dividend distribution

No dividend was distributed for 2015.

31. NON-CURRENT AND CURRENT FINANCIAL LIABILITIES

in k€	Dec 31, 16	Dec 31, 15
Bonds	178,696	185,577
Senior Facility Agreement	131,038	142,186
Super Senior Facility Agreement	50,836	50,309
Loan Qatar Solar S.P.C.	12,898	0
Payment obligation sub-investment Solarparks of Extremadura S.L., Spain	12,667	12,667
Deposits from toll manufacturers	3,903	5,309
Bank loans	0	7,748
Derivative financial instruments	0	765
Other	438	1,288
Total	390,476	405,849

Since the financial restructuring in 2014 the financial liabilities consist of two publicly-traded bonds and a senior credit facility (Senior Facility Agreement or short SFA). In addition, SolarWorld took out a Super Senior credit facility (Super Senior Facility Agreement or short SSFA) from Qatar Solar Technologies Q.S.C. in the scope of the financial restructuring process as well.

At the reporting date, the SSFA is shown in the current section, as the formal requirements for a disclosure in the non-current section were not yet met at the reporting date due to the non-compliance with specific financial covenants. At the time of the preparation of these financial statements, the requirements are met, so that the disclosure can again be done in the non-current section in the future. We also refer to our comments regarding liquidity risks in note 40 e).

In connection with these financial liabilities, SolarWorld AG and its affiliates SolarWorld Industries Sachsen GmbH, SolarWorld Industries Thüringen GmbH, SolarWorld Innovations GmbH, SolarWorld Industries Deutschland GmbH, Solarparc Ziegelscheune GmbH, Solarparc GmbH, SolarWorld Americas Inc., SolarWorld Industries America LP, SolarWorld France SAS and SolarWorld Asia Pacific PTE Ltd. provided all their material assets as transaction collaterals. In detail, this concerns the pledging of all current and future receivables, bank accounts, inventories, moveable fixed assets and current assets, IP-rights and Internet domains. In addition, all shares in subsidiaries were pledged.

The Qatar Solar S.P.C. loan was granted in connection with the financial restructuring for the settlement of capital increases called for by Qatar Solar Technologies Q.S.C. In the prior year, this capital increase obligation was shown in note 34 as other current liability. The corresponding shares of Qatar Solar Technologies Q.S.C. serve as a security for this loan.

The payment obligation for the sub-investment Solarparks of Extremadura S.L., Spain, is connected with the sub-investment in Solarparks of Extremadura S.L., Spain, recognized in other financial assets. We refer to our comments in note 27.

Deposits from toll manufacturers are payments received from toll manufacturers at balance sheet date regarding SolarWorld products that are to be processed and will be returned after complete processing.

33. NON-CURRENT AND CURRENT PROVISIONS

in k€	As at Jan 1, 16	Utilization	Reversal	Addition	Currency translation	As at Dec 31, 16
Warranties	13,809	526	215	3,026	153	16,247
Restructuring	0	0	0	12,320	0	12,320
Pensions	9,359	449	36	987	0	9,861
Litigation risks	5,069	661	217	954	94	5,239
Take-back obligations	1,602	0	0	212	0	1,814
Restoration obligations	235	70	0	0	5	170
Other provisions	281	71	17	671	5	869
Total	30,355	1,777	485	18,170	257	46,520

The provision for warranties is set up for specific individual risks, for the general risk of being called upon in accordance to statutory warranty regulations and performance guarantees granted with regard to photovoltaic modules sold. The allocation to the provision for the risk of being called upon for performance guarantees is made on the basis of the estimation of the discounted total expenses over the entire term of the performance guarantee (performance guarantee is granted for a period of 25 to 30 years). The provision is subject to compounding at a matched maturity interest rate. In the reporting period, this made for interest expenses of € 290k (prior year € 609k), which are included in other financial expenses (compare note 11.) The change of interest rate led to a further expense of € 1.296k, which is included in the other operating expenses.

Changes in the used discount rate would have an impact on the total provision amount, which would be recognized in profit or loss.

32. ACCRUED INVESTMENT GRANTS

The item includes accrued investment subsidies and investment grants as well as accrued tax credits, even to the extent to which they are to be reversed in the course of the following year because they exclusively concern property, plant and equipment.

The investment subsidies and investment grants are subject to a commitment period in which the subsidized assets need to be part of the business. This period has not yet ended for parts of the subsidized assets.

If the discount rate would increase by 100 basis points, the provision for performance guarantees would decline by € 1.8 million. If the discount rate would decrease by 100 basis points, the provision for performance guarantees would rise by € 2.2 million.

Due to new challenges in the solar market, SolarWorld decided in the fourth quarter 2016 to strategically refine its business model by implementing an explicit focus and streamlining for the technology, the production activities and the product portfolio. After the announcement of this plan, the group recorded a provision of € 12,320k for the implementation of focusing measures, which include consulting expenses as well as employee benefits in regard to the termination of employment contracts. The use of this provision is expected to take place in the financial years 2017 and 2018; the material part will be used in the financial year 2017.

As in the prior year, provisions for litigation risks primarily include claims for damages in connection with pending legal proceedings with current and former employees in the U.S. on account of alleged violations of labor law regulations and the risk of possible tax payments from ongoing tax field audits.

The provision for take-back obligations is in connection with disposal obligations for PV modules. It is subject to compounding at matched maturity interest rate. In the reporting period, this makes for interest income of € 3k (prior year interest expenses of € 221k), which are included in other financial income (compare note 11.)

The provision for restoration obligations mainly concerns leasehold improvements that have to be removed by SolarWorld group after expiration of the lease term. As in the prior year that provision is fully current in the reporting period.

PENSION PROVISIONS

Pension provisions include promises of retirement benefits to employees of the Group on the basis of direct commitment. The pension claims earned depend on the amount of pay at the time of retirement.

The following measurement parameters were uniformly used as a basis for calculating the defined benefit obligation (DBO):

in %	Dec 31, 16	Dec 31, 15
Discount rate	1.41	2.06
Future salary increase	3.0	3.0
Rate of pension progression	1.5	1.5 to 1.75

The Heubeck standard tables RT 2005 G were used with regard to mortality and invalidity.

The amount included in the consolidated financial statements arising from defined benefit obligation is as follows:

in k€	Dec 31, 16	Dec 31, 15
Present value of defined benefit obligation	9,926	9,466
Fair value of plan assets	-65	-107
Pension provision	9,861	9,359

Movements in the present value of the defined benefit obligation in the current year were as follows:

in k€	2016	2015
Extent of obligation as at Jan 1	9,466	10,848
Interest cost	193	176
Current service cost	12	19
Pension payments and other utilizations	-571	-437
Transfers	0	-270
Gains (-) and losses (+) from the remeasurement:		
- Actuarial gains/losses due to changes in the financial assumptions	782	-571
- Actuarial gains/losses from experience adjustments	44	-299
Extent of obligation as at Dec 31	9,926	9,466

Movements in the fair value of the plan assets in the current year were as follows:

in k€	2016	2015
Opening balance as at Jan 1	107	144
Contributions from the employer	0	55
Transfer of plan asset (portability)	-42	-92
Interest income	0	3
Gains (+) and losses (-) from the remeasurement:		
- Actuarial losses from experience adjustments	0	-3
Closing balance as at Dec 31	65	107

The plan assets have been deposited in cash into an appropriate Contractual Trust Arrangement.

Alternative discount rates and rates of pension progression would result in the following changes in the defined benefit obligation and the corresponding reverse changes in equity (before taking into account deferred tax effects):

Measurement parameter in k€	Sensitivity	Change in the DBO 2016		Change in the DBO 2015	
Discount rate	+/- 1.00%	-1,161	1,435	-1,100	1,355
Rate of pension progression	+/- 0.50%	575	-711	529	-487

In 2017, the Group expects contributions to its defined benefit plans of € 139k.

DEFINED CONTRIBUTION PLANS

The Group also maintains domestic and foreign pension plans through state or private pension funds. Amounts contributed by the Group under such plans are based upon the employees' salary or the amount of contributions made by the employees. In 2015, the employer's contribution to statutory pension insurance schemes amounted to € 10.4 million (prior year € 9.6 million). In addition, there were a further € 1.6 million (prior year € 1.2 million) expenses for contributions to private pension funds.

34. OTHER NON-CURRENT AND CURRENT LIABILITIES

in k€	Dec 31, 16	Dec 31, 15
Customer advances	19,860	13,983
Other personnel obligations	12,797	12,376
Outstanding invoices	8,448	16,388
Property tax (U.S.)	2,589	148
VAT	847	5,251
Creditors with debit accounts	742	1,865
Equity contribution obligation	0	11,984
Other	7,912	8,475
Total	53,195	70,470

Customer advances mainly concern advances from long-term wafer purchase agreements and, additionally in the reporting period, from the module business.

Other personnel liabilities substantially consist of variable compensation claims of employees, outstanding wages and salaries and holiday entitlements.

The claimed obligation to contribute equity in the previous year concerned capital increases called for by Qatar Solar Technologies Q.S.C. that were based on a corresponding shareholder agreement. According to the agreements from the financial restructuring, both obligations claimed were paid by Qatar Solar S.P.C. in the first half of 2016 and granted to SolarWorld AG as a loan. Thus, it is disclosed under non-current financial liabilities in the reporting period. We refer to our comments in notes 19 and 31.

35. DEFERRED TAX LIABILITIES

Deferred tax liabilities entirely result from accounting policies for recognition and measurement of assets and liabilities that differ from tax principles. The item's development is included in the comments on tax expenses (note 12).

36. INCOME TAX LIABILITIES

The item includes corporation, trade and capital yields tax assessed by the tax authorities and calculated or estimated by the consolidated entities as well as corresponding foreign taxes resulting from tax laws.

37. LIABILITIES RELATED TO ASSETS HELD FOR SALE

The liabilities related to assets held for sale at balance date are in connection with PV installations for sale and with the capitalized exploration and evaluation expenses in regard to lithium activities.

OTHER DISCLOSURES

38. OTHER FINANCIAL LIABILITIES

in m€	Dec 31, 16	Dec 31, 15
Order commitments from commodity and license agreements		
- within one year	71	106
- between 1 and 5 years	42	64
- more than 5 years	41	43
Order commitments from investments in fixed assets		
- within one year	13	7
- between 1 and 5 years	0	0
- more than 5 years	0	0
Obligations from perennial rent agreements		
- within one year	4	4
- between 1 and 5 years	9	10
- more than 5 years	14	16
Total	194	250

The obligations from multi-year rental agreements mostly concern office buildings and vehicles. The remaining terms of the lease agreements for buildings run from 3 to 14 years, while the terms of the lease agreements for vehicles run from 3 to 4 years. The lease agreements for vehicles do not include any significant purchase or extension options. One lease agreement for a building includes the option to extend the contract twice by five years each. The contracts do not impose any restrictions on SolarWorld AG.

39. CONTINGENCIES AND EVENTS AFTER BALANCE SHEET DATE

A comprehensive presentation of corporate risks is included in the group management report which, in accordance with German laws and regulations, is to be prepared and published at the same time as these consolidated financial statements. Amongst others, the group management report goes into detail with regard to the expectations for future development of selling prices and the overall market.

PARTNER FOR LITHIUM MINING IS FOUND

On February 17, 2017, SolarWorld AG sold a 50% stake in SolarWorld Solicium GmbH, which deals with the exploration of a lithium storage facility in Altenberg-Zinnwald in the Osterzgebirge mountain range on the Czech border, to Bacanora Minerals Ltd. for a purchase price of € 5 million. This will lead to an estimated income of € 9 million in fiscal year 2017. The future joint venture, which will be officially registered in Freiberg/Saxony under the name Deutsche Lithium GmbH, will be jointly operated by Bacanora Minerals Ltd. and SolarWorld AG. It will be included in the SolarWorld AG consolidated group as an at equity investment. All future investments in the joint venture will be made by Bacanora Minerals. In addition, the partner has the option to acquire the remaining 50 percent of the joint venture for an amount in the medium double-digit million range within a certain period of time.

RECLASSIFICATION OF FINANCIAL LIABILITIES AS NON-CURRENT

In the financial year 2016, SolarWorld was unable to meet financial covenants contractually agreed in the credit facilities (SFA and SSFA). Therefore the creditors of the SFA and the SSFA principally had an exceptional right of termination. However, the required majority of the creditors stated that the right will not be used until the maturity date, if SolarWorld keeps a newly defined minimum liquidity. For a part of the financial liabilities (SSFA), the statement was not formally effective at balance sheet date, and consequently financial liabilities of € 50.8 million needed to be classified as current. However, during the preparation of the financial statements, the statement became effective so that this part now has to be classified as non-current as well. We also refer to our explanations in note 40 e).

APPROVAL OF THE FINANCIAL STATEMENTS

These financial statements are expected to be approved and authorized for issue by the Supervisory Board in its meeting on March 22, 2017.

40. CAPITAL MANAGEMENT AND FINANCIAL INSTRUMENTS

a) Management of capital structure

SolarWorld group's capital management is especially aligned to ensure the Group's financing. This includes the safeguarding of a constant level of minimum liquidity that is available. Directly managed by the executive board, SolarWorld AG is responsible

for planning and monitoring the Group's liquidity as well as the raising of capital. Short-term liquidity management is carried out with a planning horizon of 13 weeks. Generally, the corresponding planning is updated twice a month. Since the financial restructuring successfully completed in the year 2014, financial liabilities consist of two publicly-traded bonds and a senior credit facility. Additionally, SolarWorld received a Super Senior credit facility from Qatar Solar Technologies Q.S.C. as well as a loan from Qatar Solar S.P.C. in the scope of the financial restructuring. All credit facilities have terms until early 2019. SolarWorld group has a capital structure with an equity ratio of 17.7 percent (prior year 24.0 percent).

b) Principles and objectives of financial risk management

In its capacity as an internationally operating group, SolarWorld AG is exposed to market, credit and liquidity risks with regard to its assets, liabilities and future transactions already set and planned. Objective of financial risk management is the limitation of these risks by way of operating and finance-oriented activities.

Main features of financial policies are agreed upon in the board of directors and with the respective subsidiaries on a regular basis. Selected derivative and non-derivative financial instruments are utilized to limit or take risks in a controlled way, depending on the respective risk assessment, planning ability regarding future transactions and current market situation. As a basic principle, however, only those risks are addressed that have short- to medium-term consequences on the Group's cash flow. Implementation of financial policies as well as risk management is handled by the respective departments, which report to the board of directors on a regular basis.

Derivative financial instruments are regularly used as hedging instruments but not for trading or speculation purposes. To exploit short-term market fluctuations, possibly existing hedging instruments are closed out economically. To minimize default risks, hedging agreements are only concluded with leading financial institutions that have a credit rating in the investment grade area.

With regard to the investment of liquid funds, it is SolarWorld group's primary objective to minimize risks from the change of market prices or the creditworthiness of creditors and to ensure the constant availability of liquid funds. SolarWorld group therefore invests uncommitted liquid funds in demand deposits (fixed-term deposits and day-to-day money) predominantly in Euro, U.S. dollar and the British pound. To limit the default risk, demand deposits are only placed with leading financial institutes with a credit rating in the investment grade area.

c) Market risks

With respect to market risks, SolarWorld group is especially prone to risks from the change in currency translation, commodity prices and interest rates.

For the presentation of market risks, IFRS 7 requires sensitivity analyses, which show the consequences of hypothetical changes of relevant risk variables on result and equity. The periodic consequences are determined by showing how the hypothetical changes of the risk variables could have affected the existing financial instruments at balance sheet date. It is therefore assumed on the basis of existing hedging relations that net liabilities, the relation of fixed and variable interest on liabilities and derivatives and the proportion of foreign currency financial instruments remain unchanged.

Currency risks in terms of IFRS 7 arise on financial instruments that are denominated in a currency different from the functional currency and are of a monetary nature. Currency risk related differences from the translation of financial statements into the group currency remain unaccounted for. Relevant risk variables are basically all non-functional currencies in which SolarWorld group holds financial instruments.

Interest risks exist both on the borrowing and the deposit side. Thus, analysis of interest risks is carried out on the basis of net debt whereas it is assumed that interest for variably interest-bearing borrowings and deposits change in equal measure. Moreover, only those interest-bearing financial instruments whose interest level depends exclusively on market interest development are included in the analysis.

Risks from the change of commodity prices result from commodity derivatives concluded for hedging purposes with regard to the corresponding commodity purchases.

aa) Currency risks

SolarWorld group's currency risks mainly result from operating activities. Intra-group transactions are, partially, concluded in a foreign currency. Foreign currency risks are in principal only hedged to the extent to which they influence the Group's cash flows. On principle, risks that result from the translation of assets and liabilities of foreign subsidiaries into the group reporting currency and influence the Group's cash flow only upon disposal of the subsidiary are not hedged. However, hedging of these risks is not entirely ruled out in the future.

With regard to operating activities, the individual group companies mostly handle their operations in the respective functional currency. For the rest, SolarWorld group is exposed to foreign currency risks in connection with foreign currency transactions already set and planned. As in the prior year, no hedging relationships existed for these transactions at balance sheet date.

Aside from a proportion of liquid funds and trade receivables and liabilities, the material financial instruments are mainly denominated in functional currency. Hence, exchange rate changes basically influence the result only with regard to these foreign currency items.

If the Euro revalues (devalues) towards the US\$ by 10 percent, this will make for a negative (positive) effect on earnings before income tax of € 8,184k (€ 9,833k). The corresponding data for the prior year was € 10,304k (€ 12,390k). If the Euro revalues (devalues) towards the British pound by 10 percent, this will make for a negative (positive) effect on earnings before income tax of € 295k (€ 360k). The corresponding data for the prior year was € 1,123k (€ 1,372k). With regard to all other changes in exchange rates, the Group's currency risk is insignificant.

bb) Interest risks

At reporting date, all borrowed capital of the Group basically bears variable interest on the basis of the EURIBOR, whereas an EURIBOR rate of at least one percent is applicable. Presently, borrowed capital is therefore de facto subject to fixed interest rates. As uncommitted liquid funds are mainly invested for the short-term, SolarWorld faces an interest risk on the deposit side. Moreover, the Group is subject to interest risks in connection with an interest rate limit transaction in form of a maximum rate agreement (cap), which is not designated into a hedging relationship.

If the market interest rate level would increase by 10 basis points, the positive effect on earnings before tax would amount to € 88k (prior year € 189k). If the market interest rate level would decrease by 10 basis points, the negative effect on earnings before tax would amount to € 88k (prior year € 189k).

cc) Other price risks

In the prior year, SolarWorld group also possessed commodity derivatives to hedge the risk of increasing silver prices. As the derivatives were not integrated in a valid hedging relationship, changes in the derivatives' value affected the earnings before tax.

If the silver price rate had increased or decreased from – at prior reporting date – some US\$ 14/kg to US\$ 20/kg or US\$ 10/kg, the earnings before tax would have been € 3,971k higher or € 2,625k lower, respectively. At the current closing date, SolarWorld group is not in possession of any commodity derivatives anymore.

d) Credit risks

For the most part, SolarWorld group's uncommitted liquidity is invested in demand deposits with well-known banks rated in the investment grade area. Thus, the default risk is considered marginal in this respect.

With regard to supplies to non-group customers, depending on type and amount of the respective service, collateral is required, credit ratings/references are collected or historical data from previous business relations – especially as regards payment behavior – is used for avoiding default in payment.

To further limit credit risks, receivables from non-group module sales are mostly secured via credit insurances. Hence, the respective credit risk is regarded rather remote.

For the rest, the maximum credit risk results from the carrying amounts.

e) Liquidity risks

For SolarWorld group, liquidity risks arise from the obligation to redeem liabilities in full and in due time. It is therefore the task of the cash and liquidity management to assure the individual group companies' liquidity at any time.

Cash management for operating activities is carried out in a widely centralized manner for the individual business units. SolarWorld AG balances the respective requirements and surpluses regarding the individual units' means of payment in a centralized way by granting and accepting intra-group overdrafts or loans. Central cash management determines the group-wide financial resources requirements on the basis of business planning.

Financial liabilities reorganized in the course of the financial restructuring successfully completed in the year 2014 consist of two publicly-traded bonds with a nominal value as at December 31, 2016, of € 46.4 million and € 132.3 million (December 31, 2015: € 48.1 million and € 137.4 million) and a senior credit facility (Senior Facility Agreement or short SFA) of € 131.0 million (December 31, 2015: € 142.2 million). In addition, SolarWorld took out a Super Senior credit facility (Super Senior Facility Agreement or short SSFA) from Qatar Solar Technologies Q.S.C. in 2014, which amounts to € 50.8 million (December 31, 2015: € 49.4 million) at closing date. In 2016, an additional loan was granted by Qatar Solar S.P.C., which amounts to € 12.9 million at balance sheet date.

All abovementioned financial liabilities fall due in 2019. The bonds, the SFA and the SSFA include a so-called "cross-default clause", which gives the creditors an extraordinary right to give notice if SolarWorld AG does not meet its obligations from other borrowed funds.

The SFA and SSFA include provisions that entitle the creditors to extraordinary termination of the contract and demand premature repayment of the loans if certain covenants are not met. The

covenants are mainly indicators regarding the debt-equity and interest cover ratio and indicators regarding the minimum liquidity and maximum debt. In the financial year 2016, SolarWorld was unable to meet these covenants. Therefore, the creditors of the SFA and the SSFA principally have an exceptional right of termination. However, the required majority of the creditors stated that the right will not be used until the maturity date, if SolarWorld keeps a newly defined minimum liquidity in this period. Based on the current business plan, SolarWorld estimates the probability of dropping under this minimum liquidity and the consequential occurrence of an exceptional right of termination as being low.

In addition, creditors of borrowed funds in a nominal amount of € 361 million (prior year € 377 million) can demand early repayment of the loans in the event of a change of control at SolarWorld AG.

These regulations are supplemented by further standard provisions on termination.

The following chart shows the future undiscounted cash flows of the financial liabilities (interest and repayment), as they would contractually result without taking into account any unscheduled repayments or interest payment postponements. Unscheduled repayments are contractually agreed if certain liquidity or cash flow indicators are met or certain material cash flow-relevant transactions took place. SolarWorld has the right to postpone the interest payments to the maturity date of the financial liabilities, which can be exercised separately in each quarter. As far as cash flows in foreign currency are concerned, the currency rate at reporting date is used for the future.

UNDISCOUNTED CASH FLOWS OF FINANCIAL LIABILITIES

in k€	Total	2017	2018	2019
Bonds	-205,953	-12,703	-12,678	-180,572
Senior Facility Agreement	-151,031	-9,322	-9,296	-132,413
Super Senior Facility Agreement	-58,593	-3,616	-3,607	-51,370
Qatar Solar loan	-14,252	-880	-877	-12,495
Total	-429,829	-26,521	-26,458	-376,850

f) Fair values, carrying amounts and residual terms of financial instruments in accordance with categories

The following chart shows fair values and carrying amounts of financial assets and liabilities included in the individual line items:

Assets Dec 31, 16	Measurement categories IAS 39				
in k€	Held for trading	Loans and receivables	Available for sale	Derivatives in hedging relationships	Total carrying amounts
Trade receivables	-	55,032	-	-	55,032
Other receivables and assets	-	697	-	-	697
Other financial assets	-	11,220	13,834	-	25,054
Liquid funds	-	88,072	-	-	88,072
Total	0	155,021	13,834	0	168,855

Assets Dec 31, 15	Measurement categories IAS 39				
in k€	Held for trading	Loans and receivables	Available for sale	Derivatives in hedging relationships	Total carrying amounts
Trade receivables	-	97,402	-	-	97,402
Other receivables and assets	-	1,278	-	-	1,278
Other financial assets	-	14,081	13,834	-	27,914
Liquid funds	-	188,642	-	-	188,642
Total	0	301,403	13,834	0	315,236

Liabilities Dec 31, 16	Measurement categories IAS 39			
in k€	Financial liabilities recognized at amortized cost	Financial liabilities designated as at fair value	Purchase price commitment from business acquisition	Total carrying amounts
Financial liabilities	390,475	-	-	390,475
Trade payables	51,202	-	-	51,202
Other liabilities	-	-	-	0
Total	441,677	0	0	441,677

Liabilities Dec 31, 15	Measurement categories IAS 39			
in k€	Financial liabilities recognized at amortized cost	Financial liabilities designated as at fair value	Purchase price commitment from business acquisition	Total carrying amounts
Financial liabilities	405,084	765	-	405,849
Trade payables	77,771	-	-	77,771
Other liabilities	-	-	-	-
Total	482,855	765	0	483,620

Total fair values	IFRS 7 not applicable	Total carrying amounts	Residual terms		
			up to 1 year	between 1 and 5 years	exceeding 5 years
55,032	-	55,032	55,032	-	-
697	15,988	16,685	16,685	-	-
25,054	-	25,054	21,858	3,195	-
88,072	-	88,072	88,072	-	-
168,855	15,988	184,843	181,647	3,195	0

Total fair values	IFRS 7 not applicable	Total carrying amounts	Residual terms		
			up to 1 year	between 1 and 5 years	exceeding 5 years
97,402	-	97,402	97,402	-	-
1,278	16,233	17,510	17,510	-	-
27,914	-	27,914	24,853	3,062	-
188,642	-	188,642	188,642	-	-
315,236	16,233	331,468	328,407	3,062	0

Total fair values	IFRS 7 not applicable	Total carrying amounts	Residual terms		
			up to 1 year	between 1 and 5 years	exceeding 5 years
77,007	-	390,475	68,502	321,974	-
51,202	-	51,202	51,202	-	-
-	53,195	53,195	53,176	19	-
128,209	53,195	494,872	172,880	321,993	0

Total fair values	IFRS 7 not applicable	Total carrying amounts	Residual terms		
			up to 1 year	between 1 and 5 years	exceeding 5 years
256,653	-	405,849	57,223	348,627	-
77,771	-	77,771	77,771	-	-
-	70,470	70,470	70,452	18	-
334,424	70,470	554,090	205,446	348,645	0

The fair value of financial assets and financial liabilities needs to be presented in the amount that could be generated if the respective instruments were exchanged in the scope of a current transaction (with the exception of forced sale or liquidation) between business partners willing to contract. The methods and assumptions used for determining fair values are:

- Trade receivables, other receivables and assets, liquid funds, trade liabilities and the material proportion of the other liabilities in terms of IFRS 7 are subject to short residual terms. Thus, their carrying amounts at reporting date approximately equal fair value.
- The fair value of other financial assets and financial liabilities is determined on the basis of stock market prices on active markets if available.

- The fair value of unlisted other financial assets is estimated in application of appropriate measurement methods or on the basis of conducted transactions.

- The fair value of unquoted loans is estimated at a uniform 16.07 percent (prior year 60.45 percent) of the nominal value. This equals the mid-market rate of the two SolarWorld AG bonds traded on the capital market.

- The fair value of derivative financial instruments with existing observable input parameters on the market is estimated by discounting future cash flows in application of these input parameters. The used input parameters concern yield curves, commodity spot and forward rates as well as volatilities.

Financial instruments accounted for at fair value at the reporting date can be attributed to Level 1, 2 or 3 (note 2.1) for measurement and presentation of fair values as follows:

in k€	Dec 31, 16				Dec 31, 15			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Financial assets measured at fair value								
-available for sale	13,834	-	-	13,834	13,834	-	-	13,834
Financial liabilities measured at fair value								
-held for trading	-	-	-	-	-765	-	-765	-
Total	13,834	0	0	13,834	13,068	0	-765	13,834

The following chart shows the development of financial instruments included in stage 3 over the course of the business year:

in k€	2016	2015
As at Jan 1	13,834	12,927
Losses recognized in other financial result	0	-17
Deconsolidation	0	924
As at Dec 31	13,834	13,834

The financial instruments still held at balance sheet date that were assigned to stage 3 made for a netted loss of € 0k (prior year € 0k) in 2016.

g) Net gains and losses by measurement category

To the extent to that they are assignable to financing or investment activities, net gains and losses of the measurement categories “financial assets designated as at fair value through profit or loss” and “financial assets held for trading” are included in other financial result (note 11). In addition to results from market value measurement, they also include interest and currency effects. Furthermore, net gains and losses realized in the financial year from “financial assets held for trading” that are assignable to operations have to be taken into account as well. In total, the net gain from “financial assets held for trading” amounts to € -1,722k (prior year net loss € -1,139k).

In addition to the exchange gains mentioned below, net gains and losses of the measurement category “loans and receivables” mainly contain impairment losses in an amount of € 1,566k (prior year € 234k). The latter are included in other operating expenses.

With respect to the measurement categories “loans and receivables” and “financial liabilities measured at amortized cost”, net gains and losses need to take losses from currency effects into account, which were not subdivided for reasons of efficiency. The netted exchange gains for the reporting period amount to € 3,281k (prior year € 8,490k). To the extent to that they concern transactions in the scope of operations, they are recognized in other operating income or other operating expenses. To the extent to that they relate to financing transactions, they are recognized in other financial result.

Thus, net income from the measurement categories “loans and receivables” and “financial liabilities measured at amortized cost” amount to a total of € 1,715k (prior year € 8,256k)

As in the prior year, neither interest income nor additions to the AfS reserve were recognized with regard to “financial assets available for sale” in the reporting year.

h) Hedging

Hedging that required hedge accounting did not exist in the reporting period.

41. COMMENTS ON THE CASH FLOW STATEMENT**a) Cash flow from operating activities**

Cash flow from operating activities was prepared in accordance with the indirect method. At first, the pretax result used as a starting point is adjusted by significant non-cash earnings and expenses. This makes for the cash flow from operating results. Cash flow from operating activities takes the changes of net current assets into account.

Non-cash expenses and income of the business year essentially include the income from reversal of provisions and liabilities, the income from revaluation of non-current assets, impairment losses of inventories and receivables as well as the formation of a provision for focusing measures. In the prior year, it also included an income from deconsolidation and income from the revaluation of current assets.

Interest paid and interest received is included in cash flow from financing activities and cash flow from operating activities, respectively.

b) Cash flow from investing activities

The cash flow from investing activities includes payments for asset investments. SolarWorld did not receive any investment grants in this financial year. Cash receipts from the disposal of fixed assets are also taken into account. This year, these include the sale of PV plants. Cash receipts from Bosch Solar Energy AG arising from the negative purchase price agreed are also included under this heading. The negative purchase price has been agreed for the acquisition of a large part of the production lines and other assets from Bosch Solar Energy AG in Arnstadt, Thuringia in 2014.

The payments for asset investments contain € 9k (prior year € 43k) for capitalized expenses from “Exploration and evaluation”, which were classified as assets held for sale at year end.

c) Cash flow from financing activities

Cash flow from financing activities is characterized from the repayments of financial liabilities. In the financial year, these completely result from unscheduled repayments. Finally, the item shows interest paid.

In the financial year, the company made use of a contractual right to postpone the interest payments to the maturity date of the financial liabilities, while increasing the interest rate, twice. Consequently, the financial liabilities increased by an amount of € 18.6 million.

In the prior year in addition to the repayment of financial liabilities that can be taken from the cash flow, it could be reduced further by € 1.2 million because of derecognition of another loan due to the deconsolidation of a company.

d) Cash and cash equivalents

As in the prior period, cash and cash equivalents at the end of the period exclusively consist of liquid funds as recognized on the consolidated balance sheet. Bank accounts with a credit balance of € 86 million (prior year € 166 million) are subject to pledge agreements.

42. CONTINGENT LIABILITIES

Our subsidiary SolarWorld Industries Sachsen GmbH (formerly Deutsche Solar GmbH) is currently the defendant in court proceedings with the silicon supplier Hemlock Semiconductor Corp. The subject of the court proceedings is the non-acceptance of silicon from long-term silicon contracts concluded with this silicon supplier. Due to the non-acceptance, the silicon supplier claims an amount of US\$ 585 million on the basis of a "take or pay" obligation and in damages. On July 26, 2016, a single judge granted Hemlock's claim for damages amounting to US\$ 585 million plus interests of US\$ 208 million in the first instance. Projected up to the balance sheet date, these interests would amount to US\$ 241 million. SolarWorld Industries Sachsen GmbH has appealed against this judgment of the first instance at the Intermediate Court of Appeals in the United States in August 2016.

According to external legal opinions there are anti-trust concerns under European law regarding the effectiveness of the underlying supply contracts, which could mean that the purchasing obligations are null and void. From SolarWorld's perspective, the supplier is

therefore not entitled to claim damages. If a potential final ruling by a U.S. court was to be enforced in Germany, Hemlock would have to initiate a recognition process at German courts according to Sec. 722 (1) of the German code of civil procedure. These proceedings would require the existence of a final – i.e. non-appealable – judgment from the United States. Moreover, in such a process, the compliance with fundamental principles of German law would have to be considered in reaching a verdict. According to general legal opinion, European trust law is a fundamental principle of the German legal system. Therefore, even in case of a final ruling in the U.S. against SolarWorld Industries Sachsen GmbH, SolarWorld continues to assess the probability of its enforcement as low. Nevertheless, at this point in time the outcome of the proceedings cannot be finally estimated. Depending on the outcome, therefore it is possible that SolarWorld Industries Sachsen GmbH might be liable for damages up to the claimed amount.

43. RELATED PARTY DISCLOSURES

The following material transactions involving related parties were conducted in the reporting period 2016:

Administration and commercial property in Bonn as well as a solar park in Freiberg were rented and leased from Dr.-Ing. E.h. Frank Asbeck and related parties with annual rent and lease payments amounted to € 3.0 million (prior year € 1.4 million).

For other services and on-charges of costs incurred especially in connection with the management of solar parks, a net amount of € 519k (prior year € 289k) was invoiced to Dr.-Ing. E.h. Frank Asbeck and his individual enterprise. At the end of the period, liabilities of € 34k (prior year € 0k) were outstanding.

At reporting date, there was a payment received in the amount of € 158k (prior year € 158k) for the supply of modules not delivered till that date.

Services and on-charges of costs incurred in the amount of € 293k (prior year € 261k) were rendered to entities indirectly and directly controlled by Dr.-Ing. E.h. Frank Asbeck. At the end of the period, receivables of € 12k (prior year € 0k) were outstanding.

Entities controlled by Dr.-Ing. E.h. Frank Asbeck rendered services in amount of € 82k (prior year € 0k) to SolarWorld Group. At the end of the period, all liabilities with respect to this transaction were settled.

In the reporting year, SolarWorld made unscheduled partial repayments to its creditors. A share of 1.1 million accounted for the loan from Qatar Solar Technologies Q.S.C., amounting to € 50.8 (prior year € 50.2) million including interest on balance sheet date. The respective interest expenses for the reporting period amounted to € 4.5 (prior year 3.4) million. According to a contractual commitment, interest in amount of € 2.5 million was deferred for the maturity date.

On the basis of a corresponding shareholder agreement, Qatar Solar Technologies Q.S.C., Qatar, called in equity contributions totaling US\$ 11,603k. According to the agreements from the financial restructuring, both obligations claimed were paid by Qatar Solar S.P.C. in the first half of 2016 and granted to SolarWorld AG as a loan. The respective interest expenses for the reporting period amounted to € 0.6 million.

SolarWorld group has entered in the previous year into contracts regarding the construction of solar parks for Qatar Solar Technologies Q.S.C., Qatar, amounting to € 3.8 million. At reporting date, advances received in the amount of € 1.9 million resulted from this transaction.

For the activity in the Supervisory Board of the Qatar Solar Technologies Q.S.C., SolarWorld has received remunerations in amount of € 61k (prior year € 61k). At the end of the period, all receivables with respect to this transaction were settled.

In the reporting year 2016, SolarWorld purchased assets and spare parts amounting to € 3.6 (prior year € 0) million from a related party company of Qatar Solar Technologies Q.S.C., Qatar. At the end of the period, liabilities in amount of € 4.3 (prior year € 0) million including value added tax were outstanding.

Employee representatives to the Supervisory Board, who are in employment with SolarWorld AG or one of its subsidiaries, have received remunerations (excluding the remuneration for the Supervisory Board) in the total amount of € 304k (prior year € 147k) during their activity in the Supervisory Board.

Remuneration and share ownership of members of the executive and Supervisory Board is listed in note 45 and presented in the remuneration report of the management report.

All transactions were carried out at arm's length.

44. EMPLOYEES

The average number of employees amounted to 2,971 (prior year 2,838) and falls upon the entity's areas of operations and segments as follows:

Number	2016	2015
Production Germany	1,783	1,721
Production U.S.	760	658
Trade	312	349
Other	116	110
Total	2,971	2,838

Per December 31, 2016, the number of employees amounted to 3,034 (prior year 2,932) and included 55 trainees (prior year 49).

45. EXECUTIVE BOARD MANAGEMENT BOARD AND SUPERVISORY BOARD

For assuming their duties in both parent company and subsidiaries in 2016, the members of the Management Board received total remuneration payments of € 2,516k (prior year € 2,719k), which includes variable remuneration of € 496k (prior year € 877k).

For assuming their duties in both parent company and subsidiaries in 2016, the members of the Supervisory Board received remuneration payments including reimbursements in a total amount of € 650k (prior year € 518k), each plus statutory VAT. As in the prior year, the total does not include any variable remuneration.

Individualized disclosures regarding the remuneration of the board of directors' members are included in the entity's management report.

As in the prior year, the appointed members of the Management Board are:

- Dr.-Ing. E. h. Frank Asbeck (Chief Executive Officer)
- Dipl.-Kfm. tech. Philipp Koecke (Chief Financial Officer)
- Dipl.-Wirtschaftsing. Frank Henn (Chief Sales Officer)
- Attorney at law Colette Rückert-Hennen (Chief Information, Brand & Personnel Officer)
- Dipl.-Ing. Jürgen Stein (Chief Product Officer)

At reporting date the chairman of the Management Board, Dr.-Ing. E.h. Frank Asbeck, indirectly and directly owned unchanged to the prior year 20.85 percent of the shares in SolarWorld AG.

The members of the Supervisory Board are:

- Dr. Georg Gansen (Chairman), attorney-at-law/corporate legal counsel of Deutsche Post AG, Bonn
- Dr. Khalid K. Al Hajri, Doha, Qatar
- Faisal M. Al Suwaidi, Doha, Qatar, resigned his position on November 28, 2016
- Heiner Eichermüller, Scottsdale/Arizona, United States, freelance senior business consultant
- Dr. Andreas Pleßke, Herrsching am Ammersee, Germany
- Daria Revina, Doha, Qatar, since November 29, 2016
- Jürgen Wild, Vaucresson, France

The chairman of the Supervisory Board, Dr. Georg Gansen, does not hold office in any other boards of directors and similar supervisory bodies to be established according to law.

As in the prior year, employee representatives on the Supervisory Board are:

- Gerald Voigt, Chemnitz, Germany (Deputy Chairman), trade union Industriegewerkschaft Bergbau, Chemie, Energie (IG BCE) district manager for Dresden/Chemnitz
- Albrecht Handke, Dresden, Germany, press and public relations officer, member of the works council of SolarWorld Industries Sachsen GmbH
- Wolfgang Lemb, Frankfurt am Main, Germany, member of the management board of trade union Industriegewerkschaft Metall (IG Metall)
- Dr. Ute Mareck, Freiberg, Germany, manager of technology and process at SolarWorld Industries Sachsen GmbH
- Alexander Richter, Freiberg, Germany, member of the works council of SolarWorld Industries Sachsen GmbH and member of the group works council of SolarWorld AG
- Olaf Zirr, Erfurt, Germany, team manager QHSE and deputy chairman of the works council of SolarWorld Industries Thüringen GmbH

The deputy chairman of the Supervisory Board, Gerald Voigt, is also member of the Supervisory Board of envia Mitteldeutsche Energie AG, Chemnitz.

46. AUDITOR'S FEES

For 2016, total fees invoiced by the auditor of the consolidated financial statements, BDO AG Wirtschaftsprüfungsgesellschaft, Hamburg/Bonn, including reimbursement of costs, amount to:

- a) Year-end audit € 0.7 million (prior year € 0.7 million)
- b) Miscellaneous services € 0.0 million (prior year € 0.1 million)

47. CORPORATE GOVERNANCE

In November 2016, Supervisory Board and Management Board issued the statement required by § 161 AktG, stating that, with a few exceptions, the recommendations of the “Deutscher Corporate Governance Kodex” (German Corporate Governance Code) issued on May 5, 2015, were and are complied with. Both the declaration of compliance and explanations for exceptions are published on the SolarWorld AG website (www.solarworld.de/entsprechenderklaerung).

Bonn, March 21, 2017

SolarWorld AG
The Management Board



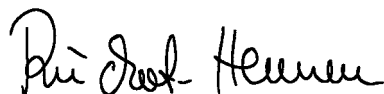
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Chief Executive Officer (CEO)



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Chief Financial Officer (CFO)



RAIN Colette Rückert-Hennen
Chief Information,
Brand & Personnel Officer (CIBPO)



Dipl.-Ing. Jürgen Stein
Chief Product Officer (CPO)

AUDIT OPINION

We have audited the consolidated financial statements – comprising the statement of financial position, statement of profit and loss, statement of comprehensive income statement of changes in equity, statement of cash flows and notes to the consolidated financial statements – of SolarWorld Aktiengesellschaft, Bonn, Bonn, for the period January 1, 2016 to December 31, 2016. The preparation of the consolidated financial statements and the group management report in accordance with IFRS, the additionally applicable requirements of the German commercial law (§ 315 a sec. 1 HGB [Handelsgesetzbuch – German Commercial Code]) and the supplementary provisions of the articles of association are the responsibility of the company's legal representatives. Our responsibility is to express an opinion on the consolidated financial statements and the group management report based on our audit.

We conducted our audit of the consolidated financial statements in accordance with § 317 HGB [Handelsgesetzbuch - German Commercial Code] and German generally accepted standards for the audit of annual financial statements promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of financial position, financial performance and cash flows in the consolidated financial statements in accordance with the applicable financial reporting framework and in the group management report are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the group and expectations as to possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the accounting-related internal control system and the evidence supporting the disclosures in the consolidated financial statements and the group management report are examined primarily on a test basis within the framework of the audit. The audit includes assessing the accounting information of the consolidated subdivisions, definition of the consolidated entity, applied accounting and consolidation principles and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements and group management report. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

In our opinion, based on the findings of our audit, the consolidated financial statements comply with IFRS as applicable in the EU, the additionally applicable requirements of the German Commercial Code (§ 315a sec. 1 HGB) and the supplementary provisions of the articles of association and give a true and fair view of the financial position, financial performance and cash flows of the group. The group management report is consistent with the consolidated financial statements, complies with statutory regulations and, as a whole, provides a true and fair view of the group's position and suitably presents the opportunities and risks of future developments.

Without qualifying this assessment, we refer to the comments in the group management report.

The "risk report" section, namely the overall presentation of the management board regarding the group's risk situation, states that the legal representatives estimate the group's risk situation to be very high and that the ability of the group to continue as a going concern could be affected if the positive consequences of the resolved strategic and operational measures that the legal representatives expect to happen will not come about. In addition, we refer to the presentation of individual risks, especially "liquidity risks".

Moreover, the risk report's overall presentation of the management board on the group's risk situation states that, due to their extent, claims asserted by Hemlock Semiconductor Corp. in its legal action with the subsidiary SolarWorld Industries Sachsen GmbH could also jeopardize the ability of the group to continue as a going concern should they become final and definite and could be enforced in Germany contrary to the beliefs of the legal representatives. In addition, we refer to the presentation of individual risks in connection with the "legal risks".

Bonn, March 21, 2017

BDO AG
Wirtschaftsprüfungsgesellschaft

signed **Lubitz**
Wirtschaftsprüfer
(German Public Auditor)

signed **Minafra**
Wirtschaftsprüfer
(German Public Auditor)

RESPONSIBILITY STATEMENT

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements 2016 give a true and fair view of the assets, liabilities, financial position and profit or loss of the group, and the group management report

2016 includes a fair review of the development and performance of the business and the position of the group, together with a description of the principal opportunities and risks associated with the expected development of the group.

Bonn, March 21, 2017

SolarWorld AG
Board of Management



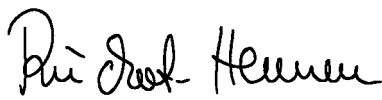
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Chief Product Officer (CPO)

INFORMATION ABOUT THE REPORT

Due to eco-efficiency, the section "Sustainability in detail 2016" is only available online at ► www.solarworld.de/sustainability.

This report is also available in German. PDF files can be found on our webpage at ► www.solarworld.de/financial-reports.

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PRINTED BY

WOESTE DRUCK + VERLAG GmbH & Co. KG, Essen ► www.woeste.de

PAPER

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FINANCIAL AND EVENT CALENDAR 2017

MARCH 29, 2017	▶▶▶ Publication of Annual Group Report 2016 www.solarworld.de/financial-reports Press Conference on Financial Statements, Bonn (Germany) Analysts' Conference Call
MAY 15, 2017	▶▶▶ Publication of Consolidated Quarterly Announcement 1st quarter 2017 www.solarworld.de/financial-reports Analysts' Conference Call
MAY 31–JUNE 2, 2017	▶▶▶ Intersolar Europe, Munich (Germany)
JULY 3, 2017	▶▶▶ Annual General Meeting, Bonn (Germany)
AUGUST 14, 2017	▶▶▶ Publication of Consolidated Interim Report 1st half 2017 www.solarworld.de/financial-reports Analysts' Conference Call
SEPTEMBER 10–13, 2017	▶▶▶ Solar Power International, Las Vegas (U.S.)
NOVEMBER 14, 2017	▶▶▶ Publication of Consolidated Quarterly Announcement 3rd quarter 2017 www.solarworld.de/financial-reports Analysts' Conference Call



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SUSTAINABILITY IN DETAIL 2016

COMPANY PROFILE AND REPORT CONTENTS

THE CORE OF OUR BUSINESS ACTIVITIES IS SUSTAINABILITY

G4-2

Society is growing increasingly aware of the importance of a sustainable energy supply. Around the world, the impacts of climate change are becoming ever more visible. The phase-out of nuclear power and greater efforts toward decarbonization require alternative energy sources. Solar power can make an important contribution here. In times of climate change, we are enabling a sustainable energy supply. We are aware that we have an impact on the environment. We disclose this impact every year in our sustainability report. Our reporting aims to explain SolarWorld's role in society and its impacts on the economy, people and the environment. Our business activities have always been based on the principle of sustainability. Currently, the SolarWorld group is facing the challenge of competing in an enormously difficult market environment. But being in this position only makes us all the more determined not to abandon our sustainable principles. We expect that our positioning as a company that acts responsibly will have a positive impact on our image and brand and will bring us competitive advantages.

Our vision of using the power of the sun worldwide to create a sustainable energy supply and give people the opportunity of sustainable development, has been with SolarWorld since the very beginning. So, for the time being, we see the increasing scarcity of fossil fuels and advancing climate change presenting more opportunities than risks, as we offer solutions to the challenges of a sustainable energy supply. We consider risks from our operations to be rather low. In principle, manufacturing companies face higher

risks of environmental impact or to the health and safety of employees. ► Individual risks – p. 064 Our management systems, corporate guidelines and instructions are designed to minimize these risks. Further technical measures reduce them actively. Risks and opportunities are identified as part of our opportunity and risk management system. ► Opportunity and risk management system – p. 061 Detailed information on the most important opportunities and risks is presented in the management report. ► Group management report forecast – p. 076 ► Climate change: opportunities and risks – p. 193

We have been reporting within the framework of the Global Reporting Initiative (GRI) since the SolarWorld 2007 Annual Group Report. This makes the present report the tenth in a row. SolarWorld continues to report comprehensively ("In Accordance – Comprehensively") and has an audit of key sections performed by BDO AG Wirtschaftsprüfungsgesellschaft. As part of integrated reporting, sustainability issues that have a direct or indirect influence on our business success are set out in the management report. Further information that is relevant to individual stakeholder groups is disclosed in this annex, "Sustainability in detail." Key aspects and topics are set out in ► Reporting – p. 174 and ► Management approach – p. 177. In the appendix of this report, we publish the Communication on Progress to the UN Global Compact.

REPORTING

G4-18-21+48

In this report, we disclose the economic, environmental and social impacts along our value chain. We report transparently on our corporate activity and our environmental goals. The content of this report follows four basic principles: materiality, stakeholder engagement, completeness and sustainability context. Based on a materiality analysis and the guidelines of the Global Reporting Initiative (G4), the report is drawn up and then reviewed by the Management Board and Supervisory Board. The Management Board subsequently gives final approval to the report.

We decide which aspects and issues to consider for the materiality analysis by taking into account the Global Reporting Initiative (G4), the core topics highlighted in the management report, the principles of the UN Global Compact and the key performance indicators and descriptions of the European Federation of Financial Analysts (EFFAS) / Society of Investment Professionals in Germany (DVFA). For our materiality analysis, we ask our stakeholders directly: In November 2016, we contacted around 600 people via email and sent out a questionnaire. Responses were evaluated anonymously and served as the basis for the materiality analysis. The Management Board was also surveyed. We do not define any absolute value to distinguish between material and non-material topics, but rather consider the topics with the ten highest ratings respectively.

Every year, our sustainability performance is evaluated by various initiatives. As part of the CDP, we have been disclosing our impact on the climate since 2006 and the impact on the environmental medium water since 2016. We have already had our reporting evaluated by the "Institut für ökologische Wirtschaftsforschung" and the "future e. V. – verantwortung übernehmen" within the "Ranking der Nachhaltigkeitsberichte" for the third time. In addition, we had our reporting for the fiscal year 2013 evaluated by future e. V. according to the same criteria. The results of these very detailed assessments influence our reporting. This is how we are constantly improving the transparency and quality of our sustainability reporting. Compared with the 2013 evaluation, we have achieved an improvement of 15 percentage points for the reporting in 2014. At the time of the submission deadline, the 2015 report had not yet been published.

GRI – Global Reporting Initiative.

Is an organization that has been developing guidelines for the preparation of sustainability reports of companies, governments and other institutions for 20 years. The GRI guidelines are aiming at transparency, standardization and comparability of reporting. They are internationally recognized.

Stakeholders who are unable to express their needs – for example the environment – are not listed as a separate stakeholder group. We attempt to represent this perspective by including scientists in the survey.

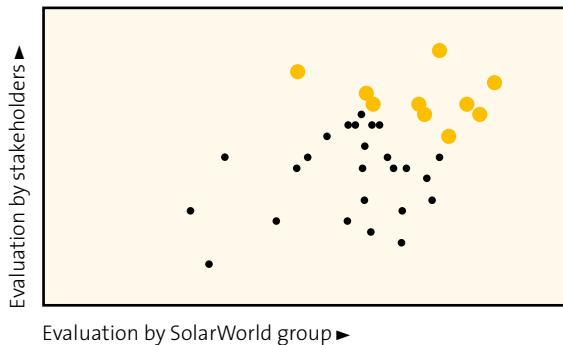
MATERIAL ASPECTS AND TOPICS

Aspect/topics

Business model & strategy of the SolarWorld group
Solar market trends
Economic indicators
Concrete opportunities
Concrete risks
Corporate management and control
Corporate governance
Customer health and safety, protection of customer data
Compliance – Environmental aspects
Products, services, innovations

T 48

MATERIALITY MATRIX: ARRAY OF ASPECTS AND TOPICS FOR THE SOLARWORLD GROUP



■ „Top 10“

G 23

What is materiality?

This question deals with what is so important or material to our stakeholders and our management, that it significantly influences their decisions. The term comes from auditing and shall reflect the important economic, environmental and social impact of a company in the context of sustainability.

All results from the analysis are presented at the end of the report ► Appendix: Materiality Analysis – Assessment of all aspects and topics – p. 258.

G4-17+22+23
REPORTING SCOPE AND BOUNDARY

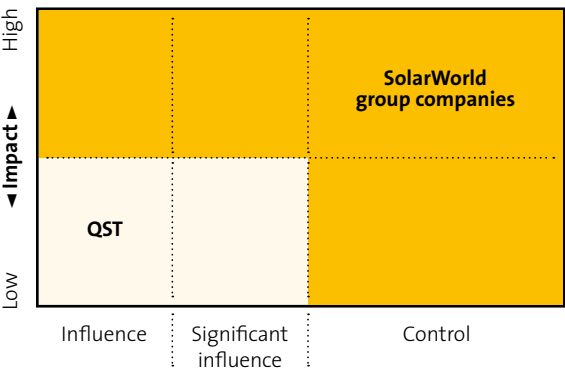
The Sustainability in Detail report complements and adds more detail to the reporting of non-financial indicators in the 2016 Annual Group Report. It covers all organizational units that we control or significantly influence. ► *Group structure – p. 122* This includes all companies of the SolarWorld group, i.e. 100 % of consolidated revenue. Indicators are collected and reported in such a way that they are representative of the group. Special points and exceptions are mentioned accordingly. The reporting period is the 2016 fiscal year, which corresponds with the calendar year 2016. The “Social Sustainability” section does not list separate tables for our international sales sites in France, the UK, South Africa, Singapore and Japan. At these sites, a total of only slightly more than one percent of our workforce is employed. For the sake of materiality these data are included in the figures for the group, but we do not present them separately.

Upstream and downstream stages of the value chain and outsourced activities are included only to a limited extent due to a lack of control and influence over them; exceptions are indicated in the relevant places. According to the Global Reporting Initiative, we exert control if we govern the financial and operating policies of an enterprise and obtain benefits from its activities. We exert substantial influence if we are involved in financial and operating decisions without exerting control.

In general, data is collected via the group’s software systems (e.g. Navision, Targit or SAP solutions) by the respective departments. The majority of ecological and social indicators are compiled via a SharePoint solution. The respective calculation basis is explained together with each indicator.

Regarding the scope and limits of reporting, we pay attention to continuity and comparability across the years. We do not calculate an error margin for our indicators or the statistical error tolerance. If errors have been found in previous years’ indicators, or modified calculation bases have been used, the indicators are adjusted where necessary and a comment is added.

REPORTING BOUNDARY



G 24

G4-33
CONFIRMATION BY THIRD PARTY

The present report (sections “Company profile and report contents” as well as “Performance indicators”) was subjected to an audit review by BDO AG Wirtschaftsprüfungsgesellschaft, in accordance with the Generally Accepted Assurance Principles for the Audit or Review of Reports on Sustainability Issues established by the Institute of Public Auditors in Germany (IDW). ► *Confirmation – p. XXX* This standard (PS 821) includes and exceeds the standards contained in ISAE 3000.

MANAGEMENT APPROACH

G4-DMA, G4-14+46+47

The corporate policy of SolarWorld AG is derived from our vision. It forms the basis for the management approach, and for processes and principles within the group. Our brand's core values also play a crucial role. ► *Brand and marketing – p. 035* A significant part of the work done by SolarWorld's Management Board consists of identifying and evaluating opportunities and risks for the company. Measures are then taken to respond to potential impacts, both positive and negative. Negative impacts should be averted or at least reduced. Opportunities should be developed and exploited to achieve positive impacts for the company. The Management Board defines the outlines of the opportunity and risk policy and manages SolarWorld accordingly. Global opportunity and risk management reporting to the Management Board is done at least monthly, or immediately when urgent. In turn, the Management Board is responsible for reporting to the Supervisory Board. In the event of risks threatening the existence of the company, the Supervisory Board is involved in an advisory capacity.

Materiality limits are assessed at least annually for appropriateness and, if required, adapted to changed conditions. This assessment is performed at local level by the local risk manager in coordination with the management of the respective subsidiary and in consultation with the global risk manager, as well as at group level by the global risk manager in consultation with the Management Board. ► *Opportunity and risk management system – p. 061*

Especially for SolarWorld as a sustainably positioned company, ecological and social issues offer a chance to differentiate itself from competitors and, in accordance with the precautionary principle, to seek sustainable solutions early on. The precautionary principle states that if there is any risk of serious or irreversible damage, uncertainties in the scientific assessment shall not serve as a reason for postponing cost-effective measures to prevent environmental damage or adverse health effects. The precautionary principle has been institutionalized in our company through our

integrated management system (quality, health, safety and environmental management system) and the compliance management system. In our customer base, we can see a slowly increasing LOHAS orientation (lifestyles of health and sustainability), but cost aspects are still the dominant driver in our customers' decision-making. We take this fact into account by focusing on projects to cut costs, but without neglecting sustainability.

The materiality analysis identifies topics that are particularly relevant to stakeholders and SolarWorld's management. This year's analysis mainly identified topics which appear in the Annual Group Report as well.

BUSINESS MODEL AND STRATEGY OF SOLARWORLD. Our business model primarily consists of manufacturing and selling crystalline solar power technology. SolarWorld is active at all stages of the solar value chain. We offer solar power solutions for commercial and private users. Core products are our solar power modules with appropriate mounting systems. ► *Company profile – p. 021*

SolarWorld is present in all established and growing markets and has locations in seven countries with more than 3,000 employees groupwide. The group strategy is derived from the SolarWorld vision and is aimed at establishing a sustainable energy supply worldwide. SolarWorld's management strives to offer added value with customer-oriented solar power solutions and to meet the highest international quality standards. ► *Strategy – p. 023*

SOLAR MARKET TRENDS. Solar market trends have a direct impact on demand for our products and thus have a strong influence on the current and future success of our business. Management and stakeholders therefore see this aspect as highly relevant. The management approach aims at shaping these general conditions: The key factors are strategic market development in sales and marketing, product development for the respective markets and customer groups and political influence exerted by the group. Overall, however, the group's influence on solar market trends is limited. ► *The market – p. 031*

ECONOMIC INDICATORS. The development of the financial indicators of the group is of great importance to stakeholders and management; the company's success can be measured by it. A good performance ensures the continued existence of SolarWorld and gives confidence to stakeholders for a reliable cooperation. As a stock company (AG), we have a particular responsibility to stakeholders in general and our shareholders in particular, to provide information on the company's economic position. We disclose extensive information of this kind in the ► *Group management report – p. 018.*

CONCRETE OPPORTUNITIES AND CONCRETE RISKS. Identifying and evaluating concrete risks is an essential task for top management. Our stakeholders see SolarWorld's opportunities as a particularly relevant aspect. Every year, we report transparently on the risks and opportunities for the group: in the risk report, in the opportunity report and in ► *Climate change: opportunities and risks – p. 193.*

CORPORATE MANAGEMENT AND CONTROL. The SolarWorld Management Board manages the company according to the corporate policy and strategy. They are supported by lower management levels in the respective departments. It is the task of the Supervisory Board – representing the shareholders – to supervise the Management Board. The Supervisory Board receives reports from the Management Board on a monthly or immediate basis. ► *Group management and supervisory bodies – p. 179* ► *Report by the Supervisory Board – p. 100*

CORPORATE GOVERNANCE. In their work, including the preparation of the Annual Group Report, our management follow the recommendations of the German Corporate Governance Codex. The Management Board places a particular emphasis on corporate responsibility and transparency. In our ► *Corporate governance report – p. 085,* we disclose a lot of information on topics such as the remuneration of the Management Board and Supervisory Board and the compliance management system.

CUSTOMER HEALTH AND SAFETY, PROTECTION OF CUSTOMER DATA. Our solar power modules meet the highest safety and quality standards. We let them undergo numerous certification processes regularly, to guarantee quality and safety. Our in-house test laboratory tests our modules far beyond the requirements of usual standards. Moreover, we build on long-term business relationships, so our customers' trust is essential. This includes protecting customer data. We safeguard this data by means of suitable state-of-the-art software solutions and via internal processes and rules. These are monitored by the Information Security Manager and the Data Protection Officer.

COMPLIANCE – ENVIRONMENTAL ASPECTS. Of course, our management adheres to environmental laws and regulations in its work. To this end, QHSE departments are set up at all production sites. Our manufacturing sites are located in Germany and the United States. In these countries, we are subject to strict legal requirements, and compliance is verified regularly both internally and externally. The management approach consists of continuously monitoring sustainability performance. Our production sites have established environmental management systems in accordance with ISO 14001. ► *Environmental sustainability – p. 197* In their work, management also pay attention to potential compliance violations within the value chain. Influence over suppliers is increased by conducting regular supplier audits, and via the Supplier Code of Conduct. This code requires that suppliers observe applicable environmental legislation and standards and install effective systems for identifying potential risks.

PRODUCTS, SERVICES AND INNOVATIONS. These aspects are particularly relevant to our stakeholders, because SolarWorld's range of products and services has an impact on them, too. Management aims to differentiate our offering from the competition in terms of module performance, quality and aesthetic appearance and create real value for SolarWorld customers. We want to offer our customers high-performance, high-quality solar power solutions that are state of the art.

The effectiveness of the measures carried out is checked on the basis of agreed targets. The management approach is assessed regularly via the monitoring of corresponding key performance indicators – weekly, at least however once per year. ► *Management and control – p. 025* ► *Economic position 2016 – p. 046*

What does QHSE mean?

The abbreviation stands for quality, health, safety and environment, meaning quality management, health protection, occupational safety and environmental protection. This department is responsible for the controlling and monitoring of as well as the compliance with laws and regulations in the areas mentioned

G4-36-41+43

GROUP MANAGEMENT AND SUPERVISORY BODIES

Members of the Management Board are chosen with the aim of bringing together the necessary expertise and management experience for core issues in the group. The CEO, **Dr.-Ing. E.h. Frank Asbeck**, holds a degree in agricultural engineering and an honorary doctorate from the Faculty of Chemistry and Physics of TU Bergakademie Freiberg. He was involved in developing projects in Africa before founding SolarWorld AG. He is a founding member of the Green Party. **Frank Henn (Dipl.-Wirtschaftsing.)** has experience in sales and marketing in multinational companies. He has been CSO of SolarWorld AG since 2004. **Philipp Koecke (Dipl.-Kfm. tech.)** joined SolarWorld AG after working in the finance and banking sector. He has been SolarWorld AG's CFO since 2003. **Colette Rückert-Hennen (attorney)** was a lawyer before working in tourism for 20 years. She has extensive experience in international management and has been Chief Human Resources and Brand Officer at SolarWorld since 2011 as well as Chief IT Officer since spring 2013. **Dipl.-Ing. Jürgen Stein** worked in the production environment and international sales before switching to purchasing some 10 years ago. Jürgen Stein has extensive experience in international management and joined SolarWorld in 2011. Since 2013, he has been Chief Product Officer. ► *Boards of SolarWorld AG – p. 091* Overall, there has been a high degree of continuity in the composition of the Management Board since the company's founding. These are not managers with short-term appointments, which serves to counteract any tendency in corporate management toward making fast profits. As an example, the CEO is simultaneously the founder and major shareholder of the company. There are no cross-holdings. Since 2014, two long-term anchor investors have been holding shares in SolarWorld AG: Qatar Solar S.P.C. with 29.00 percent as well as founder and CEO Dr.-Ing. E. h. Frank Asbeck with 20.85 percent (as at December 31, 2016). 50.15 percent of the stock is currently in free float. ► *Capital stock and shareholder structure – p. 030*. The relationships to related persons and companies are disclosed in the ► *Corporate governance report – p. 085*.

The Supervisory Board of SolarWorld AG has been co-determined on a basis of parity since June 2015. To achieve this, the total number of members of the Supervisory Board was increased by a further six members from the employee side, in addition to the existing six members from the shareholder side. The employee representatives are elected by the workforce for a period of five years. The shareholder representatives on the Supervisory Board are elected by the Annual General Meeting. The statutory gender quota as of 2016 only applies to newly elected Supervisory Boards and will be observed in the next electoral period at SolarWorld.

On the shareholder side, the Supervisory Board consists of Chairman **Dr. Georg Gansen** and the Supervisory Board members **Heiner Eichermüller**, **Dr. Khalid Klefeekh Al Hajri**, **Faisal M. Al Suwaidi** (till November 2016), Daria Revina (since November 2016), **Dr. Andreas Pleßke** and **Jürgen Wild**. All shareholder representatives on the Supervisory Board, with the exception of Daria Revina (until the 2017 AGM), are appointed until the conclusion of the Annual General Meeting which decides on the approval of the Supervisory Board's actions and the Management Board's actions for the fiscal year 2019. **Olaf Zirr**, **Albrecht Handke** and **Alexander Richter** were elected as employee representatives. **Dr. Ute Mareck** was elected for the executive employees, and **Wolfgang Lemb** and **Gerald Voigt** as representatives of the trade unions. ► *Boards of SolarWorld AG – p. 091* No Supervisory Board member is older than 70 years. Details on the independence of the Supervisory Board are disclosed in the ► *Corporate governance report – p. 085*.

The Management Board and Supervisory Board are responsible for their own further training in terms of sustainability.

G4-34-37+42+44+45+48

MANAGEMENT, ASSESSMENT AND MONITORING OF SUSTAINABILITY PERFORMANCE

Our vision ► www.solarworld.de/en/vision has always been based on the principle of sustainability, and sustainable corporate management is a core constituent of our corporate policy. The entire Management Board is committed to sustainability (SolarWorld Changemaker Manifesto). Each member of the Management Board drives the subject forward within his/her area. Colette Rückert-Hennen, Chief Information, Brand and Personnel Officer, is responsible for corporate social responsibility within the group. Jürgen Stein, Chief Product Officer, is responsible for the sustainable consumption of resources and product development as well as for sustainability within the supply chain. Chief Sales Officer Frank Henn supports sustainable development in the trade and sales area. Philipp Koecke, Chief Financial Officer, is responsible for transparency in reporting on the subject of sustainability, as well as for monitoring the sustainable performance indicators. Dr.-Ing. E. h. Frank Asbeck bears overall responsibility as CEO.

The strategic development of the company's purpose is the responsibility of the Management Board. To this end, it consults senior executives and has them make proposals. SolarWorld employs various management instruments in considering economic, ecological and social aspects ► *Corporate management and control – p. 025*. We have been certified in accordance with DIN ISO 9001 (quality), DIN ISO 14001 (environment), DIN ISO 50001 (energy) and BS OHSAS 18001 (occupational safety). Opportunities and risks are covered comprehensively by our risk management tools ► *Group management report forecast – p. 058*. The achievement of all group targets is reviewed regularly (on a monthly to yearly basis depending on urgency). Our sites report the sustainability indicators to the investor relations department. Data is collected and evaluated there. We comprehensively disclose our sustainability performance via our reporting. ► *Communication on progress for the UN Global Compact – p. 254* ► *KPIs and KPNs for ESG – p. 245* ► *GRI index – p. 248* The executives provide the Management Board

with an insight into the themes highlighted as material in the dialog with our stakeholders. ► *Stakeholders – p.183*

Authorities for economic, ecological and social topics are delegated by the Management Board to executives (either through job descriptions in which the tasks and responsibilities are clearly defined or on a project-specific basis). Powers are given by the respective company's management.

G4-49-50, 56-58

COMPLIANCE, ETHICS AND INTEGRITY

Our guiding principles apply throughout the group and are to be implemented by means of our management instruments and via the examples set by our executives. The SolarWorld Code of Conduct is based on international standards (e.g. those of the International Labor Organization and of the UN Global Compact) and is supplemented by further corporate policies and guidelines.

The SolarWorld Code of Conduct commits all Management Board members to compliance. This aspect is the particular responsibility of the Chief Information, Brand and Personnel Officer, Colette Rückert-Hennen. The global compliance officer reports to her and is autonomous in this function. The Supervisory Board receives an annual compliance report from the global compliance officer, a copy of which is also delivered to the full Management Board and the auditor. In case of serious compliance incidents, information is sent immediately to the Supervisory Board. Each SolarWorld site also has local compliance officers who support the global compliance officer in his/her work. The global compliance officer is in charge of the local compliance officers and heads the compliance committee. The compliance committee meets at least quarterly and discusses preventative measures, among other things. Alongside the global compliance officer, other members of the compliance committee are the Chief Information, Brand & Personnel Officer, Chief Financial Officer, Senior Auditor Internal Audit, Vice President Finance and Corporate Control, Director of Global Controlling (including risk management), and the Vice President Global Human Resources. The main tasks of the

compliance committee are to analyze compliance cases, to decide on action to be taken in serious compliance cases, to develop and implement improvement measures, to close gaps in corporate guidelines and continually improve the compliance organization. Training is conducted throughout the group in the main risk areas, which are identified via the compliance risk analysis.

Questions and hints can be addressed directly to all compliance officers in the company as well as through our whistleblowing system “SolarWorld SpeakUp”, which is part of the compliance organization and is operated by our Dutch service provider People Intouch B.V. Employees and suppliers have access to this. Employees are informed about this system when hired as well as in compliance training. The information can be found at any time on the compliance intranet website. Suppliers are informed via email and our website. “SolarWorld SpeakUp” is available unrestrictedly (24/7): to employees in the languages German, English, Spanish and French and to suppliers in German and English. It is managed by the global compliance officer, and the compliance committee is automatically involved with every report. Users can remain anonymous (as permitted by law). All retaliation is strictly forbidden by the Code of Conduct. In 2016, 1 (2015: 6) report was made via the system. This was not a compliance case. All other target groups are able to contact the compliance committee via email at ► integrity@solarworld.com. Alternatively, there is a contact form on the website that can be completed anonymously and which reaches the global compliance officer directly.

Employees also have the possibility to approach the Management Board with information and suggestions, either through their managers or directly. At our Arnstadt, Bonn and Freiberg sites, employees can also raise their concerns via the works council. Under German law, in many areas, there are certain aspects which are subject to co-determination, which means that although employees cannot issue direct instructions to the Management Board, they are able to exert influence via the works council and either prevent or encourage particular developments. In addition, the possibility now also exists of putting forward matters of interest to employees via the co-determined Supervisory Board and the group works council. Stakeholders, too, can directly approach the Management Board and the Supervisory Board with information and suggestions. Special communication mechanisms have not yet been implemented.

SolarWorld signed up to the United Nations Global Compact in 2009 and has pledged to work for its 10 Principles. This includes making explicit reference to them in the SolarWorld Code of Conduct. We also try to commit our business and contract partners to complying with similar standards. The Supplier Code of Conduct requires our business partners to comply with all applicable environmental and social legislation, rules and standards and to operate an efficient system to identify and eliminate potential hazards. In addition, our suppliers are encouraged to make their contractors and other business partners comply with these standards, too. The Supplier Code of Conduct is a constituent part of contracts and is included in our general terms and conditions and enclosed to all orders.

German stock corporation law regulates the exchange of information between shareholders and the Supervisory Board/Management Board. Shareholders have a right of participation and a right to information at the Annual General Meeting (AGM). They can exert influence by speaking and voting at the AGM, submitting counter-proposals, demanding amendment of the agenda, submitting proposals for the election of Supervisory Board members and by calling an extraordinary shareholders' meeting. The Management Board and Supervisory Board take questions from shareholders at the Annual General Meeting. Shareholders vote on whether to approve the Management Board's and Supervisory Board's actions during the past year. The capital market regulations are supplemented by the recommendations of the German Corporate Governance Code (GCGC), which the Management Board and Supervisory Board of SolarWorld have complied with and will continue to comply with – with a few disclosed exceptions. Our shareholders have the possibility of expressing their concerns at the Annual General Meeting or of contacting the investor relations department via ► placement@solarworld.com. In June 2016, the main topics discussed at the AGM of SolarWorld were: the turnaround forecast, the ongoing legal dispute with the silicon supplier Hemlock Semiconductor Corp. in the United States, further expansion of production capacities, product innovation, trade complaints and countervailing measures in the United States and the EU. ► [The stock – p. 028](#) ► [Corporate governance report – p. 085](#)

STAKEHOLDERS

G4-24

INVOLVEMENT OF STAKEHOLDERS

As an international company, SolarWorld faces the demands of a large number of stakeholder groups. We are continuously in contact with all of our stakeholders. The most important include our customers, employees, suppliers, banks and creditors as well as governments and authorities. Other stakeholders to whom particular consideration is given are trade groups and associations as well as employee representations and associations.

G4-25

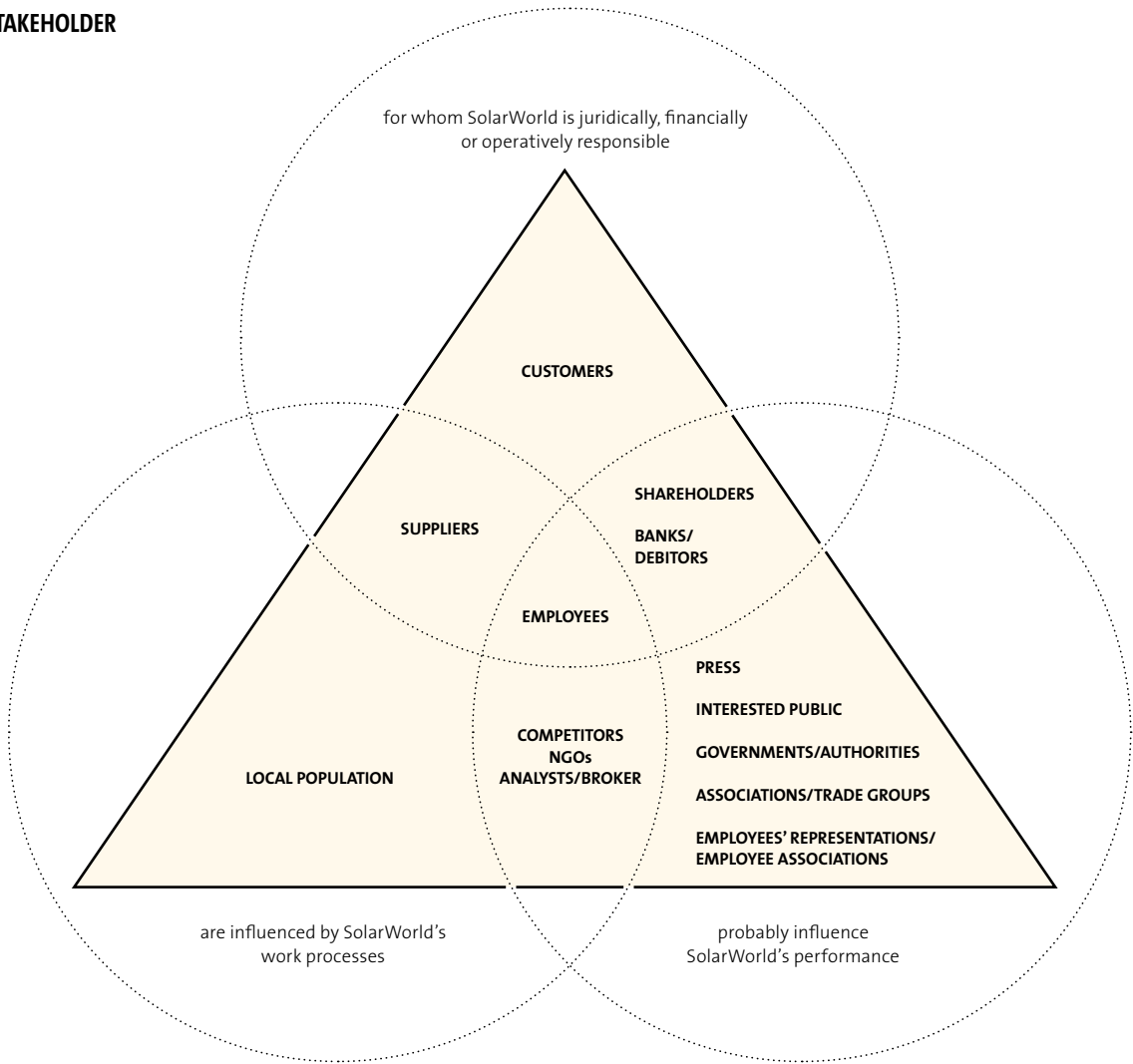
IDENTIFICATION AND SELECTION OF STAKEHOLDERS

Based on Mason and Mitroff, 1981, and the criteria of the AccountAbility standards AA 1000 SES, we use the following questions to determine the stakeholder groups:

- Who are we responsible for (in legal/financial/operational terms)?
- Who is directly or indirectly affected by/dependent on our activities or the impact of such activities?
- Who is in a position to influence (hamper/promote) or decide about implementation of our activities?
- Who are we in close contact with or maintain long-term relationships with?
- Who has voiced their opinion on issues of relevance to us?
- Which groups (formed by demographic or other characteristics) are likely to be interested in our activities and the results of these activities?

We maintain contact to all stakeholder groups, particularly intensively to the stakeholders for whom we bear direct responsibility.

STAKEHOLDER



G 25

The figure above provides an overview of our stakeholders based on the scheme underlying the AA 1000 Standards which is made available by a member organization, the not-for-profit Institute of Social and Ethical Accountability.

G4-26+27

DIALOGUE WITH STAKEHOLDERS

SolarWorld's management analyzes the needs and concerns of stakeholder groups in different degrees of depth, depending on how influential they are.

Every year, we conduct a survey of our stakeholders as part of the materiality analysis. This gives stakeholder groups the opportunity to say which topics are particularly relevant to them. The subsequent evaluation of responses is then included in the sustainability report. In addition, once every year, we survey our customers and hold extensive discussions with our Partner Advisory Board. Customer surveys are carried out among our wholesalers and installers. Because our business model is not a typical B2C business, we do not directly survey end customers. Purchasing has stepped up communication with our suppliers in recent years and organizes regular supplier days. We also evaluate our suppliers in a supplier rating scheme. Our employees are regularly surveyed, too. We aim to address the highlighted issues with appropriate measures.

We maintain close links with the communities at our SolarWorld sites and discuss specific concerns. For projects under our Solar2World program ► www.solarworld.de/en/solar2world, we donate solar modules to NGOs who use the modules for projects in developing countries. NGOs submit applications to us and establish contact with local project partners. Then, in these projects, we team with regional representatives to find solutions that provide the greatest possible benefit to local people and which can be implemented by local partners.

Thanks to our membership in associations and interest groups as well as our cooperative initiatives with scientific institutions, we maintain a regular dialog on social policy issues with stakeholders. We discuss life cycle, recycling and sustainability e.g. with Eurosolar and the Silicon Valley Toxics Coalition (SVTC). We also maintain dialog with the Solar Energy Industry Association (SEIA) – locally in Oregon (OSEIA), Florida (FlaSEIA) and California (CALSEIA) – specifically concerning political issues and trade complaints.

We offer all stakeholders the opportunity to contact us any time via ► [placement\[at\]solarworld.com](mailto:placement[at]solarworld.com) and ► [sustainability\[at\]solarworld.com](mailto:sustainability[at]solarworld.com). Alternatively, stakeholders have the option of sending us an email – even anonymously via SolarWorld SpeakUp if desired – via a contact form on the website.

The Communication on Progress along the 10 Principles of the Global Compact is carried out through group reporting, which means it is available to all interested parties. Stakeholder initiatives can even influence the implementation of these principles, for example via networks built by/with interest groups or standards requested by stakeholders. As a result, the company is largely aware of the stakeholders' needs and will take them into account in its decision-making processes.

STAKEHOLDERS

Main stakeholders	Instruments
Employees	Direct contact, employee surveys, works councils, company suggestions scheme
Applicants	Direct contact, company presentations
Customers (wholesalers, installers, end customers)	Direct contact, annual customer survey
Suppliers	Direct contact, supplier surveys, supplier days
Shareholders and investors	Direct contact, feedback after road shows, corporate news, Annual General Meeting
Banks/creditors	Direct contact
Residents/local population	Direct contact e.g. during events on the SolarWorld site, in the event of concerns or complaints voiced; for Solar2World projects direct involvement in the project
Other stakeholders	Instruments
Analysts/brokers	Direct contact, feedback after road shows, investor days, corporate news
Governments/authorities	Direct contact
Non-governmental organizations (NGOs)	Networks, discussion forums
Interested public	Reporting, corporate news
Employees' representatives/employee associations	Direct contact in meetings and negotiations
(Professional) associations/industrial trading groups	Direct contact via networks, trade shows, etc.
Competitors	Market research
Press	Interviews, press releases, press conferences

ENGAGEMENT IN NETWORKS AND INITIATIVES

G4-16

MEMBERSHIPS

SolarWorld holds the following memberships:

VOLUNTARY MEMBERSHIP OF ASSOCIATIONS AND ADVOCACY ORGANIZATIONS

Organization	Since	Member	Function
FlaSEIA (Florida Solar Energy Industries Association)	1989	SolarWorld Americas Inc.*	Board member
Semiconductor, Environmental, Safety and Health Association	1989	SolarWorld Americas Inc.*	Member
ASQ (American Society for Quality)	1992	SolarWorld Americas Inc.*	Member
Singapore Natinoal Employers Federation (SNEF)	1996	SolarWorld Asia Pacific Pte Ltd.	Member
UL/PV section	1997	SolarWorld Americas Inc.*	Advisory Council member
NFPA (National Fire Prevention Association)	1998	SolarWorld Americas Inc.*	Member
DGS (Deutsche Gesellschaft für Sonnenenergie) e.V.	1998	SolarWorld AG	Member
Eurosolar	1999	SolarWorld AG	Member
FSEC (Florida Solar Energy Center)	2000	SolarWorld Americas Inc.*	Board member
Dresdner Gesprächskreis der Wirtschaft und Wissenschaft e.V.	2002	SolarWorld Industries Sachsen GmbH	Member
Bundesverband Solarwirtschaft	2003	SolarWorld AG/Milan Nitzschke	Member (Board member since 2007)
Silicon Saxony e.V.	2003	SolarWorld Industries Sachsen GmbH	Member
Verband der industriellen Energie- und Kraftwirtschaft (VIK)	2005	SolarWorld Industries Sachsen GmbH	Member
“Technische Universität Bergakademie Freiberg” foundation	2006	Prof. Dr. Peter Woditsch	Member of the foundation council
Stifterverband für die Deutsche Wissenschaft	2006	Mario Behrendt	Member of the regional trust for central Germany
The Association of Chartered Certified Accountants (ACCA) and the Malaysia Institute of Accountants (MIA)	2006	Cheryl Liew	Member
OSEIA (Oregon Solar Industry Association)	2007	SolarWorld Americas Inc.	Board member
Zoologisches Forschungsmuseum Alexander Koenig, Leibniz-Institut für Biodiversität der Tiere	2007	Dr.-Ing. E. h. Frank Asbeck	Chairman of the trustees of the Alexander-Koenig-Gesellschaft
Hillsboro Chamber of Commerce	2007	SolarWorld Americas Inc.	Member
Columbia-Willamette Compensation Group	2007	SolarWorld Americas Inc.	Member
Portland Business Alliance	2007	SolarWorld Americas Inc.	Member
Portland Human Resource Management Association	2007	SolarWorld Americas Inc.	Member

Organization	Since	Member	Function
CALSEIA (California Solar Energy Industry Association)	2008	SolarWorld Americas Inc.	Member
Foundation council of the Mittelsächsisches Theater foundation	2008	Mario Behrendt	Member
Oregon Business Association	2008	SolarWorld Americas Inc.	Member
Westside Transportation Alliance	2008	SolarWorld Americas Inc.	Member
UN Global Compact	2009	SolarWorld AG	Member
Centre of Excellence for TPM at Ansbach University	2010	SolarWorld Industries Sachsen GmbH/Mario Behrendt	Member
Gesellschaft für Datenschutz (GDD) e.V.	2011	SolarWorld Industries Sachsen GmbH/Thomas Leuschel	Member
Greater Portland Construction Partnership	2011	SolarWorld Americas Inc.	Member
South African Photovoltaic Industry Association	2011	SolarWorld Africa (Pty) Ltd./Gregor Küpper	Member
Sustainable Energy Society of Southern Africa	2011	SolarWorld Africa (Pty) Ltd.	Member
South African-German Chamber of Commerce	2011	SolarWorld Africa (Pty) Ltd./Gregor Küpper	Advisory board member/Member of the Regional Council Western and Eastern Cape, Head of Portfolio Energy & Renewable Energy for Western and Eastern Cape
Enerplan	2011	SolarWorld France SAS	Member
Sustainable Energy Association of Singapore (SEAS)	2011	SolarWorld Asia Pacific Pte Ltd.	Member
Clean Energy Council, Australia	2011	SolarWorld Asia Pacific Pte Ltd.	Sponsoring Member
Asia Photovoltaic Industry Association (APVIA)	2011	SolarWorld Asia Pacific Pte Ltd.	Member
Renewable Energy & Energy Efficiency	2012	SolarWorld Americas Inc.	Advisory board member
Photovoltaic Austria	2012	SolarWorld AG	Member
MX: Membership in Manufacturing Excellence	2012	SolarWorld Industries Sachsen GmbH	Member
Utah Solar Energy Association (UT Solar)	2012	SolarWorld Americas Inc.	Member
Solar Oregon	2012	SolarWorld Americas Inc.	Member
Hawaii Solar Energy Association	2012	SolarWorld Americas Inc.	Member
European industry initiative EU ProSun	2012	SolarWorld AG/Milan Nitzschke	Supporter/Chairman
Solar Electric Power Association	2013	SolarWorld Americas Inc.	Member
Solar Austin Foundation	2013	SolarWorld Americas Inc.	Member
IEK (Initiative Erfurter Kreuz)	2014	SolarWorld Industries Thüringen GmbH	Member
Landesverband Erneuerbare Energien NRW e.V (LEE)	2015	Milan Nitzschke	Board member
ThEEN e.V. (Thüringer Erneuerbare Energien Netzwerk)	2015	SolarWorld Industries Thüringen GmbH	Member
Mid-Atlantic Solar Energy Industries Association	2015	SolarWorld Americas Inc.	Member

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* This includes the former Shell Solar/Siemens Solar/Arco Solar.

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PARTICIPATION IN INITIATIVES

SolarWorld participates in the following initiatives:

PARTICIPATION IN INITIATIVES

	Time-frame	Locations	Established by/including	Motivation
Application of: a) DIN ISO 9001 b) DIN ISO 14001 c) DIN ISO 50001 d) BS OHSAS 18001	Since: a) 2004 b) 2010 c) 2013 d) 2012	a) SolarWorld group b) SolarWorld group (since 2014 without sales sites in ROW) c) German production sites d) Solar Industries Sachsen (module production), SolarWorld Industries Thüringen (module production), SolarWorld Americas Inc. (module production and logistics), SolarWorld Holding	a) – c) ISO d) BSI	Voluntary
Member of the UN Global Compact	Since 2009	SolarWorld group	United Nations	Voluntary
Reporting in accordance with KPIs and KPNs for ESG by EFFAS/DVFA	Since 2008	SolarWorld group	EFFAS/DVFA	Voluntary
Code of Conduct	Since 2013	SolarWorld group	Employees	Voluntary
Reporting under the GRI framework	Since 2007	SolarWorld group	GRI, based on a world-wide multi-stakeholder dialog	Voluntary
Participation in the Carbon Disclosure Project (CDP)	Since 2005	SolarWorld group	Institutional investors	Voluntary

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AWARDS



GREEN BRANDS 2015/2016

SolarWorld qualified once again for the GREEN BRANDS seal. The seal is awarded annually to brands with a proven track record of environmentally sustainable actions both inside and outside the company. GREEN BRANDS is an international and independent brand marketing organization headquartered on the “emerald isle” of Ireland. The internationally acknowledged certificate is awarded following a challenging three-stage process (nomination, validation and final evaluation by an independent jury). The award underpins the SolarWorld group’s environmental responsibility and sustainable corporate governance.



PORTLAND BUSINESS JOURNAL “MANUFACTURER OF THE YEAR” (CATEGORY: 501+ EMPLOYEES)

The Portland Business Journal has honored SolarWorld as its 2016 “Manufacturer of the Year” in the category of companies with more than 500 employees. With its annual awards, the Portland Business Journal honors “manufacturing companies in Oregon and Southwest Washington for outstanding and innovative practices,” according to the newspaper. SolarWorld was given special credit for overcoming obstacles that included contending with China’s trade interventions and restructuring the company’s debt as well as expanding its Hillsboro factories and workforce.



SOLAR SOLUTIONS INT. “SOLAR SOLUTIONS INNOVATIONS AWARD”

During the exhibition Solar Solutions SolarWorld won the Solar Solutions Innovation Award with the bifacial “Sunmodule Bisun”. In their decision, the jury agreed: Higher yields, high efficiency and the proven quality of the SolarWorld products convinced unanimously. Thanks to these advantages, installers are also able to achieve a higher margin.

REVIEWS.COM “BEST OVERALL SOLAR PANEL 2016”

Among 188 contenders, SolarWorld stood at the top of U.S. rating platform Reviews.com’s best solar panels of 2016. In terms of quality, experience and customer service we topped the list and received the award “Best Overall Solar Panel”. Nine different SolarWorld modules underwent testing, including the Sunmodule Plus SW 300 Mono (5 busbars), which had the highest module efficiency of the whole test field with 17.89 percent.

PERFORMANCE INDICATORS

ECONOMIC SUSTAINABILITY

G4-EC1+4+7

ECONOMIC VALUE

This list is intended to provide information on the total economic value generated directly by the company and how

it is used, in particular the ratio between distributed and retained economic value. It is considered in monetary terms.

DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

in k€	2016	2015	2014	2013	Comment
a) Income	865,662	853,290	797,084	510,172	Sales revenues + other operating income + net income from investments accounted for using the equity method + interest and other financial income
Distributed monetary value					
b) Operating expenses	-793,487	-712,201	-605,510	-591,406	Changes in inventory of products + own work capitalized + material costs + depreciation + other operating expenditure
c) Salaries and company benefits	-171,850	-157,989	-138,281	-112,366	Personnel expenditure
d) Payments to capital providers	-33,642	-27,945	519,356	-71,803	Interest and other financial expenses + net earnings from financial instruments
e) Payments to public authorities	-2,736; Germany: -464; France: -1,990; USA: -33; Singapore: -62; South Africa: -183; Japan: -4	-744; Germany: -264; France: -168; USA: -43; Singapore: -17; South Africa: -251; Japan: 0	-3,073; Germany: -2,642; France: -158; USA: -37; South Africa: -180; South Africa: -56	-3,383; France: -2,091; USA: -1,177; Singapore: -48; South Africa: -67	Taxes income (without deferred taxes) ► 16. Income taxes – p. 109
f) Investments in the community	-49	-165	-119	-101	Donations in money and in kind (donations to political parties are not included and have not been made since 2010)
Retained monetary value (negative: reversal of retained monetary value)	-136,102	-45,754	569,457	-268,887	

No significant investments in infrastructure and services, provided mainly for public benefit, were made in 2016. We assume positive and negative effects of our activities to be balanced. However, a needs analysis was not performed. Nevertheless, we support such investments in the

infrastructure and in services via our Solar2World projects through module donations to, for example, schools, hospitals or radio stations in developing countries. In 2016, 129 (2015: 113) kWp were delivered in the context of Solar2World.

FINANCIAL ASSISTANCE RECEIVED FROM GOVERNMENT

in k€	2016	2015	2014	2013
Investment grants	0	1,247	8,288	10
Research grants	6,941	8,015	7,373	7,195

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There is no government body holding shares in SolarWorld AG. In Germany, the group pays the EEG levy. The production sites at Freiberg and Arnstadt pay a reduced EEG levy amounting to € 1.2 million. Furthermore, the electricity tax paid by the production sites in Germany is reduced by around 84 percent (equivalent to around € 1 million).

G4-12+EC9 PROCUREMENT

We obtain materials and resources from suppliers around the world. At the same time, we aim to build trusting partnerships with our suppliers and seek to develop long-term business relationships. To promote dialog, we have instituted a regular forum, the “SolarWorld Supplier Day.” Sustainability issues are discussed here, too. Specific support is provided to suppliers via our supplier development program. This is another way in which we aim to develop long-term business relationships. ► *Production and global supply chain – p.037*

Our global procurement is strategically important, ensuring security of supply for production and making a large contribution to reducing the cost of materials. Both factors strengthen our competitiveness. In total, we spent around € 600 (2015: 650) million on goods and services in 2016. Bill of materials (BOM) and balance of system (BOS) suppliers accounted for nearly 70 (2015: 65) percent of procurement costs. Other auxiliary materials and operating supplies made up approx. 6.5 (2015: 5.0) percent. Measured in terms of procurement costs, 55 (2015: 35) percent of BOM and BOS suppliers came from Europe and the United States. Roughly 40 (2015: 64) percent came from Asia. The geographical location of suppliers is not a very important consideration, but their score in supplier ratings is increasingly significant. In addition to commercial criteria, quality, technology, logistics and sustainability are taken into consideration. Sustainability makes up 15 percent of the total rating score. The suppliers audited in 2016 had certifications according to the following standards:

- Quality management system ISO 9001: 94 (2015: 98) percent
- Environmental management system ISO 14001: 73 (2015: 75) percent
- Occupational health and safety management system OHSAS 18001: 38 (2015: 48) percent
- Energy management system ISO 50001: 23 (2015: 33) percent

55 (2015: 38) percent of our suppliers publish a sustainability report. Key suppliers are also subject to on-site audits in accordance with a company directive. These take place every two to three years, on average. Audit frequency depends in part on risk assessment. Criteria for the risk assessment include, for example, the materials we obtain from the supplier, whether this is a new supplier and which country they are based in and what certification they can show. In the 2016 fiscal year, 23 (2015: 26) percent of our suppliers underwent a risk assessment. Focuses of our audits include the supplier's management systems, quality and sustainability aspects. As a principle, all new suppliers or production sites are audited and also if there are persistent quality problems.

To assess the supply chain as a whole, we use the "risk methods" software tool, which systematically analyzes potential risks based on publicly available information. For instance regarding the non-use of conflict materials, the tracing of the source, origin or production conditions within the value chain has been achieved through self-reporting. Because our procurement is global, there is a risk in principle of child or forced labor in the supply chain. However, this is expressly forbidden in our Supplier Code of Conduct. Our suppliers are informed about our Supplier Code of Conduct. The code forms part of our general terms and conditions and can be accessed at ► www.solarworld.de/en/code-of-conduct-for-suppliers.

G4-EC2

CLIMATE CHANGE: OPPORTUNITIES AND RISKS

Our management takes account of the effects of climate change on our business activities via the opportunities and risks management. ► [Management report forecast – p. 058](#)

We see more opportunities than risks for SolarWorld, given the great upsurge in interest in solar energy over recent years, which is partly a result of the climate debate. An important milestone in this debate was the UN Climate Change Conference held in Paris at the end of 2015. Among other things, this conference agreed to limit the rise in average temperature to notably below 2 degrees Celsius on the pre-industrial level. Additionally, an investment fund of 100 billion dollars annually is to be set up from 2020 to 2025 for the removal of climate damage and for the switch to a globally sustainable energy supply. Emission-free and low-risk energy supply can only be implemented with the help of renewable energies, an area where photovoltaics make a significant contribution. The United Nations officially recognizes solar energy as a source of energy that has net zero greenhouse gas emissions. We therefore expect solar energy to achieve competitive advantages over conventional energy sources in the long term. On the one hand, solar energy offers major potential for decentralized energy supply and thus lower line and distribution costs. National dependence on imports of energy resources can also be reduced.

SolarWorld is faced with the following regulatory, physical and other risks.

REGULATORY, PHYSICAL AND OTHER RISKS

Risk driver	Description	Potential impact	Timeframe	Impact – Direct/ Indirect	Probability of occurrence	Magnitude of impact
Renewable energy regulation	Changes in regulations on renewable energies that hinder the use of solar energy in key markets.	Decline in demand for products/ services	Currently	Indirect (Client)	Medium	High
Taxation and regulation of fuels/energy	Higher operating costs for transport (of goods) and journeys by employees to/from the place of work.	Increased costs in the value chain	2–5 years	Direct	Medium	Moderate
Uncertainty concerning future regulation	Uncertainty concerning the medium and long-term development regarding regulation of renewable energies in key markets.	Decline in demand for products/ services	2–5 years	Indirect (customers)	Medium	High
Uncertainty concerning future regulation	As a result of the political change in the U.S., there is the possibility that the U.S. will withdrawn from international environmental protection commitments.	Reduction of financial resources and regulatory incentives and thus declining demand	1–5 years	Indirect (customers)	Medium	Moderate
Other physical climate drivers	Just like other companies, we are also affected by climate change; however, we are not hindered to any particular extent by special factors.	Decline in production capacity/interruption of production	Currently	Direct	Medium	Low to moderate
Company image	Parts of the general public tend to have a negative attitude towards solar energy as a result of the discussion concerning the regulation of renewable energies, the trade litigation in the U.S. and the EU trade complaint in the U.S. and in the EU.	Decline in demand for products/services	Currently	Indirect (customers)	Medium	Moderate

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The risks stated can have financial effects if they materialize, for example through a decline in demand, production or increased costs. An important part of our business activities is therefore aimed at developing new, more efficient products, reducing costs and acquiring customers in new markets, in order to minimize or spread the effects of these risk drivers. The biggest physical risks identified by the Intergovernmental Panel on Climate Change (IPCC) include the rise in sea levels, water shortage, hurricanes and typhoons as well as flooding and drought, depending on the respective region. Although SolarWorld is not a company whose geographical location makes it particularly affected by physical climate risks, our company is also exposed to a general risk resulting from extreme weather conditions. For example, damage to buildings or systems, interruption of operations or impairment of the upstream and downstream parts of the value chain could result in high financial burdens. We reduce

this risk through ongoing insurance cover against damage through storm, hail, snow loads, avalanches, flooding, ground submergence and landslides. Apart from damage to buildings and systems, our insurance also covers reduced profits, caused by interruption of operations resulting from property damage related to the above mentioned risks, suffered by SolarWorld or our suppliers. This reduces the financial risk overall; however, it cannot be fully eliminated.

The risk associated with a negative company image can have negative financial effects resulting from a drop in sales. Measures here involve, above all, the dialog with stakeholders and ongoing participation in the political debate. Overall, the costs of the bundle of preventative measures are lower than possible costs that would be incurred by the company without these measures.

SolarWorld has the following regulatory, physical and other opportunities.

REGULATORY, PHYSICAL AND OTHER OPPORTUNITIES

Opportunity driver	Description	Potential impact	Timeframe	Impact – Direct/ Indirect	Probability of occurrence	Magnitude of impact
General environmental standards, including planning standards	As the problem of climate change is increasingly becoming a focal point of public attention worldwide, new regulations and directives are being implemented, aimed at reducing CO ₂ emissions through the introduction of green technologies and products. Following the nuclear accident in Fukushima, politicians are increasingly recognizing the importance of renewable energies as one of the key solutions. Over the course of recent years, the use of low-emission products as a contribution towards climate protection has developed into an important market worldwide. For companies like SolarWorld whose products offer solutions for reducing climate change, new guidelines on climate protection represent important business opportunities.	Rising demand for existing products/ services	1–5 years	Direct	Medium	Moderate to high
International agreements	The European Union has declared its willingness to reduce its share of greenhouse gas emissions by 20 % by 2020. One way of achieving this target is by raising the share of renewable energies in the energy mix by 2020. The 2015 UN Conference on Climate Change in Paris approved an international agreement that provides for a limit on average temperature rise to notably below 2 degrees and a switch to a sustainable energy supply.	Rising demand for existing products/ services	2–10 years	Direct	Medium	Moderate
CO ₂ taxes	A CO ₂ tax would support the use of renewable energies such as solar energy.	Rising demand for existing products/ services	6–10 years	Indirect (Customers)	Low	Moderate
Regulations and standards in the field of product labeling	Credible product labeling for high product quality as well as high ecological and social standards facilitate the purchasing decision for customers.	Rising demand for existing products/ services	1–5 years	Indirect (Customers)	Medium	Low to moderate
Further climate opportunities	Changing physical climate parameters are a clear argument in favor of the use of solar energy. Extreme weather conditions are increasing public awareness of the extent of these risks.	Rising demand for existing products/ services	6–10 years	Indirect (Customers)	Medium	Moderate
Changing consumption patterns	Solar systems are becoming increasingly popular because they reduce energy costs and increase energy independence.	Rising demand for existing products/ services	1–5 years	Direct	High	Moderate
Company image	Positive image of a company that invests in clean products and a sustainable society.	Possible assertion of higher prices	1–5 years	Direct	High	Moderate

We use our life cycle analysis to determine the environmental characteristics of our products and present the results in a detailed and transparent manner in the annual report to the Carbon Disclosure Project (CDP). This is a unique selling point compared to our direct competitors, as product sustainability and transparency are increasingly important to customers and governments. In addition, the lifecycle analysis enables the identification of potential for optimization, which serves as a decision-making aid for cost reductions in the product lifecycle. Optimized cost structures and further technological progress enable further reductions in the price per watt peak and continued improvement of our competitiveness.

Regarding the opportunities associated with regulation, positive financial effects can result from a possible increase in demand as well as through higher prices for high-quality products on the market. Solar energy constitutes an important alternative for the production of environmentally friendly and low-risk electricity. At the same time, stricter climate-protection standards are increasing our business potential. This opportunity can be exploited among other things through marketing campaigns to raise public awareness, as well as lobbying with the aim of gaining the support of politicians for a sustainable energy supply. Physical changes caused by climate change (for example drought, flooding, storms) are increasing public awareness. This confirms our core business and creates opportunities for the company. The financial effects can therefore be assessed as positive. At the same time, we are involved in the public political debate on an ongoing basis. These costs are part of general marketing and PR costs; here too however, we assume that the positive financial effects will outweigh the costs.

What does LOHAS mean?

Lifestyles of health and sustainability – a lifestyle of strong awareness of health, oriented towards sustainability principles. People that follow such a lifestyle particularly pay attention to their consumption and reduce their negative impact on the environment.

Changing consumption patterns towards a LOHAS orientation can stimulate demand for sustainable power and thus have a positive effect on our business. In terms of the image of the company, financial opportunities can result from a whole series of factors, for example from greater brand awareness, increased support by our stakeholders and the reputation of being an attractive employer. To make use of this opportunity, we engage in sustainable corporate management and communication of our successes in the field of sustainability: for example through campaigns, annual reports as well as corresponding marketing measures. It is not possible to quantify the costs of climate protection and climate adaptation, as the measures set out are on a much broader base. We assume that the positive financial effects will outweigh the costs.

The total costs spent on dealing with risks and opportunities are not yet being collected.

ECOLOGICAL SUSTAINABILITY

SolarWorld supplies the technology for converting sunlight into electricity. Manufacturing this technology is resource and energy-intensive, and represents a powerful cost lever for the group. At the same time, it involves a direct environmental impact. Economic and ecological effects are closely linked, particularly when it comes to resource consumption, and often move in the same direction. For example, efficiency measures usually pay off twice. This is not the case with trade-offs, where the effects run counter to one another: For example, when using a different material has lesser environmental impacts, but means higher costs. To take account of the supply chain's environmental impacts, SolarWorld conducts a life cycle analysis for our modules from the extraction of raw materials onward. This analysis is performed using the SimaPro software application and the ecoinvent life cycle inventory database.

Internal and external verifications are carried out regularly. Internal reviews are conducted by the Internal Audit department and via cross audits, in which departments at different sites review each other. External reviews take place for certification under the quality management standard DIN ISO 9001, the environmental management standard DIN ISO 14001, the occupational health and safety framework BH OHSAS 18001 and the energy management standard DIN ISO 50001. No significant deviations were found during the audits. We also possess an established Teamwork Production Management (TPM) system, which is aimed at comprehensive process optimization and efficiency improvements. ► *Production and global supply chain – S.037*

Data for 2016 is generally estimated and provisional: Data for the month of December and for the sales sites in France, the UK, South Africa, Japan and Singapore were projected, based on the previous year's figures for the same month and comparative locations. This is necessary firstly because there is a delay before utility bills are sent out, which means they cannot be taken into account in the report. Secondly, a flat fee is charged for utilities in some cases as part of the office rent for the sales sites. In this section, we generally report indicators that relate to the entire group. Exceptions are indicated in the appropriate places. Data is updated, if necessary, in our annual disclosure via the Carbon Disclosure Project (CDP). If more recent data or calculation methods become available, data for previous years is adjusted, where necessary. We note this accordingly with the respective indicators.

G4-EN29+34

In 2016, we had no complaints about environmental impacts registered. There were no environmental violations and no sanctions.

ENVIRONMENTAL GOALS 2020

Since early 2013, we set ourselves global environmental goals with a time horizon to 2020. These goals are broken down across individual sites and translated into specific measures. We report on progress annually, and quarterly assessments are carried out internally via the management review. Goals that we have not yet achieved, or in which the degree of achievement has worsened, show us that we need to develop and exploit potential for improvement. If we achieve an environmental goal earlier than 2020, we will set ourselves a new challenging goal.

ENVIRONMENTAL GOALS 2020

	Unit	Base year 2012	Goal 2020/ percentage change	Status 2016/ percentage change vs. 2012
Energy & climate protection				
Groupwide energy consumption	kWh/Wp	0.63	0.47 -25 %	0.44 -30 %
Cumulated energy demand (life cycle)	MJeq/Wp	9.93	7.45 -25 %	7.14 -28 %
Groupwide CO ₂ emissions	kgCO _{2eq} /Wp	0.45	0.29 -35 %	0.31 -31 %
Global Warming Potential (life cycle)	kgCO _{2eq} /Wp	1.33	0.98 -25 %	0.71 -46 %
Average CO ₂ emissions from passenger cars in the SolarWorld vehicle fleet (new passenger cars)*	kgCO _{2eq} /Wp	152 (all passenger cars)	95 -38 %	127 -16 %
Water				
Specific volume of water consumption	m ³ /MWp	2,253	1,802 -20 %	1,813 -20 %
Specific volume of waste water discharge	m ³ /MWp	1,738	1,564 -10 %	1,646 -5 %
Waste				
Specific volume of waste	t/MWp	26.9	24.2 -10 %	28.0 4 %

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* The emissions data which takes account of the corrected levels following the Volkswagen emissions scandal is not currently available. We therefore use the original data for our calculations.

CO₂-equivalent (CO_{2eq})

The famous carbon dioxide, also known as CO₂, is not the only gas that impacts our climate. However, not all gases contribute to the greenhouse effect to the same extent. In order to make their respective impact comparable, the Intergovernmental Panel on Climate Change (IPCC) has decided that the effect of different greenhouse gases can be translated into CO₂ equivalents and thus can be summed up.

The abbreviation for this is CO_{2eq}.

G4-EN1+2 MATERIALS USED

Material consumption has increased groupwide once again due to rising production volumes. It increased by 12 percent, compared with the previous year. For example, more than 4,000 metric tons of silicon and more than 50,000 metric tons of glass were used to manufacture solar power modules. To date, it has not been possible to obtain reliable data on a recycling rate for our input factors. Therefore, we can only state the proportion that is recycled directly at our site.

MATERIALS USED

in t	2016	2015	2014	2013
Total materials used	2,053,863	1,835,952	1,533,213	1,156,075
of which materials purchased from external suppliers	2,031,667	1,815,886	1,519,370	1,143,012
of which materials obtained from internal sources	22,196	20,065	13,842	13,064
of which raw materials	5,018	4,513	3,508	3,002
of which associated process materials	1,970,346	1,694,701	1,449,181	1,040,430
of which semi-manufactured goods or parts	72,955	132,024	76,547	109,920
of which materials for packaging purposes	5,544	4,714	3,976	2,724
Non-renewable materials	139,118	201,322	129,171	144,525
Direct materials	72,955	125,026	76,547	109,920
Recycled input materials (without upstream chain)	2,850	9,540	20,945	22,270
Percentage of recycled input materials	0.14 %	0.52 %	1.37 %	1.93 %
Hazardous substances (HF, Pb, HNO ₃ , POCl ₃ , Silane, NaOH, HCl, KOH, NH ₃)	11,640	6,674	8,785	4,862

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The auxiliary materials that we use are subject to a quality assessment (e.g. with regard to legal requirements, technology and process control), as well as a quantity assessment. A summary of the assessment is produced at least annually in the analysis of environmental impacts. In addition, goals and measures are defined to reduce the consumption of materials (e.g. reduction in chemical usage in cell production). We comply with the respective legal requirements regarding hazardous substances. So far we have not collected data on paper consumption in the group. However, since 2015, we have predominantly used recycled paper carrying the Blue Angel seal at the company's headquarters in Bonn.

LAND USE

Land use has an environmental impact, too, and should therefore be considered, especially when land is overbuilt or sealed. Land use increased slightly. Office space at our international sales sites is estimated based on the respective number of employees.

LAND USE

in m²	2016	2015	2014	2013
Total holding area	945,002	943,475	1,095,951	906,182
of which sealed area	398,501	338,932	352,717	348,155
of which built-over area	258,702	256,413	249,588	185,980

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G4-EN3

ENERGY CONSUMPTION INSIDE THE GROUP

We bear responsibility for the environmental impacts resulting from our value chain, including energy consumption. Manufacturing solar power modules uses large amounts of energy. However, our solar power modules recover this energy by a multiple amount during their useful life. ► *Environmental commitment – p. 040* The energy that we consume comes from primary energy sources (gas, heating oil, gasoline) and secondary energy sources (electricity, local

heat). We recorded rising energy requirements in 2016. Electricity and natural gas are the largest energy sources across the group. The increase is due primarily to our higher output and to the further ramping-up of monocrystallization. Numerous energy-saving measures were implemented too, however. The new diamond wire saws as well as new energy-saving plants in the monocrystallization were the measures that have the greatest individual saving potential.

The proportion of renewable energy is the same as that of the local energy mix and is projected for the group.

ENERGY CONSUMPTION INSIDE THE GROUP

	2016	2015	2014	2013
Direct primary energy consumption in MJ	237,760,009.6	215,694,944.6	189,686,415.1	203,336,522.9
of which gas	236,511,659.0	212,567,790.6	188,539,552.0	202,675,836.7
of which heating oil	390,236.3	569,827.4	484,651.4	68,724.9
of which diesel	736,349.5	2,058,436.8	571,082.4	589,721.3
of which gasoline	5,917.1	402,494.4	3,484.8	2,240.0
of which other	115,847.7	96,395.4	87,644.5	0.0
Secondary energy consumption in MJ	1,383,907,306.9	1,316,301,581.2	904,515,835.4	747,828,820.8
of which electricity	1,383,339,118.9	1,315,376,262.4	903,084,536.6	747,828,820.8
of which local heat	568,188.0	925,318.8	1,431,298.8	0.0
Indirect primary energy consumption in MJ	4,428,503,382.1	4,212,165,060.0	2,894,450,673.4	2,393,052,226.6
of which electricity	4,426,685,180.5	4,209,204,039.8	2,889,870,517.2	2,393,052,226.6
of which local heat	1,818,201.6	2,961,020.2	4,580,156.2	0.0
Total primary energy consumption in MJ, i.e. direct and indirect consumption	4,666,263,391.7	4,427,860,004.6	3,084,137,088.5	2,596,388,749.5
Proportion of renewable energies in the electricity mix	35.9%	35.8%	34.5%	35.1%
Self-generated electricity in kWh (by own PV systems) fed into the grid	12,376,951.6	16,766,498.2	10,940,024.1	8,648,224.6

T 59

G4-EN4-7

ENERGY CONSUMPTION IN THE VALUE CHAIN

As part of its integral reporting, SolarWorld also discloses the energy consumption in the value chain. Since there is no information available on the energy consumption of the upstream value chain, e.g. of our suppliers, we use corresponding information from appropriate databases. When calculating energy consumption in the lifecycle, we take into account all processes and input factors from raw material production to the completion of our products (“cradle-to-gate”). The “cumulated energy demand” calculated in this way indicates how energy-intensive our products are to manufacture.

Energy intensity is stated per product unit, i.e. in watts peak. This figure for 2016 stood at $7.14 \text{ MJ}_{\text{eq}}/\text{Wp}$ groupwide. With a shipment volume of 1,375 (2015: 1,159) MWp, this equates to 9,816 (2015: 8,658) TJ_{eq} in absolute figures. For further information, please refer to the Management Report ► *Environmental commitment – p. 040*

CUMULATIVE ENERGY DEMAND IN $\text{MJ}_{\text{eq}}/\text{Wp}$

2016		7.139346
2015		7.474076
2014		6.265686
2013		9.095838

The cumulative energy demand describes how much energy is needed for the production of a watt peak (Wp).

G 26

G4-EN8-10

WATER CONSUMPTION

Water is essential, too, in the production of crystalline solar power technology. Our new diamond wire saws use water to cool the cutting wire and flush out sawing dust. Changing to this technology will mean increased water consumption in the medium term. In 2016, our water consumption rose by 6.9 percent. Water consumption per production unit also increased, to 1,813 (2015: 1,637) m^3/MWp .

In 2016, we implemented efficiency increases at all production sites, with the result that specific consumption rose to a lesser extent than the production volume.

We obtain fresh water from the regional water supply companies. At Freiberg, water comes from the Lichtenberg dam reservoir and the Hüttenteich, another artificial lake. Water at the Arnstadt site is piped from a drinking water reservoir some distance away. The Hillsboro site obtains its water from the municipal water supply. We do not operate our own pumping systems. The raw water passes through various treatment stages at the production sites. Depending on the application, it is filtered, disinfected, demineralized, and its pH-level adjusted. Most of this process water (50–80 percent) is used to supply production facilities in the wafering process. Up to approx. 80 percent of this water can be recycled.

WATER CONSUMPTION

	2016	2015	2014	2013
Total water withdrawal in m³	2,028,000.7	1,981,633.7	1,538,953.3	1,168,436.7
of which surface water	796,934.0	786,439.0	922,209.0	577,878.0
of which rainwater	0.0	0.0	0.0	0.0
of which water from municipal water supply	1,231,066.7	1,195,194.7	616,744.3	590,558.7
of which ground water	0.0	0.0	0.0	0.0
Water recycled/reused in m³	62,771.7	66,191.7	16,911.7	135,473.5
Water recycled/reused as a percentage of total water withdrawal	3.1 %	3.3 %	1.1 %	11.6 %

TX

G4-EN22

WASTEWATER

One of SolarWorld's most important environmental goals, together with the careful use of resources, is to keep the environmental impact of production to a minimum. ► *Environmental goals – p. 197* To help achieve this, our in-plant wastewater treatment facilities include an extensive controlling and monitoring system with individual flow component collection. Of course, all production sites have a wastewater discharge authorization. In accordance with requirements, regular analyses of the wastewater quantities and the quality criteria such as temperature, pH level, electrical conductivity (e.g. by salts) or the content of adsorbable organically bound halogens (AOX) are carried out. The site-specific prescribed limit values for wastewater are monitored internally and by local agencies. Depending on its origin and constituents (e.g. sanitary wastewater, chemically contaminated wastewater), wastewater generated at the various sites is collected and pretreated in individual streams. These are then discharged to the communal wastewater system and further treated.

So far, we have very little information concerning the exact water treatment methods of the local wastewater associations. Due to the strict monitoring by local authorities, we do not expect any significant violations of regulations.

The reduction and substitution of pollutive input materials in production with water as well as the increase in production volumes entailed a rise of absolute water consumption. The specific volume of wastewater based on the unit of production (Wp) also increased. ► *Environmental goals – p. 197* The reason is simple: We shifted from slurry saws to diamond wire saws in our wafering process. To cool the wire, diamond wire saws use water instead of slurry – a mixture of polyethylene glycol and silicon carbide.

For further information, please visit our website: ► www.solarworld.de/en/water

WATER DISCHARGE

in m³	2016	2015	2014	2013
Total wastewater discharge	1,742,460.5	1,630,593.6	1,336,489.2	1,012,247.0

TX

G4-EN15-19+21 EMISSIONS

Climate change has been a driving theme for us from the beginning. Our corporate objective is to establish sustainable and CO₂-neutral energy production. Nevertheless, we too generate greenhouse gas emissions in the course of our business activities. We want to reduce these in relation to the production unit, and the corresponding ► *Environmental goals – p. 197* are intended to prepare the way for us.

We calculate scope 1 and scope 2 emissions based on our energy consumption figures and using calculation tools of the GHG Protocol. Direct emissions in our case arise mainly from the consumption of natural gas, motor fuels and other fossil fuels. Indirect emissions relate mainly to electricity consumption within SolarWorld. CO₂ emissions were up 5.5 percent, compared with the previous year, because of our increased production volumes.

To provide as comprehensive information as possible about our environmental impact, we also report Scope 3 emissions that occur upstream in the value chain and at the disposal of our waste. We do not consider the downstream value chain, as our products do not give off any emissions in use. Since we only receive limited data from our suppliers, we determine the Scope 3 emissions in the lifecycle analysis using by databases. In the 2016 fiscal year, emissions rose by 3.0 percent along our value chain.

Scope 1, 2 or 3?

The Greenhouse Gas Protocol – the international standard for calculating and distinguishing greenhouse gas emissions – subdivides emissions for which companies are responsible into different areas (i.e. scopes). Scope 1 includes all emissions caused by own installations, e.g. by burning fuel oil, gas or fuel. Scope 2 covers the emissions generated by purchased energy, i.e. electricity or district heating, which are generated outside of the company. All third-party emissions caused by our activities are comprised in Scope 3. This includes all purchased raw materials, unfinished goods and services.

GREENHOUSE GAS EMISSIONS

	2016	2015	2014	2013
Direct and indirect emissions in tCO_{2eq} (Scope 1+2)	188,227.0	178,458.4	125,568.8	95,693.0
Direct emissions in tCO _{2eq} (Scope 1)	13,824.7	11,528.9	11,708.9	11,611.0
Indirect emissions in tCO _{2eq} (Scope 2)	174,402.4	166,929.5	113,859.8	84,082.1
Indirect emissions out of the value chain in tCO_{2eq} (Scope 3)	744,913.1	723,234.0	696,301.2	-
of which emissions from purchased goods and emissions	733,382.2	696,301.0	674,032.0	-
of which emissions from upstream transportation and distribution	10,631.2	25,845.0	20,676.0	-
of which emissions from waste generated in operations	899.7	1,088.0	1,350.0	-

T 62

Details for the Scope 3 emissions have only been collected since 2014.

Information on the energy and CO₂ payback times of our modules is provided in the ► *Environmental commitment – p. 040*. Furthermore, since 2005 we have been participating in the Carbon Disclosure Project (CDP), in which we publish an annual greenhouse gas report called “program response”. A link to the current report can be found on our website.

In addition to our impact on climate change, we also consider air pollution. Even with state-of-the-art production facilities, air emissions can never be entirely avoided. Because we report on our environmental impact transparently and completely, we disclose this data, too. Due to differing local regulations, air emissions are not measured everywhere to the same extent. Data in some cases is calculated based on the substances used or the respective annual figures are extrapolated from a multi-year measurement cycle. SolarWorld does not use or release any nitrogen trifluoride (NF₃) or other perfluorocarbons during the production process.

Our German production sites are subject to the German Federal Immission Control Act (Bundes-Immissionsschutzgesetz, BImSchG) as well as local regulations on the construction, operation and monitoring of facilities that may have a detrimental environmental impact. When these facilities are commissioned, a comprehensive assessment of all relevant environmental effects is carried out, for example also those of emissions from process exhaust. Based on this assessment, a voluntary inspection program is put in place to conduct measurements during production. Our facilities are built to the latest standards and have collecting devices and exhaust air scrubbers, where necessary, to reduce emissions to a minimum. If a problem occurs in the system, an automatic shutdown of the respective production facility is triggered. In this way, we make sure that no relevant hazardous substances can escape.

At our production site in Hillsboro, too, we are subject to strict regional legislation. Our manufacturing facilities here are also equipped with exhaust air scrubbers. Here too, emission measurements are carried out regularly. Thanks to a process change, we have reduced volatile organic compound (VOC) emissions at Hillsboro.

OTHER AIR EMISSIONS

in t	2016	2015	2014	2013
U.S.				
Hazardous air pollutants	0.00	0.00	0.00	0.00
Nitrogen oxides (NO _x) ^{1, 2, 3}	38.87	18.99	15.81	9.07
Fine dust (PM10) ^{2, 3}	0.44	0.40	0.99	0.45
Persistent organic pollutants	0.00	0.00	0.00	0.00
Sulphur oxides (SO _x) ³	0.30	0.26	0.20	0.27
Exhaust gas and fugitive emissions	0.00	0.00	0.00	0.00
Volatile organic components (VOC) ^{2, 3}	30.62	35.15	37.24	28.20
Other standard air emissions (CO) ³	3.73	3.29	4.52	3.80

TX

¹Freiberg ²Arnstadt ³Hillsboro

G4-EN23

WASTE AND RECYCLING

We grew our production volumes once again in fiscal year 2016. This also had an effect on the volume of waste, which increased, too. To deal with waste, various measures and concepts for preventing waste and for in-house recycling are

planned and implemented at our sites. One point to mention here is the partially implemented change from slurry saws to diamond wire saws, where the slurry is replaced with water. The partially still used slurry consists mainly of polyethylene glycol and silicon carbide. It is reprocessed before reuse. The specific waste per production volume increased slightly as well ► [Environmental goals – p. 197](#)

WASTE AND RECYCLING

in t	2016	2015	2014	2013
Total weight of waste	32,118.9	30,702.6	23,020.6	10,013.8
of which hazardous waste	16,372.5	15,714.3	10,037.6	1,292.9
of which recycled or reused	86.8%	90.4%	85.4%	0.0%*
of which non-hazardous waste	15,746.4	14,988.3	12,983.0	8,720.9
of which recycled or reused	65.9%	69.2%	70.2%	15.8%*

TXX

At our German sites, where waste is taken away by local disposal companies, we are unable to provide a detailed breakdown of disposal methods. The disposal methods listed here are based on information from the local waste disposal contractor in Hillsboro. Hazardous waste there is neither reused nor otherwise recycled. Non-hazardous

waste is not fed to incineration, but instead, as usual in the USA, to a landfill. The commissioned waste disposal companies are carefully selected and inspected at on-site audits. We have no information that our waste disposal service providers do not comply with applicable laws and regulations.

WASTE BY DISPOSAL METHOD

in t	2016	2015	2014	2013
USA				
Recycled non-hazardous waste	1,771.8	1,440.0	1,669.7	1,205.7
Recovered non-hazardous waste	10.9	21.1	11.5	139.5
Reused non-hazardous waste	4.3	6.0	4.7	28.8
Composted non-hazardous waste	0.0	0.0	0.0	5.8
Landfilled non-hazardous waste	4,576.0	3,415.8	2,742.5	2,143.4
Landfilled hazardous waste	0.0	0.0	0.2	0.2
Incinerated hazardous waste	0.3	0.1	0.1	2.4
Waste water treatment (non-hazardous waste)	0.0	0.0	22.5	405.9

TXX

G4-EN28**RECYCLING OF USED MODULES AND PACKAGING MATERIALS**

The EU Directive WEEE (Waste Electrical and Electronic Equipment) regulates the proper recycling of waste electrical and electronic equipment and its financing by manufacturers or importers at the European level. This law for the disposal of electronic waste, which now also defines discarded solar modules as electronic waste, has been revised at the European level (WEEE2). A free return system for solar modules will be created in all European Union countries. Manufacturers or importers will then share responsibility for accepting and properly disposing of returned solar modules. Most countries have already implemented the WEEE2 regulation into national law. In 2015, the German Electrical and Electronic Equipment Act was amended and the new version came into force in October.

With the implementation of WEEE2 in the EU member states, the right of return changes fundamentally for consumers. Old modules, thus far accepted voluntarily by SolarWorld, can now be taken to the communal recycling center by their owners. Manufacturers or importers must now report their shipment volumes in Germany monthly to a central body, the National Register for Waste Electric Equipment (Elektro-Altgeräte-Register, EAR). Depending on these reports, the EAR decides, which manufacturer or importer has to dispose of how many old modules. According to information from the disposal industry, significantly reduced prices for the recycling of old modules can be expected in the future. Certified waste management companies are

able to recycle old modules in such a way that almost all of the reusable material can be fed into production processes as secondary raw materials. SolarWorld has committed itself in good time to finding a partner for the recycling of old modules, who can process the registration and return. Recycling is then carried out via certified partners.

Owing to the long service life of solar modules, we do not yet have any significant volumes of returned products to report. In contrast, packaging materials are already produced at product delivery.

Our products are packaged primarily to protect them during transportation, not for advertising purposes. In Germany, we have contracted out recycling and reuse operations to Interseroh Dienstleistungs-GmbH, provided that modules are returned to us together with their packaging. The properly reported quantities of authorized packaging materials are determined by Interseroh on the basis of their inspection specification (in particular based on purchasing statistics, invoices and delivery notes), and are attested by auditors in the following year. These figures do not include materials taken back and recycled via a different collection system or in the framework of our own collection system as well as packaging material which has verifiably been exported. As the proofs for the past year are always received with a time delay, the volumes of the respective previous year are always taken for the Bonn site. Interseroh sorts and recycles 100 percent of materials by different types.

PACKAGING MATERIALS

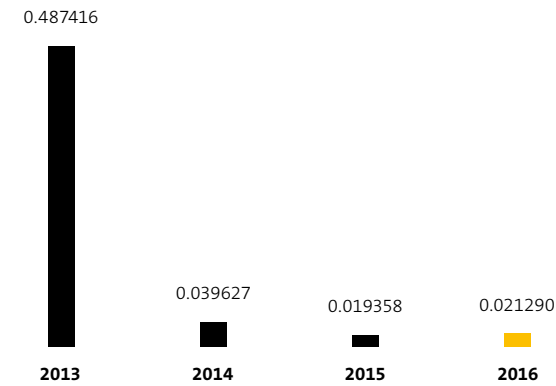
in t	2016	2015	2014	2013
Carton/cardboard/paper	1,046.7	779.8	791.5	817.0
Wood	1,258.9	1,172.3	1,229.7	1,081.3
Plastics/polyethylene-film/strapping bands/polystyrene/polyethylene protective corners/polyurethan/stretch film/plastic pallets and barrels	321.9	304.6	287.2	657.8
Other recycling (mixed: hard plastics, metal, compost)	18.0	16.3	16.3	18.8
Total	2,645.5	2,272.9	2,324.6	2,565.6
TXX				

G4-EN12+20+24+27**ENVIRONMENTAL IMPACTS**

We are not aware of any major impacts on biodiversity in protected areas or in areas of high biodiversity outside protected areas relating to our activities, products or services at our sites. We have taken out insurance against risks under the German Environmental Damage Act. The law governs liability claims resulting from damage inflicted on protected species and natural habitats as well as water and soil pollution. In the reporting period, there were no significant spills (chemicals, oils, fuels). SolarWorld has taken out insurance against risks under the German Environmental Damage Act. The law governs liability claims based on damage to persons and property, caused through the spread of harmful substances via the so-called environmental paths soil, water and air. The products of SolarWorld have no significant

environmental impact in terms of material input, water, emissions, discharge water, noise or waste. The modules are taken back and recycled at the end of their lifetime in accordance with the revised WEEE Regulation. Our lifecycle analysis shows that we are continuously improving our production, and hence our sales are compensating for ever greater volumes of emissions. As part of our lifecycle analysis, we also shed light on environmental effects that go beyond the ► *Environmental commitment – p. 040* analysis set out in the Management Report, and that emanate from the overall manufacturing process, i.e. starting from the extraction of raw materials. For this, we use the SimaPro software and the econinvent database. The environmental impact categories are calculated using the CML method. In recent years we have achieved an improvement regarding some effects.

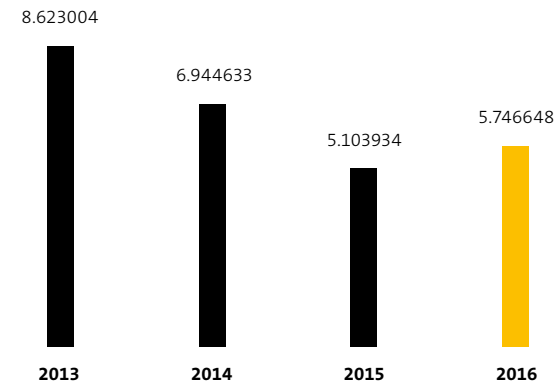
ABIOTIC DEPLETION
IN kg Sb_{eq} /kWp



The consumption of abiotic resources refers to the consumption of non-renewable raw materials, for example air, water, ore and other mineral raw materials. This is associated with harm to the environment and the state of the environment.

G 27

ABIOTIC DEPLETION OF FOSSIL FUELS
IN MJ/Wp



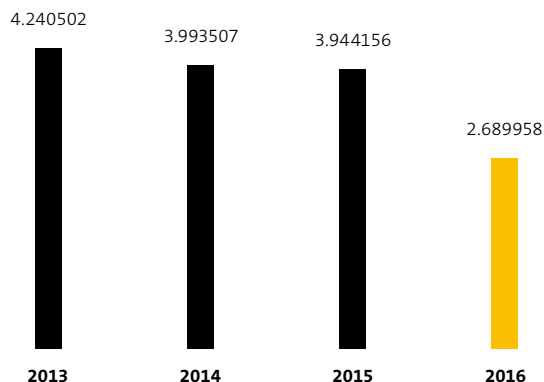
The consumption of fossil energy sources (oil, gas, coal) is also abiotic consumption and is also associated with environmental impacts. Fossil energy sources are considered fully replaceable by other energy sources. As a result, consumption is stated in megajoules (MJ).

G 28

ABIOTIC DEPLETION

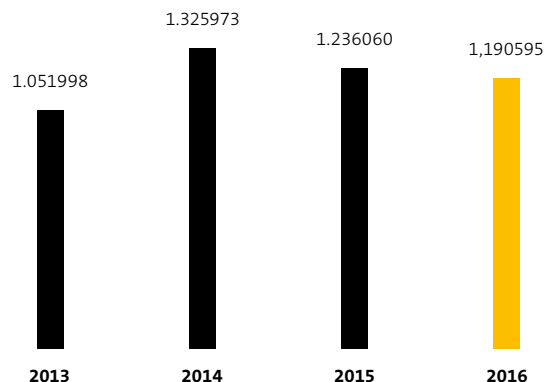
Abiotic depletion means the consumption of resources that are not renewable, or to be precise are not of plant or animal origin, i.e. they do not grow back. Abiotic resources may be reusable, however, e.g. air and water. Fossil fuels, ores and other mineral raw materials (including sand and salts) are also abiotic resources. Abiotic consumption describes the depletion potential of a resource, i.e. the relationship between global annual consumption and the available supply of the respective resource. Recycling or

substitution with renewable resources decreases abiotic depletion. Consumption of the various different resources is expressed in terms of the reference resource antimony, as antimony equivalent (Sb_{eq}). Only the abiotic depletion of fossil fuels (crude oil, gas, coal) is stated in megajoules (MJ), since these resources – unlike other abiotic resources – are considered to be not recyclable and fully replaceable. For the first time, we are providing detailed reporting of the abiotic depletion of fossil energy sources in a graphic.

ACIDIFICATIONIN kg SO_{2eq}/kWp

Soil and water are damaged due to acidification, e.g. due to high concentrations of CO₂ or nitrogen, acid rain, or fertilizer.

G 29

EUTROPHICATIONIN kg PO_{4---eq}/kWp

Eutrophication means the enrichment of soil and water by nutrients, especially nitrates and phosphates, resulting in overfertilization which can disturb the species composition.

G 30

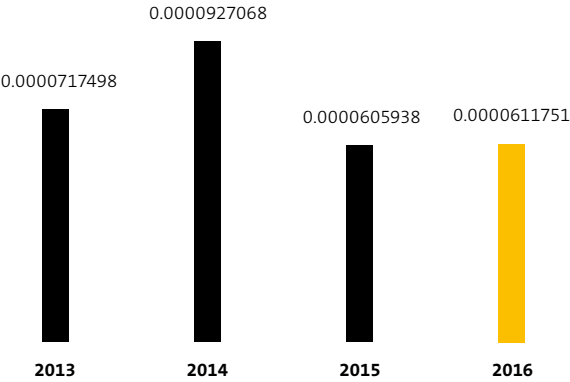
ACIDIFICATION

Acidification of soil and water occurs via acid rain, i.e. the conversion of air pollutants (especially sulfur dioxide and nitrogen oxides) into acids, and through ammonia enrichment, for example from excessive fertilizer use. Acid rain attacks buildings and metals, while many plants are harmed by acidic soils. The acidification potential is given in sulfur dioxide equivalent (SO_{2eq}).

EUTROPHICATION

Eutrophication means nutrient contamination, i.e. the enrichment of soil and water with various nutrients (in particular nitrates and phosphates), and is expressed as phosphate equivalent (PO_{4---eq}). In water bodies, this can lead to algae growth, reduced oxygen content and fish mortality. This can also be referred to as “collapse” phenomenon. Moreover, leaching of nutrients can cause nitrates to enter the groundwater, but in small quantities these are toxicologically safe.

OZONE LAYER DEPLETION
IN kg CFC-11_{eq}/kWp



The destruction of the ozone layer is primarily caused by gaseous halogen compounds, resulting in a harmful intensity of ultraviolet (UV) radiation.

G 31

OZONE LAYER DEPLETION

Ozone in the stratosphere protects life on Earth, since it absorbs harmful UV radiation. Depletion of the ozone layer is caused mainly by chlorofluorohydrocarbons (CFCs) and nitrogen oxides (NO_x). A lower concentration of ozone in the upper atmosphere results in a harmful intensity of UV radiation on the ground. Trichlorofluoromethane (CFC-11_{eq}) is used as the reference substance.

PHOTOCHEMICAL OXIDATION
IN kg C₂H₄ /kWp



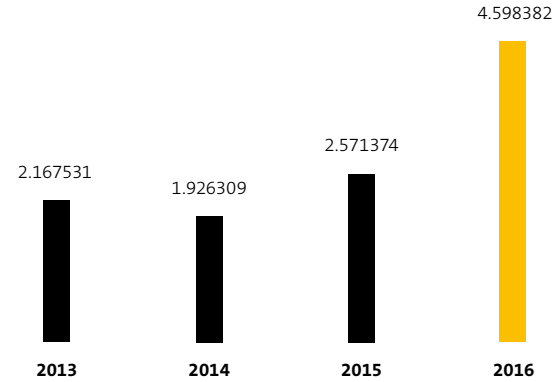
Photochemical oxidation (known as “summer smog”) is caused by reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOC) under UV radiation.

G 32

PHOTOCHEMICAL OXIDATION

Photochemical oxidation, also known as summer smog, is caused by reactions between sunlight and nitrogen oxides (NO_x) as well as volatile organic compounds (VOC). This creates ground-level ozone, which is a harmful trace gas, in contrast to its protective function in the stratosphere. The concentration of ground-level ozone depends on the weather (high temperatures, low humidity, little wind). The potential for photochemical oxidation is stated as ethylene equivalent (C₂H_{4eq}).

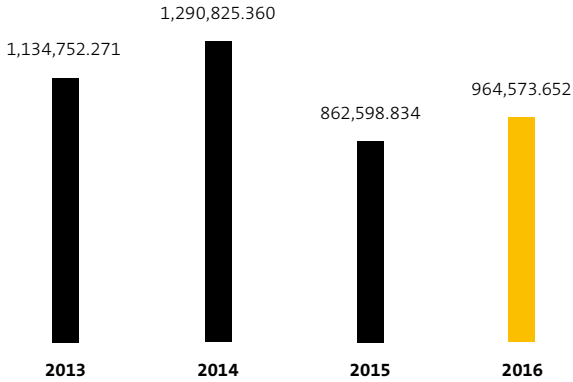
TERRESTRIAL ECOTOXICITY
IN kg 1,4-DB_{eq}/kWp



Terrestrial ecotoxicity: Terrestrial ecotoxicity means the harmful impact of numerous poisonous substances (e. g. heavy metals and organic substances) on terrestrial ecosystems.

G 33

MARINE AQUATIC ECOTOXICITY
IN kg 1,4-DB_{eq}/kWp

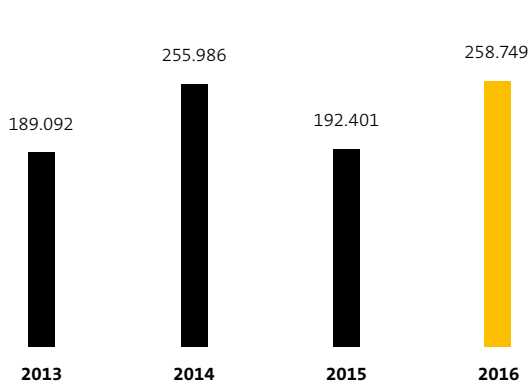


Marine aquatic ecotoxicity means the harmful impact of numerous poisonous substances (e.g. heavy metals and organic substances) on marine ecosystems.

G 34

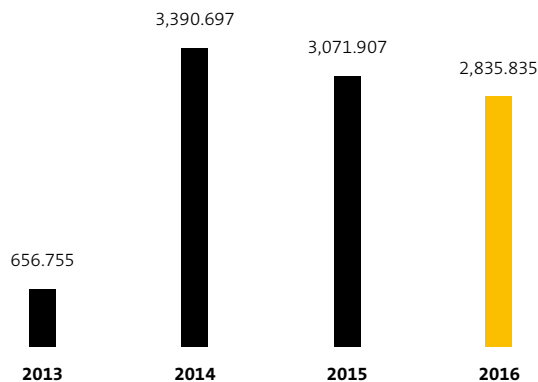
ECOTOXICITY

Terrestrial toxicity describes the harmful impact of poisonous substances on flora (plants), fauna (from micro-organisms to animals) and fungi, in and on land. Aquatic toxicity indicates the threat to organisms in oceans and fresh water from toxic substances. Human toxicity specifically indicates the threat to people. Many poisonous substances exist, for example heavy metals, salts and organic compounds. The potential toxicities of the various substances are considered in relation to the reference substance 1,4-Dichlorobenzene (1,4-DB_{eq}).

FRESH WATER AQUATIC ECOTOXICITYIN kg 1,4-DB_{eq}/kWp

Fresh water aquatic ecotoxicity means the harmful impact of numerous poisonous substances (e.g. heavy metals and organic substances) on the fresh water ecosystems.

G 35

HUMAN TOXICITYIN kg 1,4-DB_{eq}/kWp

Human toxicity means the harmful impact of numerous poisonous substances (e.g. heavy metals and organic substances) on the human organism.

G 36

SOCIAL SUSTAINABILITY**G4-10****EMPLOYMENT TYPES
AND EMPLOYMENT CONTRACTS**

SolarWorld's employees work in seven countries on four continents. Our main locations are the group headquarters in Bonn (Germany) as well as the production sites in Freiberg, Arnstadt (both in Germany) and Hillsboro, Oregon (U.S.). International sales sites are located in France, Great Britain, South Africa, Singapore and Japan.

At the cut-off date, we employed 2,431 (2015: 2,971) people in Germany. This decline of 18 percent is due to the decreased use of temporary workers. Owing to the sharp drop in the global market for solar power technology, we had to considerably reduce our use of temporary workers.

At the cut-off date, we employed 170 (2015: 814) temporary workers. Temporary work offers the flexibility to respond to fluctuations in demand while protecting the core workforce. Nevertheless, we placed a total of 69 temporary workers into permanent positions during the fiscal year. The number of employees, not including trainees, rose by 4.6 percent to 2,206 (2015: 2,108). This is mainly due to the still good order situation in the first half of 2016. ► [Employees – p. 044](#)

We attach a high importance to in-company training as a way of gaining qualified next-generation staff. In the fiscal year, 18 young people started a training with us. The number of trainees increased by 12.2 percent to 55. Of the eleven trainees who finished their training, we took on nine as permanent employees.

What is an FTE?

The full-time equivalent (FTE) is a standardized comparison factor that expresses the working hours of the employees as an equivalent of full-time employees.

We encourage a good balance between work and family life. The majority of employees are able to implement their part-time wishes within their working hours schemes. The proportion of employees who work part-time is 6.0 (2015: 4.5) percent. In addition, we set up parent-child offices at all German sites, to provide the possibility of on-site child care in exceptional cases. These child-friendly equipped offices are to be used primarily, if the regular child care has been cancelled and no other arrangement can be organized at short notice. If the respective job permits it and after consultation with their executive, employees can also work from home.

In Bonn and Freiberg, full-time employees have a contractually agreed 40-hour working week. At Arnstadt, a 38-hour week has been collectively agreed. Employees who are not subject to the collective agreement in Arnstadt have a contractual 40-hour week.

EMPLOYMENT TYPES AND CONTRACTS

Germany	2016	2015	2014	2013
Total headcount (incl. temporary workers)	2,431	2,971	2,641	1,647
Total headcount (excl. temporary workers)	2,261	2,157	2,161	1,447
Employees excl. trainees (FTE)	2,122.0	2,064.4	2,089.9	1,372.3
Employees excl. trainees	2,206	2,108	2,117	1,397
of which women	546	516	526	303
of which men	1,660	1,592	1,591	1,094
Part-time workers	133	94	83	56
of which women	100	71	67	45
of which men	33	23	16	11
Employees on permanent contract	2,049	2,012	2,048	1,307
of which women	512	506	524	266
of which men	1,537	1,506	1,524	1,041
Temporary workers (people)	170	814	480	200
of which women	49	210	117	47
of which men	121	604	363	153
Temporary workers (FTE)	75.5	529.2	333.9	111.4
of which women	20.5	131.3	78.2	27.4
of which men	55.0	397.9	255.7	84.0
Temporary workers taken over	69	32	17	15
Trainees	55	49	44	50
of which women	5	5	4	5
of which men	50	44	40	45

At our U.S. site in Hillsboro, Oregon, we kept the number of employees almost constant. We employed 820 (2015: 836) people there – 737 (2015: 748) direct employees and 83 (2015: 88) temporary workers.

As is usual in the United States, very few employees work part-time. Part-time work is generally interpreted as a negative signal in the United States, since it can suggest underemployment. Because of differences into German

employment law (e.g. weaker protection from dismissal), no distinction is made between permanent and fixed-term employment contracts in the United States. At the cut-off date, we employed 83 (2015: 88) temporary workers at Hillsboro, and placed 107 into permanent positions over the course of the year. The in-company dual training system, as it exists in Germany, is unusual in the United States. Consequently, we do not have any trainees at Hillsboro. The agreed working week is 40 hours.

U.S.	2016	2015	2014	2013
Total headcount (incl. temporary workers)	820	836	741	723
Total headcount (excl. temporary workers)	737	748	545	607
Employees excl. trainees (FTE)	736.8	747.3	544.1	607.0
Employees excl. trainees	737	748	545	607
of which women	211	216	147	165
of which men	526	532	398	442
Part-time workers	1	3	2	0
of which women	0	1	1	0
of which men	1	2	1	0
Employees on permanent contract	-	-	-	-
of which women	-	-	-	-
of which men	-	-	-	-
Temporary workers (people)	83	88	196	116
of which women	21	28	69	35
of which men	62	60	127	81
Temporary workers (FTE)	83.0	88.0	196.0	116.0
of which women	21.0	28.0	69.0	35.0
of which men	62.0	60.0	127.0	81.0
Temporary workers taken over	107	238	60	33
Trainees	0	0	0	0
of which women	0	0	0	0
of which men	0	0	0	0

At cut-off date, SolarWorld employed 3,288 (2015: 3,835) people worldwide. This decrease by 14.2 percent is due to the reduction in the use of temporary workers. In total, 2,979 (2015: 2,883) people worked in the group. Groupwide, the proportion of employees in part-time employment increased by 37 percent. The proportion of employees with a permanent employment contract remained almost constant. The use of temporary workers had to be reduced in the second half of 2016, with the result that the group still employed 254 temporary workers at the cut-off date. Nevertheless, 176 temporary workers were placed into

permanent positions in the group. The group data includes our international locations – in France, the United Kingdom, South Africa, Singapore and Japan – where we employ a total of 37 (2015: 27) people, of whom 36 (2015: 27) are in permanent positions, and one temporary worker.

The figures for our trainees relate exclusively to our German sites, since the dual vocational training system is not common practice in the United States or at our sales sites in France, South Africa, Singapore, Japan and the United Kingdom.

Group	2016	2015	2014	2013
Total headcount (incl. temporary workers)	3,288	3,835	3,407	2,389
Total headcount (excl. temporary workers)	3,034	2,932	2,730	2,073
Employees excl. trainees (FTE)	2,894.7	2,838.5	2,657.8	1,998.2
Employees excl. trainees	2,979	2,883	2,686	2,023
of which women	768	743	685	478
of which men	2,211	2,140	2,001	1,545
Part-time workers	136	99	87	57
of which women	102	74	70	46
of which men	34	25	17	11
Employees on permanent contract	2,084	2,039	2,072	1,318
of which women	523	517	536	272
of which men	1,561	1,522	1,536	1,046
Temporary workers (people)	254	903	677	316
of which women	71	238	186	82
of which men	183	665	491	234
Temporary workers (FTE)	159.5	617.2	530.9	227.4
of which women	42.5	159.3	147.2	62.4
of which men	117.0	457.9	383.7	165.0
Temporary workers taken over	176	270	77	48
Trainees	55	49	44	50
of which women	5	5	4	5
of which men	50	44	40	45

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No complaints concerning work practices were submitted, processed or solved in 2016 via formal complaint mechanisms. Our suppliers are not yet systematically checked in terms of work practices. We are not aware of any significant effects on work practices in the supply chain. The “risk

methods” software tool that has been in use since 2015 is also designed to provide corresponding information on possible incidents. For further information about employees, please consult the Management Report. ► *Employees – p. 044* ► *Expected business development 2017 – p. 078*

G4-LA1 ATTRITION

At our German sites, the attrition rate is the same as the average for Germany. Transparent processes for selecting applicants, hiring employees, as well as their relocation, promotion and dismissal are ensured through statutory, collectively agreed and site-specific rules. Our groupwide Code of Conduct prohibits discrimination of any kind; of course this applies to job applicants as well. The figures disclosed here cover active employees; trainees, the expiration of fixed-term employment contracts (e.g. student assistants and interns) and temporary workers are not included. Overall, at our German sites, more people were hired by us than left the company.

In the United States, the attrition rate is usually very high in comparison with Germany. This is due to regional characteristics of the U.S. job market (less protection from dismissal, shorter notice periods, easier to hire and fire people). For this reason, the rate at our U.S. site in Hillsboro is higher than at our German sites.

On a groupwide basis, too, the attrition rate increased slightly. This is attributable to the focusing of business processes. Overall, more people were hired by us than left the group. These figures include our sales locations in France, the United Kingdom, South Africa, Singapore and Japan.

ATTRITION

	2016			2015		
	Germany	U.S.	Group	Germany	U.S.	Group
Hirings	183	177	374	151	312	469
Proportion of women	20%	29%	25%	31%	34%	33%
Percentage of newly hired employees						
up to age 30	41%	43%	42%	26%	39%	35%
aged 31–40	32%	23%	28%	44%	26%	32%
aged 41–50	16%	11%	14%	21%	16%	18%
aged over 50	10%	23%	17%	9%	18%	15%
Percentage of employees leaving						
up to age 30	35%	41%	39%	21%	39%	31%
aged 31–40	32%	26%	27%	36%	25%	30%
aged 41–50	23%	14%	18%	27%	18%	22%
aged over 50	21%	19%	19%	13%	18%	16%
Employees leaving the company	107	179	295	108	107	218
there of voluntarily (men)	41%	54%	50%	45%	51%	48%
there of voluntarily (women)	16%	27%	23%	14%	31%	23%
there of termination by employer (men)	31%	14%	20%	32%	16%	24%
there of termination by employer (women)	12%	5%	7%	8%	2%	5%
Attrition rate	5%	24%	10%	5%	16%	8%

RECRUITING

SolarWorld always strives to attract a diverse range of talented people to work for the company. The recruitment process has been adapted to the SolarWorld competence model (R.I.S.E.) and rolled out to all subsidiaries, with the result that standardized recruitment policies now operate throughout the group. Recruitment channels range from tried-and-tested measures, such as internal and external vacancy notices, to more innovative approaches. At both German production sites, there were regular guided tours and presentations/projects at local schools. At Bonn, Freiberg and Arnstadt, as part of our integration@solarworld project, we specifically hired refugees as interns to give them an in-depth insight into the company. The intention is to promote refugees' integration and provide them with vocational training opportunities.

At Freiberg, we took part in several training fairs and at career guidance days, worked closely together with schools and supported other institutions. We have strong links with the Youth Technology House in Freiberg, where we jointly encourage school students to take an interest in technology and skilled trades.

At Arnstadt, too, we participated in a large number of training fairs, where we presented ourselves as an attractive employer to gain new trainees for the site. One particular highlight was setting up a teaching workshop with Solar-dorf Kettmannshausen e.V., where third-grade school children produced solar cars and other items using a 3D printer.

In Hillsboro, we also took part in job fairs to attract new talents. For example, more than 8,000 school students participated in the Oregon High School Career Expo with Randstad. Additionally, we attended two annual veterans recruiting events as well as one online veterans career fair. These activities are focused on engaging recently separated veterans. SolarWorld was also honored by the Marines4life veterans organization for outstanding hiring of veterans in our maintenance organization.

R.I.S.E.:

Measures of the HR strategy in the group are based on the guiding principles of the RISE & Shine company mission. The acronym RISE stands for "Responsibility," "Innovation," "Sustainability" and "Engagement." Among other things, we have derived our competency model from this. We take this as a basis when supporting each individual SolarWorld employee as well as when selecting new employees.

G4-LA2

BENEFITS TO EMPLOYEES

SolarWorld offers its employees various non-cash benefits. These vary depending on the location and taking account of national and statutory circumstances. All employees throughout the group have an entitlement to parental leave, although the scope differs greatly from country to country. ► *Parental leave – p. 219* With the exception of the United States, we offer company provident benefits to all employees, irrespective of their weekly working hours. At all German sites as well as at the sales sites in France and South Africa, we offer our employees a company pension scheme (i.a. via conversion of remuneration). In the United States, active employees working more than 30 hours per week are entitled to life assurance, health insurance, disability insurance as well as a company pension as company benefits. Permanent employees at the sales site in Singapore receive a life assurance policy, company health insurance, disability insurance but no company pension. Employees at the sales sites in France and Japan are entitled to company health insurance and disability insurance. We also offer a commuting allowance at the new sales site in Japan.

Throughout Germany, employees upwards of certain management levels or in specific positions (for example in the field sales force) are entitled to a company car. In Bonn, special parking spaces have been available for employees with electrical vehicles since 2015. In Freiberg, there are free shuttle busses from the station to the plant grounds in the winter months. Employees at all German sites receive financial support for midday meals and various healthcare offers (for example the company's own fitness studio at the Bonn site as well as a masseur who can be booked by the employees). These services are provided for trainees and temporary workers too. At Solarparc GmbH, employees can obtain a reduced-fare ticket for travel on local public transport. At SolarWorld AG, the transport operators do not offer a reduced-fare ticket at an attractive price, as there is not enough demand from employees. Employees in Germany and at the sales sites can obtain special conditions for the purchase of a solar power system. Employees in Germany generally have a right to one day of paid leave for certain occasions. SolarWorld grants additional paid leave, for example in the case of marriage or death (of a spouse or partner or close relative). In Bonn, parents who work part-time during their parental leave receive a child-care allowance. In the United States, continued payment of remuneration is offered in forms not prescribed by law there – for example in cases of illness, death, during the vacation period or even if an employee is required to perform jury service. Employees throughout the group also receive bonus payments if they make a particular contribution towards the success of the company, for example through inventions. The company also assumes costs for training. In the United States, veterans receive remuneration called "military pay". Part-time employees in the group have entitlements equivalent to those of full-time employees. Temporary workers can make use of the generally accessible non-cash benefits (e.g. shuttle service, free drinks). We do not offer stock options

G4-LA3

PARENTAL LEAVE

According to the German Federal Parental Allowance and Parental Leave Act (Bundeselterngeld- und Elternzeitgesetz), every employee including trainees and interns is entitled to parental leave in Germany. Both parents can take parental leave simultaneously up to three years. With the employer's consent, it is also possible, in principle, to split parental leave into two periods of time. Thus a maximum of twelve months of parental leave can be delayed until the child

reaches the age of eight. Men are increasingly taking parental leave, usually for two months, to extend the time that the parental allowance is paid to the maximum possible period of 14 months. Legal protection for and entitlements to parental leave are very extensive in Germany, compared with other countries around the world. Since 2013 the number of employees who take parental leave has been rising. The number of those returning from the parental season has also increased.

PARENTAL LEAVE

Germany	2016	2015	2014	2013
Employees entitled to take parental leave	2,398	2,125	2,240	257
which of women	602	529	563	61
which of men	1,796	1,596	1,677	196
Employees who took parental leave	122	105	98	88
which of women	47	34	28	41
which of men	75	71	70	47
Employees who returned to their job at the end of parental leave	95	85	93	58
which of women	30	22	26	15
which of men	65	63	67	43
Employees who were still employees in the company 12 month after the end of parental leave	70	230	187	121
which of women	13	60	57	34
which of men	57	170	130	87

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In the United States, parental leave is regulated at federal level (Family and Medical Leave Act), and at state level (e.g. Oregon Family Leave Act). Various requirements have to be met: depending on the applicable law, employees need to have been employed in the company for varying lengths of time and have served different numbers of working hours. If these conditions are met, employees can take a defined number of weeks (e.g. 12 weeks in Oregon) of parental leave, which depending on the state is unpaid (e.g. in Oregon)

or paid. It is not currently possible in the United States to ascertain how many employees are entitled to parental leave. Figures only show how many employees have actually taken parental leave. The number of employees who took parental leave remained at the same level as in the previous year, and is still low. The number of employees returning after the end of the parental leave has slightly increased. Based on our experience, employees usually return to the company after taking parental leave.

U.S.	2016	2015	2014	2013
Employees entitled to take parental leave	-	-	-	-
which of women	-	-	-	-
which of men	-	-	-	-
Employees who took parental leave	14	14	18	14
which of women	7	6	5	5
which of men	7	8	13	9
Employees who returned to their job at the end of parental leave	14	10	17	14
which of women	7	4	4	5
which of men	7	6	13	9
Employees who were still employees in the company 12 month after the end of parental leave	11	16	12	0
which of women	4	3	5	0
which of men	7	13	7	0

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Despite the overall sharp rise in number of employees, the number of employees who have taken parental leave has increased only slightly. The number of employees returning after the end of parental leave has risen to 110 (2015: 95). Overall, this variation is within the normal range. The Group figures also include the data of the international sales locations. There was a total of one employee in parental leave. The figure "Employees with an entitlement to

parental leave" covers all employees with an entitlement to parental leave within the fiscal year, even if they left the company during the course of the year. In principle, all SolarWorld employees are entitled to parental leave. The figure "Employees still employed in the company 12 months after the parental leave" is intended as an indication of whether work and family are compatible at SolarWorld.

Group	2016	2015	2014	2013
Employees entitled to take parental leave	2,443	2,154	2,265	257
which of women	615	542	576	61
which of men	1,828	1,612	1,689	196
Employees who took parental leave	137	120	116	102
which of women	54	41	33	46
which of men	83	79	83	56
Employees who returned to their job at the end of parental leave	110	95	110	72
which of women	37	26	30	20
which of men	73	69	80	52
Employees who were still employees in the company 12 month after the end of parental leave	82	247	200	122
which of women	17	64	63	35
which of men	65	183	137	87

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G4-11**EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS**

In Germany, employees have extensive opportunities to participate in the management of the company. A works council exists at every SolarWorld site in Germany to represent the interests of employees with respect to the management.

The joint works council for SolarWorld AG and Solarparc GmbH is made up of five female and four male employees. In addition, there is also a works, business, remuneration and working-hours committee, among others. Since 2014, SolarWorld AG and Solarparc GmbH have also had a joint youth and trainee representative body, and since 2015 a joint representative body for the severely disabled. Neither of the Bonn-based companies is affiliated to a trade union, so their employees are not covered by collective agreements.

In Freiberg, there is a works council (which currently has 18 works council members), a representative body for youth and trainees, a representative body for people with severe disabilities, an economic committee, union workplace representatives and a company bargaining agreement concluded with the trade union IG BCE (applicable to SolarWorld Industries Sachsen GmbH and SolarWorld Innovations GmbH). Not all Freiberg employees fall under the arrangements and provisions of the existing company agreement. However, since the works agreements, informal agreements etc. at Freiberg constitute collective bargaining agreements, the collective agreements cover all employees as a matter of principle, with the exception of the company boards (management boards and managing directors) and executives ("leitende Angestellte", see German Works Constitution Act (Betriebsverfassungsgesetz) for definition).

There is a works council at Arnstadt as well. This is made up of 13 members and is sub-divided into various committees, for example the business, remuneration or work and health committee. Here too, the majority (98 percent) of employees are unionized. A collective agreement has been made with the trade union IG Metall.

It is our aim to seek cooperation with the works council, and people who perform tasks for the works council or for the other bodies mentioned above are given the appropriate time off to do so and provided with the materials and space they need as well as funding for training, etc. Alongside everyday communication, there is a regular meeting structure for the parties within the company and within the works council bodies. In addition to the bulletin boards and email, the works council can of course also use the intranet as an information medium, for example via own intranet sites. Trade unions are also provided with corresponding information and communication means. Other channels for communication between the works council and employees include consultation hours, works meetings and surveys. An employee survey by the works council is was conducted in the first quarter of 2016.

The groupwide works council comprises six members (two each from Freiberg, Arnstadt and Bonn). They communicate via teleconferencing and regular meetings at the sites.

In the United States, employees are generally not represented by a trade union or works council, so we do not show a separate table in this case. At our sales location in France, all employees are covered by collective agreements, while at our Great Britain, Japan, South Africa and Singapore locations, none are.

EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS

Germany	2016	2015	2014	2013
Employees falling under collective bargaining agreements	1,795	1,812	1,820	1,120
Percentage (in relation to total headcount, excl. temporary workers)	79 %	84 %	84 %	77 %

Group	2016	2015	2014	2013
Employees falling under collective bargaining agreements	1,804	1,817	1,825	1,125
Percentage (in relation to total headcount, excl. temporary workers)	59 %	62 %	67 %	54 %

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G4-LA5-8**HEALTH AND SAFETY**

The health and safety of our employees is very important to us, because that is the prerequisite for motivation and willingness to perform. At our locations in Germany, we have set up appropriate safety committees according to the Occupational Health and Safety Act. Senior executives, occupational safety experts, company doctors, safety officers as well as the works council are represented on this committee. The number of participants varies depending on local structures. The committees meet at least once per quarter and discuss subjects related to occupational safety and accident prevention. There are also working groups for occupational health and safety at our German production sites in Freiberg and Arnstadt. These are not prescribed by law, but have been initiated by the employees. The working groups do not have a fixed number of participants; any interested employee can participate.

The work committee in Hillsboro is made up of at least four members (two from the employer side and two elected by the employees). Representatives selected from the employees can belong to any level of the hierarchy. There is also a “safety leadership team” with nine members.

OCCUPATIONAL SAFETY COMMITTEES

Company	Level/function	Average number of participants	Number of employee representatives (works council)
Solarparc GmbH	managing director, safety officers, company physicians, works council, expert for occupational safety	4	1
SolarWorld AG	board member, safety officers, company physicians, works council, expert for occupational safety	7	1
SolarWorld Industries Sachsen GmbH	managing director, safety officers, company physicians, works council, expert for occupational safety	13	2
SolarWorld Innovations GmbH	managing director, safety officers, company physicians, works council, expert for occupational safety	5	1
SolarWorld Industries Thüringen GmbH	managing director, safety officers, company physicians, works council, expert for occupational safety	9	2
SolarWorld Americas Inc.	All levels, there is no works council	16	0

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Safety, health and the environment are extremely high priorities for SolarWorld AG and its production sites. Our sites in Germany and the United States have established occupational health and safety management systems and are certified in accordance with BS OHSAS 18001. Employees at our production facilities are in principle exposed to an increased health risk. However, as operators of production and research facilities, we set high standards for safety in handling hazardous substances and dealing with possible sources of danger. Their implementation is documented in safety audits. The aim of safety audits is to identify relevant hazards, estimate their likelihood of occurrence and damage potential, and hence assess the risk for the company and employees. Suitable safety measures are then defined and implemented. These safety concepts are continuously reviewed and form part of internal emergency plans. All employees who are responsible for these environment and safety-related activities receive training.

With regard to process engineering, plants are enclosed and equipped with effective, redundant safety precautions (e.g. air extraction systems and containment areas). At our German sites, the legally required information about safety measures and the correct procedure in the event of an incident is provided to neighboring businesses and local residents. Fire and gas warning systems as well as mobile and fixed firefighting systems are installed at all production sites. The Arnstadt site also has its own fire department, and at Hillsboro there is an on-site emergency response team. There is an emergency team at the Freiberg site to deal with incidents.

The data on illnesses/injuries covers the entire workforce, not however independent contractors or temporary workers. These are only taken into account in the figures on occupational accidents. Throughout the group, we make sure that working conditions for external contractors are as safe as they are for our employees. In the fiscal year, 22 (2015: 19) external contractors worked at SolarWorld AG. These contractors are integrated into the organizational structure of our company to such an extent that they receive corresponding training. As in the previous year, one independent contractor worked at SolarWorld Innovations GmbH and received occupational safety training just like the SolarWorld employees. In 2016, there were no external contractors in Arnstadt, in Hillsboro as well as at the sales sites in France, Great Britain, South Africa, Japan and Singapore.

We report our lost day and absentee periods in hours. In Bonn, the planned annual working time has to be estimated in some cases as the number of days of leave varies, especially among part-time employees. Consequently, the standard figure of 30 days of leave has been taken as the basis for all permanent employees in Bonn.

In Germany, occupational accidents are reportable if they involve an inability to work for at least three days. In the United States, occupational accidents are reportable if they involve, for example, a stay in hospital. Absence due to accidents relates to the planned working time. The accident statistics also include persons who are performing an activity for us but who are not employees of the SolarWorld group (e.g. student assistants, temporary workers). As in the previous year, there were no work-related fatalities.

The absentee rate is very different between regions, and tends to be highest in Germany. So far there have not been any significant fluctuations over the years in the absentee rate in the various companies. The absentee rate indicates the percentage of planned working time lost through absence due to illness.

The accident rate per 1,000 employees indicates the number of reportable occupational accidents per 1,000 employees, and differs between the various SolarWorld companies. This is also due to the differing definition of reportable occupational accidents. In Germany, the accident rate fell to 16.5 (2015: 20.2) percent, while in Hillsboro it rose to 17.0 (2015: 8.6) percent. In 2016, there were no occupational accidents at our sales subsidiaries in France, Great Britain, South Africa, Singapore and Japan.

HEALTH AND SAFETY

Germany	2016	2015	2014	2013
Planned working time in hours (men, excl. temporary workers)	3,221,829	3,068,134	3,063,883	2,343,935
Planned working time in hours (women, excl. temporary workers)	1,081,346	913,640	926,158	557,016
Actual hours worked (men, excl. temporary workers)	2,874,976	2,881,792	2,442,025	1,858,160
Actual hours worked (women, excl. temporary workers)	896,872	952,344	727,849	463,399
Actual hours worked (men, incl. temporary workers)	3,585,939	3,605,070	2,933,089	2,114,746
Actual hours worked (women, incl. temporary workers)	1,027,517	1,194,973	874,771	535,688
Absentee rate (hours lost/planned working time)	7.4%	7.5%	6.7%	5.9%
Absence due to sickness in hours (men)	220,403	212,939	193,512	140,353
Absence due to sickness in hours (women)	96,980	86,492	73,458	29,917
Number of employees reporting sick (men)	1,557	1,310	1,238	972
Number of employees reporting sick (women)	548	501	469	271
Number of reportable occupational accidents (men incl. temporary workers)	30	39	25	25
Number of reportable occupational accidents (women incl. temporary workers)	14	13	10	5
Absence due to accidents in hours (men, excl. temporary workers)	3,019	4,317	5,630	3,720
Absence due to accidents in hours (women, excl. temporary workers)	4,062	1,601	930	168
Number of fatalities (men, incl. temporary workers)	0	0	0	0
Number of fatalities (women, incl. temporary workers)	0	0	0	0
Accident rate (per 1,000 workers, men and women, incl. temporary workers)	16.5	20.2	13.8	16.9
Accident rate (per 1,000 employees, men, incl. temporary workers)	15.0	20.0	13.0	17.6
Accident rate (per 1,000 employees, women, incl. temporary workers)	21.0	20.5	16.4	14.2
Total direct costs for employee health and safety in the calendar year in €	279,205	489,023	561,460	436,184

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U.S.	2016	2015	2014	2013
Planned working time in hours (men, excl. temporary workers)	1,169,047	1,010,744	923,133	1,147,016
Planned working time in hours (women, excl. temporary workers)	456,748	405,511	352,567	434,762
Actual hours worked (men, excl. temporary workers)	1,089,633	948,727	818,517	995,235
Actual hours worked (women, excl. temporary workers)	418,581	373,423	302,757	362,627
Actual hours worked (men, incl. temporary workers)	1,274,148	1,139,159	1,024,962	1,122,319
Actual hours worked (women, incl. temporary workers)	491,994	464,370	398,222	420,304
Absentee rate (hours lost/planned working time)	2.0 %	1.8 %	1.6 %	1.7 %
Absence due to sickness in hours (men)	21,896	17,471	14,363	18,865
Absence due to sickness in hours (women)	10,019	8,298	6,549	8,189
Number of employees reporting sick (men)	595	504	420	522
Number of employees reporting sick (women)	256	224	176	205
Number of reportable occupational accidents (men incl. temporary workers)	9	5	4	1
Number of reportable occupational accidents (women incl. temporary workers)	6	2	4	1
Absence due to accidents in hours (men, excl. temporary workers)	370	97	217	168
Absence due to accidents in hours (women, excl. temporary workers)	381	15	858	984
Number of fatalities (men, incl. temporary workers)	0	0	0	0
Number of fatalities (women, incl. temporary workers)	0	0	0	0
Accident rate (per 1,000 employees, men and women, incl. temporary workers)	17.0	8.6	11.3	2.6
Accident rate (per 1,000 employees, men, incl. temporary workers)	14.2	8.7	7.9	1.8
Accident rate (per 1,000 employees, women, incl. temporary workers)	24.0	8.4	19.7	4.6
Total direct costs for employee health and safety in the calendar year in €	439,622	513,696	520,591	590,941

Group	2016	2015	2014	2013
Planned working time in hours (men, excl. temporary workers)	4,445,556	4,112,805	4,006,696	3,521,801
Planned working time in hours (women, excl. temporary workers)	1,560,467	1,341,598	1,299,942	1,015,187
Actual hours worked (men, excl. temporary workers)	4,008,109	3,864,319	3,280,166	2,881,965
Actual hours worked (women, excl. temporary workers)	1,335,875	1,347,958	1,051,495	847,743
Actual hours worked (men, incl. temporary workers)	4,860,087	4,778,055	3,978,155	3,265,635
Actual hours worked (women, incl. temporary workers)	1,539,932	1,681,533	1,293,882	977,708
Absentee rate (hours lost/planned working time)	5.8 %	6.0 %	5.4 %	4.4 %
Absence due to sickness in hours (men)	242,828	230,538	207,931	159,441
Absence due to sickness in hours (women)	107,461	95,046	80,335	38,453
Number of employees reporting sick (men)	2,159	1,820	1,662	1,502
Number of employees reporting sick (women)	812	732	654	486
Number of reportable occupational accidents (men incl. temporary workers)	39	44	29	26
Number of reportable occupational accidents (women incl. temporary workers)	20	15	14	6
Absence due to accidents in hours (men, excl. temporary workers)	3,389	4,414	5,847	3,888
Absence due to accidents in hours (women, excl. temporary workers)	4,443	1,623	1,788	1,152
Number of fatalities (men, incl. temporary workers)	0	0	0	0
Number of fatalities (women, incl. temporary workers)	0	0	0	0
Accident rate (per 1,000 employees, men and women, incl. temporary workers)	16.9	17.4	13.2	12.5
Accident rate (per 1,000 employees, men, incl. temporary workers)	15.0	17.4	11.9	13.1
Accident rate (per 1,000 employees, women, incl. temporary workers)	22.5	17.3	17.3	10.4
Total direct costs for employee health and safety in the calendar year in €	730,418	1,015,910	1,090,829	1,027,407

Given the frequency of work-related illnesses, healthcare and workplace ergonomics are very important. High psychic and physical burdens in administration and production should be avoided, if possible, or at least reduced. Many of these topics are subject to co-determination and are therefore regularly discussed with the works council and additional bodies; then measures are jointly decided.

The direct costs for employee health and safety in Germany fell to around k€ 279 (2015: 489). Also at our US site in Hillsboro these expenses decreased to approximately k€ 440 (2015: 514). For the whole group, a decline to k€ 730 (2015: 1.016) was recorded. Despite this decline in the cost of employee health, numerous services and events were offered in 2016. In addition, an operational health management has been established in both Freiberg and Arnstadt.

In September, health days were held at all three German sites. Topics were occupational health, exercise and nutrition. In Freiberg, the focus was on stress reduction. There were offers ranging from a heart check, to blood sugar and cholesterol measurement, to muscle-building training, which, in total, were used over 200 times, as well as a workshop specifically for executives. In addition to a spinal screening, a lung volume check was available in Bonn, as were a fitness studio introduction and a presentation on quitting smoking. In Arnstadt, the two-day health day program was held under the motto "Stay fit in your job and in your free time." Workshops provided tips on ergonomics and interested people could have a spinal muscle profile created. The company doctor offered a lung function test and gave advice on how to prevent respiratory diseases. An endurance check and a nutrition and musculoskeletal check were also available.

Furthermore, various sports and massage offers were provided, such as back training, business sports studios/fitness rooms in Bonn and Arnstadt or yoga classes. In Freiberg, special conditions are granted by nearby fitness studios in the region. Arnstadt has participated in various regional sporting events (RUN 2016, Stadtradeln 2016, BootItUp 2016). In September, 51 colleagues took part in the Bonn company run (Bonner Firmenlauf) in the Rheinaue and finished third in their category. In the U.S., we provide extensive health advising via health insurers.

At SolarWorld, costs are incurred from a global policy provided by insurers Barmenia, and there are several items relating to health insurance benefits. These totaled around k€ 55 in 2016. These premiums do not include benefits for short-term international travel (< 90 days). As these cannot be clearly allocated to the sites, this amount has not been included in the overview.

G4-LA9**TRAINING AND PROFESSIONAL DEVELOPMENT**

Because our employees receive training on an as-needs basis, fluctuations are usual from year to year. Expenses for training activities are narrowly defined. Only direct costs (e.g. documented by invoices) are included. Costs for training courses such as those offered by equipment suppliers as part of an entire package are not included. Similarly, no imputed costs for internal training (internal trainers instruct employees) are included, although the number of hours spent on such training courses is recorded. Our temporary workers receive the same training as our employees, wherever needed.

Our cross-site management development program was launched in 2016. It consists of four modules and three courses. Participation in the program is decided jointly by the employee who has management responsibility, his or her supervisor and the supporting HR employee. Another module, Coach and Mentor, enables supervisors to help their employees transfer what they have learned, after completing the module.

A learning management system has been introduced, with four web-based compliance training courses. These replace the annually recurring refresher course seminars that were held in the past. Thanks to the learning management system, employees are now able to decide for themselves when and where they want to work through the web-based training course.

As key activities to follow up the first global employee survey, site-based and cross-site focus groups were held to analyze the survey results in depth and work out effective measures. The implementation of measures is ensured by management in the departments and fields, with Human Resources supporting the process.

Figures for spending on training are available for all group companies with the exception of subsidiaries in the United Kingdom and Japan. The proportion of trained employees is calculated using the rolling average number of employees instead of cut-off dates. The number of trained employees is an absolute figure, so the quoted figure may be slightly higher than in reality. The proportion of employees who took part in training increased to 120.9 (2015: 73.1) percent. This means that each employee received on average 1.2 training courses. Total groupwide expenditure on employee training fell sharply to around k€ 530 (2015: 641). Training expenditure per employee fell to around € 175 (2015: 220). Despite the fall in total costs, the number of hours of training increased to around 46,000 (2015: 28,000) hours. This is because of the increased use of internal and web-based training. The total number of training measures increased to 953 (2015: 832). This was due to the greater need for training on account of the SAP ERP roll-out, the installation of new production facilities, as well as increased training for IT security and compliance.

INITIAL AND FURTHER TRAINING FOR EMPLOYEES

Group	2016	2015	2014	2013
Total training expenditure (in €)	530,358	640,543	357,581	414,946
Training expenditure per employee (in €)	174.80	218.47	180.14	200.17
Number of hours spent for training (total)	46,152	27,766	28,806	183,957
Number of hours spent for training (men in management positions)	4,348	4,495	2,521	2,610
Number of hours spent for training (women in management positions)	849	889	460	250
Number of hours spent for training (men, non-executive staff)	31,205	17,285	16,979	17,357
Number of hours spent for training (women, non-executive staff)	8,461	5,097	5,493	2,486
Number of training programs	953	832	800	817
Number of employees having completed training programs	4,322	2,501	1,383	1,484
Number of employees having completed training programs (men in management positions)	377	272	143	127
Number of employees having completed training programs (women in management positions)	96	60	22	19
Number of employees having completed training programs (men, non-executive staff)	2,950	1,641	851	942
Number of employees having completed training programs (women, non-executive staff)	893	601	243	222
Percentage of staff undergoing training per year	120.9 %	73.1 %	56.9 %	57.8 %
Average number of hours spent for training (men and women)	26.2	8.2	15.0	12.7
Average number of hours spent for training (men in management positions)	92.5	24.4	8.3	17.3
Average number of hours spent for training (women in management positions)	84.9	27.0	18.1	10.6
Average number of hours spent for training (men, non-executive staff)	23.8	9.7	14.1	13.5
Average number of hours spent for training (women, non-executive staff)	23.6	8.6	16.6	7.4

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All non-bold numbers until 2015 without data from the United States.

SolarWorld encourages innovations, even beyond the boundaries of the group. For more than ten years, we have been recognizing people who have rendered outstanding service to the global use of solar energy as an energy source of the future through our annual SolarWorld Einstein Award. The SolarWorld Einstein Award 2016 was given to Peter Adelmann. The award honored the commitment of the solar pioneer, developer and manager to rural electrification and sustainable solar projects. For years, Peter

Adelmann has ensured the electrification of rural areas in Africa or Asia, for example. Peter Adelmann has actively worked in the field of photovoltaics, including as an advisor for different governments, the UN and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), for over 30 years. In addition to research, optimization and the testing of energy-efficient devices and batteries, training “solar entrepreneurs” is also the focus of his work.

We have also presented the SolarWorld Junior Einstein Award to young scientists since 2006. The international competition is targeted at new generation scientists who conduct research on all photovoltaics-related topics for their final dissertation. After a multi-stage selection procedure, this year, two young scientists were honored with the prestigious award.

Dr. Frank Feldmann conducted research on passivated contacts as a doctoral candidate at the Fraunhofer Institute for Solar Energy Systems (ISE) in Freiburg with his paper on “Carrier-selective contacts for high-efficiency Si solar cells”.

The second prizewinner this year, Udo Römer, also worked on passivated contacts in his dissertation entitled “Polycrystalline silicon/monocrystalline silicon junctions and their application as passivated contacts for Si solar cells” at the Institute for Solar Energy Research in Hamelin.

G4-LA12+EC6

DIVERSITY AND EQUAL OPPORTUNITIES

SolarWorld AG supports diversity and equal opportunity and has therefore set binding targets in August 2015. The share of women in management positions should be increased to 25 percent by mid-2017. From 2020, a female share of at least 25 percent should be achieved on each individual management level. As from January 1, 2016, a statutory gender quota of 30 percent applies to Supervisory Boards. As our Supervisory Board elections were held in 2015, the quota will not apply until the next cycle. These targets must not be underachieved in future.

We have adjusted the management level reporting to bring it into line with German legislation on the equal participation of women and men in management positions. In addition to the first management level, we now report on the second management level as well, whereas previously we included all other employees with managerial responsibilities. Thus, employees below this job level are no longer considered, despite having managerial responsibility. Since collecting data for previous years would be unjustifiably time-consuming, we have not adjusted these figures.

Our reporting is based on the categories of gender, disability and age distribution. We disclose this data not only for governance bodies but also for the entire workforce. In Germany, it is illegal to ask for information about minority group membership (General Equal Treatment Act). In the United States, data is only recorded for employees who have actively registered themselves as members of a minority group. As a result, these figures are not meaningful, and we do not report this information.

PROPORTION OF WOMEN

The Group Management Board is made up of five members (four male members and one female member aged between 45 and 57) who do not belong to a registered minority. There are six shareholder representatives on the Supervisory Board, of whom five are male and one is female. The employee representatives on the Supervisory Board were elected in October 2015, and are made up of five male members and one female member. The age range of the overall Supervisory Board is 30 to 62 years. The number of members of the Management Board and managing directors is shown in the tables as follows: Individuals with more than one function are only counted once.

► [*Boards of SolarWorld AG – p. 091*](#)

Groupwide, the proportion of women was unchanged at 25.5 (2015: 25.5) percent; however, the share of female managers has increased to 21.7 (2015: 16.7) percent. To achieve the targets for gender quota, the company is working on further measures to recruit and develop women for management positions. As a result, the percentage of women in the talent management program is currently at 50 percent. Across Germany, women accounted for 24.4 (2014: 24.2) percent of all employees and 24.0 (2015: 15.7) percent of executives. In the United States, the proportion of women has dropped slightly to 28.6 (2015: 28.9) percent. The share of female managers is at 20.0 (2015: 20.7) percent. The share of female employees at our sales sites in France, Great Britain, South Africa, Singapore and Japan fell to 30.6 (2015: 40.7) percent; the share of the female managers is unchanged at 0 (2015: 0) percent. The figures for these sales sites are included in the group figures and are not presented in separate tables.

DIVERSITY AND EQUAL OPPORTUNITIES

Germany	2016	2015	2014	2013
Number of Management Board members (till 2015 incl. managing directors)	5	11	13	13
Proportion of women on the Management Board	20 %	9 %	8 %	8 %
First tier of management (since 2016: incl. managing directors)	19	15	11	12
Proportion of women in the first tier of management	11 %	7 %	9 %	8 %
Second tier of management (till 2015: other tiers of management)	31	195	249	156
Proportion of women in second tier of management	32 %	16 %	17 %	14 %
Employees below the 2nd tier of management	2,156	1,898	1,857	1,229
Proportion of women below the 2nd tier of management	25 %	25 %	26 %	23 %
Trainees	55	49	44	50
Proportion of female trainees	9 %	10 %	9 %	10 %
Total workforce (incl. trainees)	2,261	2,157	2,161	1,447
Overall proportion of women	24 %	24 %	25 %	21 %
U.S.	2016	2015	2014	2013
Number of Management Board members (till 2015 incl. managing directors)	0	4	5	4
Proportion of women on the Management Board	-	0 %	0 %	0 %
First tier of management (since 2016: incl. managing directors)	3	3	4	5
Proportion of women in the first tier of management	0 %	0 %	0 %	0 %
Second tier of management (till 2015: other tiers of management)	12	55	43	76
Proportion of women in second tier of management	25 %	22 %	23 %	32 %
Employees below the 2nd tier of management	722	690	498	526
Proportion of women below 2nd tier of management	29 %	30 %	28 %	27 %
Trainees	0	0	0	0
Proportion of female trainees	-	-	-	-
Total workforce (incl. trainees)	737	748	545	607
Overall proportion of women	29 %	29 %	27 %	27 %

Group	2016	2015	2014	2013
Number of Management Board members (till 2015: incl. managing directors)	5	20	21	20
Proportion of women on the Management Board	20 %	5 %	5 %	10 %
First tier of management (since 2016: incl. management directors)	23	19	15	17
Proportion of women in the first tier of management	9 %	5 %	7 %	6 %
Second tier of management (till 2015: other tiers of management)	46	251	294	236
Proportion of women second tier of management	28 %	18 %	18 %	20 %
Employees below the 2nd tier of managementNon-executive staff	2,910	2,613	2,377	1,770
Proportion of women below the 2nd tier of management	26 %	27 %	27 %	24 %
Trainees	55	49	44	50
Proportion of female trainees	9 %	10 %	9 %	10 %
Total workforce (incl. trainees)	3,034	2,932	2,730	2,073
Overall proportion of women	26 %	26 %	25 %	23 %

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WORK FOR PEOPLE WITH DISABILITIES

SolarWorld is keen to also enable disabled persons to work. However, our direct influence on this aspect is limited, since it depends strongly on the applications we receive. Furthermore, it is a challenge to make a production facility entirely accessible to people with disabilities. Consequently, the groupwide share of disabled persons is very low.

To enable us to also make a contribution towards the inclusion of disabled persons, we work with organizations that promote the integration of people with disabilities into the workforce at our sites in Bonn, Freiberg, Arnstadt

and Hillsboro. The SolarWorld Industries Sachsen GmbH has commissioned the “Stadtmission Chemnitz e.V.”, the “Diakonische Werk Freiberg” and the “Lebenshilfe e. V. Freiberg” with a total order volume of about k€ 204. The SolarWorld AG has commissioned the “Lebenshilfe Freiberg e. V.”, the “Freiberger Werkstätten” and the “Bonner Werkstätten” with a an order volume of around k€ 43. The Arnstadt site has paper towels for production cut by “Christophoruswerk Erfurt gGmbH” (annual order volume: k€ 5). In the United States, we have a cooperation agreement with Edwards Enterprises, whose employees perform such duties as internal mail delivery and light cleaning.

EMPLOYEES WITH DISABILITIES

Germany	2016	2015	2014	2013
Employees with disabilities	68	62	59	33
Share of employees with disabilities	3.0 %	2.9 %	2.7 %	2.3 %
U.S.	2016	2015	2014	2013
Employees with disabilities	49	20	15	4
Share of employees with disabilities	6.6 %	2.7 %	2.8 %	0.7 %

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Konzern	2016	2015	2014	2013
Employees with disabilities	117	82	74	37
Share of employees with disabilities	3.9 %	2.8 %	2.7 %	1.8 %

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AGE STRUCTURE

In human resources management, a normal distribution of age groups within the company is generally considered to be advantageous. At SolarWorld, the overall age distribution is balanced, without any major fluctuations compared with the previous year. The two main age groups in the age distribution are 31–40 years and 41–50 years. Groupwide and in Germany, around 60 percent of employees are in these

age groups. In the United States the distribution is even more balanced. At the sales sites in France, South Africa, Japan and Singapore, the distribution is much less uniform by comparison due to the low numbers of employees. The average age in Germany is 42 (2015: 42) years, in the U.S. it is 42 (2015: 42) years, and at our sales sites in France, Great Britain, South Africa, Singapore and Japan it is 38 (2015: 36) years. The average age groupwide is 42 (2015: 42) years.

Germany	2016	2015	2014	2013
Percentage of employees aged 30 or below	12 %	13 %	15 %	18 %
Percentage of employees aged 31–40	33 %	32 %	32 %	34 %
Percentage of employees aged 41–50	28 %	30 %	31 %	30 %
Percentage of employees aged over 50	27 %	24 %	22 %	18 %
Percentage of executives aged 30 or below	0 %	6 %	4 %	6 %
Percentage of executives aged 31–40	22 %	38 %	39 %	40 %
Percentage of executives aged 41–50	52 %	42 %	44 %	45 %
Percentage of executives aged over 50	26 %	14 %	13 %	9 %
Percentage of non-executives aged 30 or below	13 %	14 %	16 %	20 %
Percentage of non-executives aged 31–40	33 %	32 %	31 %	34 %
Percentage of non-executives aged 41–50	28 %	29 %	29 %	27 %
Percentage of non-executives aged over 51	27 %	25 %	24 %	19 %
Average age	42	42	41	40

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U.S.	2016	2015	2014	2013
Percentage of employees aged 30 or below	23%	24%	21%	19%
Percentage of employees aged 31–40	23%	25%	25%	26%
Percentage of employees aged 41–50	24%	23%	26%	27%
Percentage of employees aged over 50	30%	28%	28%	29%
Percentage of executives aged 30 or below	0%	3%	0%	1%
Percentage of executives aged 31–40	17%	29%	26%	23%
Percentage of executives aged 41–50	42%	33%	43%	43%
Percentage of executives aged over 50	42%	34%	32%	32%
Percentage of non-executives aged 30 or below	23%	25%	23%	21%
Percentage of non-executives aged 31–40	24%	25%	25%	27%
Percentage of non-executives aged 41–50	23%	22%	24%	24%
Percentage of non-executives aged over 51	30%	28%	28%	28%
Average age	42	41	42	42

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Group	2016	2015	2014	2013
Percentage of employees aged 30 or below	15%	16%	16%	19%
Percentage of employees aged 31–40	31%	30%	31%	32%
Percentage of employees aged 41–50	27%	28%	30%	29%
Percentage of employees aged over 50	27%	26%	23%	21%
Percentage of executives aged 30 or below	0%	5%	4%	4%
Percentage of executives aged 31–40	25%	36%	37%	35%
Percentage of executives aged 41–50	47%	40%	43%	45%
Percentage of executives aged over 50	28%	19%	16%	16%
Percentage of non-executives aged 30 or below	15%	17%	18%	21%
Percentage of non-executives aged 31–40	31%	30%	30%	31%
Percentage of non-executives aged 41–50	27%	27%	28%	26%
Percentage of non-executives aged over 51	27%	26%	24%	21%
Average age	41	42	41	41

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LOCALLY HIRED EMPLOYEES

We are an international group and mainly recruit locally at our sites, although in this matter, there is no company guideline. We try to keep the number of expatriates down. Under various nondiscrimination provisions (federal agreement on application of equal opportunities legislation in Germany, rules and regulations by the Equal Employment Opportunity Commission and Affirmative Action in the U.S.)

and pursuant to our group wide Code of Conduct, local candidates must not be given preference nor discriminated against in the recruitment process. For all management levels, we disclose the percentage of locally hired employees. At SolarWorld AG, figures for the expat status of executive staff are estimated because, in some cases, data on the original place of residence before joining the company are not available.

LOCALLY BASED HIRING OF EMPLOYEES

	2016	2015	2014	2013
Percentage of locally hired Management Board members and managing directors				
Germany	100 %	100 %	100 %	100 %
U.S.	100 %	75 %	80 %	75 %
Rest of the world	89 %	89 %	20 %	0 %
Percentage of locally hired managers (1st tier)				
Germany	100 %	100 %	100 %	100 %
U.S.	67 %	67 %	75 %	80 %
Rest of the world	100 %	100 %	-	-
Percentage of locally hired managers (other tiers)				
Germany	100 %	100 %	100 %	100 %
U.S.	100 %	96 %	98 %	99 %
Rest of the world	100 %	100 %	100 %	50 %

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G4-51-55+EC3+5+LA13 REMUNERATION

The remuneration of the Management Board is divided into fixed remuneration and variable remuneration. The variable remuneration of the members of the Management Board is based on the development of specific company KPIs. A sustainability component with a multi-year valuation basis completes the system. Severance pay in the event of leaving the company is not negotiated in advance (there are no "golden parachutes"). Since 2014, the Supervisory Board has received fixed remuneration. Management Board and Supervisory Board do not receive any pension benefits over and above those prescribed by law. ► [*Remuneration report – p. 094*](#)

The remuneration of the executives and of the management of the subsidiaries includes an individual variable that is linked to individual target agreements. Employees generally receive a variable bonus based on the group result, group bonus and any individual component. Usually, there are no separate remuneration components for sustainability aspects, as these have already been taken into account in the strategic targets of our sustainable corporate management. To avoid conflicts of interest, SolarWorld does not offer any stock-based compensation elements. In this way, we wish to ensure that our management will not strive for short- to mid-term share-price increases, but will rather act for the benefit of long-term corporate success. Since 2015, shift allowances paid to production workers have been added to the basic salary. The total management compensation per

member of the Management Board is capped at 20 times the average employee remuneration. The ratio between the annual remuneration of the highest-paid employee to average annual employee remuneration is reported separately for basic salary and bonus: The difference between the highest and the average basic salary in Germany is € 174,746 (2015: 110,793); the highest fixed remuneration is equivalent to five times (2015: four times) the average. With the variable remuneration, differences and fluctuations between years can be very high, for example if employees make a particular contribution to the success of the company through inventions/innovations. As regards the variable remuneration in Germany, the difference between the highest and the average is € 49,232 (2015: 45,087); the highest bonus is equivalent to 15 times (2015: 28 times) the average. In the United States, the difference between the highest and the average basic salary is € 185,868 (2015: 127,373); the highest fixed remuneration is equivalent to five times (2015: four times) the average. As regards the U.S. variable remuneration, the difference is € 92,217 (2015: 52,444); the highest variable remuneration is equivalent to 40 times (2015: 21 times) the average.

The SolarWorld group has companies in a total of twelve countries. In addition to global remuneration principles, account must also be taken of various local conditions, for example collective bargaining agreements in Germany. In order to achieve comparable remuneration structures in all countries while offering normal market remuneration levels compared to companies in similar industries, we base our remuneration decisions on benchmarking through the global service provider Radford, who provides comparison figures for all target countries.

As a result of the groupwide remuneration model, which includes the applicable collective agreements, it is ensured that no salary differences exist between men and women. In Germany (General Equal Treatment Act) and the U.S. (Lilly Ledbetter Fair Pay Act), equal rights for men and women are stipulated by law. We disclose salary ranges and average salaries by executive and non-executive staff and by gender. The comparison is based on the annual gross basic salary (where applicable including holiday pay and Christmas bonus) and all other bonus payments. Company cars are not included. For reasons of data protection, we are unable to indicate the data for employees at our sales sites in France, Great Britain, South Africa, Singapore and Japan. There, we employ only a few employees, so that conclusions can be drawn on individual salaries.

The remuneration structures in Germany and the United States differ in particular as a result of the very different social insurance systems. In the United States, employees with special skills and qualifications and/or a long-standing career with the company also receive relatively high salaries, irrespective of whether they hold an executive position or not. Groupwide, the variable salary components remained stable in 2016 – with the exception of non-managerial staff in the United States. As a rule, we pay salaries above minimum wage at all sites. In Germany, the difference compared to the statutory minimum wage of € 8.50 is at least € 0.40 (with student assistants/“marginal” part-time workers) or € 4.22 (with permanent employees) per hour. In Hillsboro, the difference compared to the minimum wage of \$ 9.75 is \$ 1.75 for temporary workers and \$ 2.40 for permanent employees.

The pension commitments over and above the pension provisions prescribed by law are of the defined-contribution type. In Germany, SolarWorld offers a retirement savings program in the form of direct insurance and a pension fund. In two cases the benefits are of the defined-benefit type. Employees who were employed at the former Munich site are entitled to direct pension commitments (defined-bene-

fit pension commitments). SolarWorld Industries Thüringen GmbH provides employer and employee-financed pension commitments, although the former exist under the provisions made to safeguard existing standards of former companies. In 2016, the total commitments of SolarWorld were k€ 9,930 (2015: 9,466). ► *Consolidated financial statements – Retirement benefits – p. 131*

SALARY STRUCTURE

in €	2016			2015		
Germany	Lower Limit	Upper Limit	Average	Lower limit	Upper limit	Average
First and second tier of management (excl. managing directors and Management Board members) (till 2015: all executives)						
Basic salary: range and average (men)	63,333	220,274	97,862	29,968	150,000	60,339
Basic salary: range and average (women)	60,320	140,000	79,163	36,877	140,000	58,179
Variable remuneration: range and average (men)	0	52,802	16,907	0	46,752	5,693
Variable remuneration: range and average (women)	4,667	31,200	13,875	0	22,851	5,424
Basic salary: ratio women to men	0.95:1	0.63:1	0.80:1	1.23:1	0.93:1	0.96:1
Variable remuneration: ratio women to men	-	0.59:1	0.82:1	-	0.48:1	0.95:1
Employees below second tier of management (till 2015: non-executives)						
Basic salary: range and average (men)	26,001	88,280	40,476	16,289	126,600	37,583
Basic salary: range and average (women)	26,146	73,457	38,852	18,498	73,000	34,924
Variable remuneration: range and average (men)	0	25,030	2,306	0	18,461	1,266
Variable remuneration: range and average (women)	0	10,000	1,683	0	19,750	1,098
Basic salary: ratio women to men	1:1	0.83:1	0.95:1	1.13:1	0.57:1	1.12:1
Variable remuneration: ratio women to men	-	0.39:1	0.72:1	-	1.06:1	0.86:1

in €	2016			2015		
U.S.	Lower Limit	Upper Limit	Average	Lower limit	Upper limit	Average
Executives (excl. managing directors and Management Board members) (till 2015: all executives)						
Basic salary: range and average (men)	136,122	236,742	158,234	43,284	174,979	97,577
Basic salary: range and average (women)	131,615	140,726	136,846	49,731	132,230	99,795
Variable remuneration: range and average (men)	7,603	99,733	23,836	92	55,076	11,234
Variable remuneration: range and average (women)	9,483	62,077	23,771	1,368	16,276	8,692
Basic salary: ratio women to men	0.96:1	0.59:1	0.86:1	1.14:1	0.75:1	1.02:1
Variable remuneration: ratio women to men	1.24:1	0.62:1	0.99:1	14.85:1	0.29:1	0.77:1
Employees below second tier of management (till 2015: non-executives)						
Basic salary: range and average (men)	26,175	137,310	50,932	23,047	138,141	45,458
Basic salary: range and average (women)	26,175	125,441	43,294	23,209	119,722	38,386
Variable remuneration: range and average (men)	77	64,475	2,258	92	19,765	2,138
Variable remuneration: range and average (women)	78	36,713	1,618	92	11,267	1,515
Basic salary: ratio women to men	1:1	0.91:1	0.85:1	1:1	0.86:1	0.84:1
Variable remuneration: ratio women to men	1.01:1	0.56:1	0.71:1	1:1	0.54:1	0.70:1

T 89

RESPONSIBILITY FOR CUSTOMERS AND PRODUCTS

G4-PR1-9

In order to produce high-quality products, we need high-quality raw materials. We source raw materials and components for our solar power modules from reputable manufacturers, whom we audit regularly. In this way, we make sure they meet our standards. ► *Procurement – p. 192*

Quality management assures the quality of our products groupwide. Data sheets and installation instructions are supplied together with our products. We have our products and production facilities certified regularly according to numerous criteria. Product certifications cover 100 percent of our modules.

SolarWorld modules have the following certifications:

- PV module type approval and safety qualification according to: IEC 61215, IEC 61730-1, IEC 61730-2
- US safety approval according UL 1703
- VDE tested safety: Sunmodule Plus combined with mounting system Sunfix Plus
- Fire classification of construction products and building elements according to EN 13501-1: normal flammability according to reaction-to-fire performance class E
- PID-resistance testing according to IEC 62804: draft 2013-12
- Salt mist corrosion testing according to IEC 61701 ed. 2.0
- Ammonia corrosion testing according to IEC 62716 ed. 1.0

Our products are manufactured in accordance with the current standards and directives:

- Photovoltaic devices according to the DIN EN 60904 series of standards
- Actions on structures acc. to: EN 1991
- Design of steel structures acc. to: EN 1993
- Design of timber structures acc. to: EN 1995
- Design of aluminium structures acc. to: EN 1999

At the end of 2016, we became one of the first manufacturers of solar power technology to apply for certification under IEC TS 62941, the new quality standard for manufacturing photovoltaic modules, for our production facility in Freiberg. We received certification in early 2017. In the German market, the SolarWorld solar module is one of the few products, in conjunction with our proprietary mounting system, to carry the VDE “GS” (tested safety) mark. Recently, VDE awarded our modules the VDE Quality Tested certificate, thus attesting to high reliability, low degradation and optimized functional safety. TÜV Rheinland tests the power output of SolarWorld modules. The “Power controlled” inspection mark documents that the rated power is adhered to and monitored by solar experts from this independent inspection service provider.

To demonstrate the excellent quality of our solar power modules, we subject them to thorough testing in our test lab. Product quality assurance is a top priority for SolarWorld. Reliable durability, low performance loss, no PID and security against hotspots are the demands placed on solar modules to deliver exceptional yields over decades. Of course our modules meet international standards for product safety and ease of use. Numerous certifications for modules and management systems are evidence of this fact.

In 2016, there were no breaches of regulations or of voluntary commitments regarding:

- Product safety and labeling
- Customer health and safety

Therefore, there were no fines or other non-financial sanctions.

In addition to product quality, customer satisfaction is important to us, too. We conduct annual surveys of customer satisfaction with wholesalers and installers. Overall, 86.3 (2015: 87.3) percent of those surveyed said they were satisfied or very satisfied. Satisfaction with product quality stood at 99.0 (2015: 99.5) percent.

Our communication activities are oriented to the medium and long term, with the goal of promoting solar power technology worldwide as a permanent part of a sustainable energy supply. The measures are also aimed at raising consumer awareness to encourage carefully considered, resource-efficient behavior for climate and environmental protection.

Our marketing activities in the 2016 fiscal year focused on communicating the added value of our solar power modules with PERC technology, which deliver more power with the same module dimensions. We also communicated the added value, in terms of increased energy yield, of our innovative Sunmodule Bisun, which generates electricity on the back as well as the front of the module, to our customers in the commercial rooftop segment.

Furthermore, we continued the development of our SolarWorld solar power calculator, which was designed in-house. End customers can plan their SolarWorld solar power sys-

tem online and easily view all essential parameters such as system costs and yield. In 2016, the solar power calculator for the Italian market went online, too.

There are no written advertising-related rules of conduct or Environment, Social, Governance (ESG) standards specified for the entire organization. In its advertising, the SolarWorld group complies with the law and is guided by the SolarWorld values, such as fair competition and avoiding discrimination. We always make our sponsorship activities transparent.

In 2016, there were no breaches of regulations or of voluntary commitments regarding:

- Controversial advertising or sponsorship
- Privacy or data protection

Therefore, there were no fines or other non-financial sanctions.

PRODUCT INFORMATION

Criteria	Procedure	Labeling of final products (module/system)
Origin of product components	In assessing the environmental impact, we also include the upstream process. We also assess our suppliers as required under ISO 9001. The same criteria are applied in selecting suppliers of consumables and raw materials. There is also a product information sheet for our cells.	The country of manufacture is indicated, but not the origin of individual components.
Composition	Not compulsory	Not indicated
Safe use of product	Our outgoing goods controls provide an additional check to ensure that no defective products are shipped, only products meeting customer requirements. In most cases, quality assurance agreements are additionally concluded with customers.	A warning about electrical danger is included. A user information sheet (assembly instructions) is included in deliveries.
Product disposal	The recycling of input and end products is carried out in accordance with statutory regulations. To be emphasized here is the revised WEEE Directive that has recently come into effect in Europe, whose latest version also includes photovoltaic products.	The labeling of modules and inverters is through the official symbol of the crossed out waste container.

COMPLIANCE

G4-HR1-12

EMPLOYEE AND HUMAN RIGHTS

According to the assessment of the HR departments of the individual sites, no business operations have been identified where freedom of association or the right to engage in collective bargaining could be significantly jeopardized. To date however, no formal procedure exists for identifying such business activities. We maintain open and direct dealings with employees, aimed at ensuring that any risks are reported to us. The legislation in Germany and the U.S. protects employees against any restrictions of their rights. At the site in South Africa, we currently have seven employees, nine in France and Singapore and five in Japan and Great Britain. These lean structures favor a strong participation of the individual employees in the decisions of management. Specific training on human rights aspects are considered in the new compliance e-learning training courses introduced in 2016.

Our business activities do not involve a significant risk of incidents of child labor or work by young people under dangerous conditions, as the main sites are in Germany and the United States. There is also no significant risk of forced or compulsory labor. We also employ no prisoners. Our processes are transparent and are supervised via documentation in the work schedules. We also consider these aspects in our regular supplier audits. However, given our procurement strategy, our value chain is internationally oriented, meaning that this risk does tend to exist. However, there are no known significant effects. Since 2015, we use the “risk methods” software tool to monitor the supply chain. We also emphatically oppose child, forced and compulsory labor in our Code of Conduct and in our Supplier Code of Conduct. Our Supplier Code of Conduct is based on the Social Accountability International standard (SA 8000) and forms part of contracts. ► *Compliance, ethics and integrity – p. 181* There was no systematic screening of our suppliers and contractors on human rights aspects in the past, nor is this set out in agreements. This was not a high priority in the past, as our suppliers and contractors were primarily based in Europe and the United States where strict national regulations apply. Because of the increasingly global procurement strategy, this aspect must receive more attention in the future.

In the reporting period, there were no significant investment agreements which were decisive in terms of volume or strategic importance for the company. As a result, there were no human rights clauses associated with such agreements. As in the preceding years, no violations of human rights were registered in 2016. There were likewise no changes in terms of the safeguarding of employee and human rights. To date, no processes have been subjected to examinations and effects analyses concerning observance of human rights. One case of discrimination was investigated in the United States. To date, we do not exert any influence on the rights of indigenous peoples through our business activities.

G4-S01-I1

ANTI-CORRUPTION EFFORTS, POLITICS AND IMPACT ON SOCIETY

Responsibility for corruption risks rests in the hands of members of the Management Board and managing direc-

tors. To support this, we have a compliance organization and an internal corporate audit department. ► [Corporate governance—Compliance management system—p. 090](#) ► [Internal control system—p. 026](#) ► [Compliance, ethics and integrity—p. 181](#) The Corporate Audit conducted a total of nine audits in the financial year 2016. Of these, three audits concerned the Bonn site, three the Arnstadt site, two the Freiberg site and one the Hillsboro site. Focal points such as correctness, compliance and internal approval processes were audited extensively. We define an auditable unit as being a company, a department, a legal person, a major project or a process. In 2016, we identified a total of 74 auditable units, of which 18 were audited in terms of various risks, including compliance risks. This equates to 24 percent of the auditable units. In addition, the Corporate Audit concerned itself with various internal consulting projects in 2016.

We also record the share of our shipment volumes in countries with a corruption index ► [KPIs & KPNs for ESG—p. 245](#) ► [Management report forecast—p. 058](#)

CORRUPTION RISKS

	2016	2015	2014	2013
Module corruption index	20.0%	10.7%	13.5%	23.4%
Wafer corruption index	20.0%	24.7%	5.9%	86.6%
Total corruption index	20.0%	11.3%	13.3%	44.5%

The compliance committee carries out an ongoing risk analysis for the group. As a result of the business operations of SolarWorld, the main risk areas are: 1. Capital market compliance, 2. Corruption/anti-trust laws, 3. Export controls, 4. Data privacy & IT security. Training measures for the risk areas are conducted annually and groupwide. The information provided on the subject of compliance in this report therefore also applies to the subject of corruption prevention. The entire Management Board is informed regarding compliance (incl. anti-corruption). No statistics are as yet available concerning the share of trained and informed employees. All principal suppliers are informed of the Supplier Code of Conduct. ► *Compliance, ethics and integrity p. 181* No political donations are made. No cases of corruption were investigated in 2016; there were likewise no ongoing or completed proceedings, and no legal action was brought whatsoever. In addition, no legal action was brought based on anti-competitive behavior.

No major cases of non-compliance with laws and regulations were determined in the reporting period or the previous years, nor were any out-of-court arbitration proceedings held. No complaints were lodged, processed or solved through formal complaint procedures regarding social impact. Our suppliers are not yet systematically checked in terms of these effects. We are not aware of any social effects in the supply chain. The risk methods software tool that has been in use since 2015 is also designed to provide corresponding information on possible incidents.

The concerns of the residents of our sites, particularly of our facilities, are important to us. We assess the social impact of our activities as predominantly positive, since we create jobs. We constantly monitor our environmental impact and disclose it annually in our sustainability report and on our website. As we provide the technology to turn solar energy into power, and since our solar modules generate considerably more electricity than is necessary during their production, we also rate our environmental impact as mainly positive. For compliance-related issues our stakeholders can contact integrity@solarworld.com.

We are a founding member of the integration initiative „Wir zusammen“ of the German economy and have started the program Integration@SolarWorld. We offer refugees the opportunity to gain insight into the working world and our group. Thus, we want to facilitate their integration into our society. Apart from this, no further measures to involve local communities or support programs were implemented.

KPIs & KPNS FOR ESG

The European Federation of Financial Analysts Societies (EFFAS) Commission on ESG and the German Society of Investment Professionals (DVFA) Commission on Non-Financials (CNF) publish the “KPIs and KPNS for ESG 3.0”: Key Performance Indicators and Narratives on the integration of extra- and non-financial performance indicators pertaining

to ESG (Environmental, Social, Governance), sustainability, corporate governance and risk management for integration into classical company rating and investment decisions. We have been reporting on the basis of these criteria since 2008.

PERFORMANCE INDICATORS AND NARRATIVES (SECTOR: RENEWABLE ENERGY EQUIPMENT)

for Environmental, Social, Governance (ESG) of EFFAS/DVFA

Indicator	Name	Description	2017	2016	2015	2014	2013	Comment
E01-01 (Scope I)	Energy efficiency	Total energy consumption (in primary GJ)	↑	4,666,264	4,427,860	3,084,137	2,596,389	► G015-EN015 – p. 201
E02-01 (Scope I)	GHG emissions	Total GHG emissions (in tCO ₂ eq)	↑	188,227	178,458	125,567	95,693	► G4-EN015 – p. 203
S01-01 (Scope I)	Attrition	Share of employees leaving the company per year	↑	10 %	8 %	10 %	17 %	No distinction is made between fulltime and part time work. ► G4-LA12 – p. 216
S02-02 (Scope I)	Training and professional development/ qualification	Average training expenditure/ employee (in €)	↓	175	218	180	200	► G4-LA9 – p. 229
S03-01 (Scope I)	Age structure of the workforce	In 10-year steps	↔	< = 30: 15 %, 31–40: 31 %, 41–50: 27 %, >50: 27 %	< = 30: 16 %, 31–40: 30 %, 41–50: 28 %, >50: 26 %	< = 30: 16 %, 31–40: 31 %, 41–50: 30 %, >50: 23 %	< = 30: 19 %, 31–40: 32 %, 41–50: 29 %, >50: 21 %	► G4-LA12 – p. 231
S08-01 (Scope I)	Pay	Total amount of all bonus payments (in m€)	↔	5	6	5	12	We do not grant stock options. ► G4-LA13 – p. 236
S08-02 (Scope I)	Pay	Number of FTE who receive 90 % of the bonus payments	On this topic, we do not have any data yet, as our database does not allow for such analysis.					

Indicator	Name	Description	2017	2016	2015	2014	2013	Comment
S08-03 (Scope I)	Pay	Consideration of the ESG performance in the target agreements	The ESG performance is not explicitly considered in the target agreements but is included via the basic attitude towards sustainable corporate governance. Sustainability is one of the pillars of our competence model.					
V01-01 (Scope I)	Litigation risks	Expenditures and fines for lawsuits and court cases regarding anti-competitive behavior, Anti-Trust, monopoly behavior (in m€)	n.s.	n.s.	n.s.	n.s.	0.4	In the context of the trade case and complaints, SolarWorld invested the indicated sum in the U.S. and the EU. Since 2014, the sum cannot be disclosed, because it is considered confidential.
V02-01 (Scope I)	Corruption	Share of business activity in regions with a corruption index of less than 60	↑	20 %	11 %	13 %	45 %	Data for wafers and modules ► G4-S002 – p. 243
V03-02 (Scope I)	Earnings from new products	Earnings share from products with life cycles of less than 12 months	↑	23 %	67 %	53 %	60 %	Specifications relate to modules, rack system and complete systems. Estimates for previous years were based on data provided by SolarWorld AG and did not include products to which only minor modifications have been made
V04-01 (Scope I)	Innovation	Total R&D expenditures (in m€)	↓	26,0	23.3	29.0	26.5	► Research and Development – p. 038
V04-12 (Scope I)	Innovation	Total investment in research on ESG relevant aspects	↔	100 %	100 %	100 %	100 %	Our entire business (solar energy) is ESG relevant.
E23-02 (Scope II)	Production loss	Monetary effects of production loss due to material bottlenecks (in €)	The information is not disclosed.					
E28-01 (Scope II)	Water consumption	Total water take-out (in m³)	↑	2,028,001	1,981,634	1,538,953	1,168,437	► G4-EN8 – p. 201
E33-01 (Scope II)	Environmental compatibility	Share of DIN ISO 14001 certified locations (weighted by average capacity)	↔	100 %	100 %	100 %	100 %	The indicator can decrease temporarily if new capacities are ramped up, which have not yet been certified at the cut-off date.
G01-01 (Scope II)	Donations to political parties	Donations to political parties (in k€)	↔	0	0	0	0	Since 2010, we have not made any political donations.
S11-01 (Scope II)	Relocation of work places due to restructuring	Total costs of relocation (in k€) including compensation payments, severance pay, outplacement, recruitments, training, consulting	↑	75	164	294	112	
V06-01 (Scope II)	Customer satisfaction with SolarWorld	Share of satisfied customers among all respondents	↑	86 %	87 %	86 %	94 %	Aggregate figure (Trade)
V10-03 (Scope II)	Effects of subsidies	Share of business activity in markets with feed-in tariff or regulated pricing	↔	100 %	100 %	100 %	100 %	The shipment share in markets without feed-in tariff or regulated pricing is still below 1%.
V13-01 (Scope II)	Utilization	Capacity utilization in relation to the nominal capacity (in percent)	The information is not disclosed. But we do disclose our capacities. ► Production capacities 2016 – p. 038					

Indicator	Name	Description	2017	2016	2015	2014	2013	Comment
V28-01 (Scope II)	Supply chain	Total number of suppliers	↔	ca. 175	ca. 210	ca. 180	ca. 180	Bill of Material
V28-02 (Scope II)	Supply chain	Share (volume) of the 3 largest external suppliers	↔	20%	21%	17%	13%	
V28-03 (Scope II)	Supply chain	Sales share of suppliers (in %)	↔	70%	64%	ca. 60%	ca. 60%	Direct material ► Procurement – p. 192
E17-35 (Scope III)	Supply bottlenecks	Sales share of products containing Indium	Not used					
E17-36 (Scope III)	Supply bottlenecks	Total procurement volume Indium	Not used					
E22-01 (Scope III)	Raw material	Covered demand (in days) of A (B, C, D) materials	Through long-time contracts, we secure approx. 80% of the required capacities.					
E23-01 (Scope III)	Production loss	Production loss, i.e. difference between planned and actual production, due to material bottlenecks (in %)	The information is not disclosed.					
E28-02 (Scope III)	Water consumption	Water (in m3/MWp)	↑	1,813	1,637	1,908	2,958	► Environmental Goals – p. 197
E28-03 (Scope III)	Water consumption	Ground water consumption (in m3)	↔	0	0	0	0	
E28-04 (Scope III)	Water consumption	Waste water discharge (in m3)	↑	1,742,461	1,630,594	1,336,489	1,012,247	► G4-EN21 – p. 203
V05-01 (Scope III)	Customer loyalty	Share of new customers (Authorized Installers)	↑	19%	28%	30% (direct customers), 18% (authorized installers)	39% (direct customers), 35% (authorized installers)	The indicator across the group refers to module and system customers.
V05-03 (Scope III)	Customer loyalty	Market share (total)	↔	2%	2%	2%	2%	
V28-04 (Scope III)	Supply chain	Maintenance of ESG standards by suppliers	All main suppliers are audited along QHSE criteria every two to three years. The Supplier's Code of Conduct is a contract component. ► Procurement – p. 192					
V28-05 (Scope III)	Supply chain	Incentives for procurement to select suppliers who are well prepared in terms of ESG even though they may charge higher prices	SolarWorld's minimum standards have to be followed. Our suppliers' sustainability performance is systematically incorporated into their assessment. ► Procurement – p. 192					

GLOBAL REPORTING INITIATIVE (CATEGORIZATION AND INDEX)

GRI INDEX “IN ACCORDANCE” WITH GRI G4 GUIDELINES – COMPREHENSIVE

Audit review by the BDO AG, Wirtschaftsprüfungsgesellschaft

G4 GRI Content Index

General Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
Strategy and Analysis				
G4-1	Statement from the most senior decision-maker	► <u>Letter by the Chairman – p. 006</u>	Not applicable	No
G4-2	Key impacts, risks and opportunities	► <u>G4-2 – p. 173</u>	Not applicable	Yes
Organizational Profile				
G4-3	Name of the organization	SolarWorld AG	Not applicable	Yes
G4-4	Primary brands, products, services	We are a vertically integrated company and occasionally fall back on tolling. Our logistics from factory gate to the customer are taken care of by service companies.	Not applicable	No
G4-5	Location of the organization's headquarters	Bonn, Germany	Not applicable	Yes
G4-6	Countries where the organization operates	► <u>2.3.3 Group structure – p. 122</u>	Not applicable	Yes
G4-7	Nature of ownership and legal form	► <u>Shareholder structure – p. 030</u>	Not applicable	Yes
G4-8	Markets	► <u>The market – p. 031</u> ► <u>Strategy – p. 023</u>	Not applicable	Yes
G4-9	Scale of organization	► <u>Financial position – p. 051</u> ► <u>Employees – p. 044</u>	Not applicable	Yes
G4-10	Total workforce by employment type, employment contract and region	► <u>G4-10 – p. 212</u>	Not applicable	Yes
G4-11	Employees covered by collective bargaining agreements	► <u>G4-11 – p. 221</u>	Not applicable	Yes
G4-12	Description of supply chain	► <u>G4-12 – p. 192</u>	Not applicable	Yes
G4-13	Significant changes in size, structure, supply chain or ownership	► <u>2.3 Basis of consolidation and group structure – p. 119</u>	Not applicable	Yes
G4-14	Precautionary principle	► <u>G4-14 – p. 177</u>	Not applicable	No
G4-15	External agreements, principles or initiatives	► <u>G4-15 – p. 189</u>	Not applicable	Yes
G4-16	Association Memberships	► <u>G4-16 – p. 187</u>	Not applicable	Yes

G4 GRI Content Index

General Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
Identified Material Aspects and Boundaries				
G4-17	Organizational structure	► 2.3 Basis of consolidation and group structure – p. 119	Not applicable	Yes
G4-18	Process for defining report content	► G4-18 – p. 174	Not applicable	Yes
G4-19	Material Aspects which were identified in the process for defining report content	► G4-19 – p. 174	Not applicable	Yes
G4-20	Boundary within the organization	► G4-20 – p. 174	Not applicable	Yes
G4-21	Boundary outside the organization	► G4-21 – p. 174	Not applicable	Yes
G4-22	Restatement of information from earlier reports	► G4-22 – p. 176	Not applicable	Yes
G4-23	Changes in reporting scope, boundary or measuring methods	► G4-23 – p. 176	Not applicable	Yes
Stakeholder Engagement				
G4-24	Stakeholder groups	► G4-24 – p. 183	Not applicable	Yes
G4-25	Identification and selection of stakeholders	► G4-25 – p. 183	Not applicable	Yes
G4-26	Engagement of stakeholders	► G4-26 – p. 185	Not applicable	Yes
G4-27	Key topics and concerns raised by stakeholders and reaction of the company	► G4-27 – p. 185	Not applicable	Yes
Report Profile				
G4-28	Reporting period	Calendar year 2016 (01/01/2016 – 12/31/2016) = business year 2016	Not applicable	Yes
G4-29	Date of last report, if applicable	Calendar year 2015 (01/01/2015 – 12/31/2015) = business year 2015	Not applicable	Yes
G4-30	Reporting cycle (annual, biennial, etc.)	Annual	Not applicable	Yes
G4-31	Contact for questions on report or its contents	Martin Schemoschek ► sustainability@solarworld.com	Not applicable	Yes
G4-32	GRI index	The present table ► GRI Index – p. 248	Not applicable	Yes
G4-33	External assurance	► G4-33 – p. 176 ► Confirmation – p. 259	Not applicable	Yes

G4 GRI Content Index

General Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
Governance				
G4-34	Governance structure of the organization	► Management Board – p. 086	Not applicable	Yes
G4-35	Delegating authority	► G4-35 – p. 180		Yes
G4-36	Sustainability organization	► G4-36 – p. 180		Yes
G4-37	Processes for consultation between stakeholders and the highest governance bodies	► G4-37 – p. 180		Yes
G4-38	Details of unitary organization	Not applicable		Yes
G4-39	Declaration stating whether the Chairs of the highest governance bodies are also an Executive Officer	By definition, the Chief Executive Officer is part of the top management.		Yes
G4-40	Process for determining the composition, qualifications and expertise of the members of the highest governance bodies and its committees under consideration of diversity (gender and other indicators)	► G4-40 – p. 179		Yes
G4-41	Mechanisms for avoidance of conflicts of interest within the highest governance bodies	► G4-41 – p. 179		Yes
G4-42	Roles of the highest governance bodies and senior executives in developing organization's purpose	► G4-42 – p. 180		Yes
G4-43	Measures taken to enhance knowledge of the highest governance bodies on sustainability topic	► G4-43 – p. 179		Yes
G4-44	Procedures for evaluating the highest governance bodies' own sustainability performance	► G4-44 – p. 180		Yes
G4-45	Procedures of the highest governance bodies for overseeing sustainability performance	► G4-45 – p. 180		Yes
G4-46	Roles of the highest governance bodies in risk management	► G4-46 – p. 177		Yes
G4-47	Review of impacts, risks and opportunities	► G4-47 – p. 177		Yes
G4-48	Formal review and approval of the sustainability reporting	► G4-48 – p. 180		Yes
G4-49	Process for communicating critical concerns	► G4-49 – p. 181		Yes
G4-50	Nature and total number of critical concerns	► G4-50 – p. 181		Yes
G4-51	Remuneration Policy for top management and relationship to sustainability performance	► G4-51 – p. 236		Yes
G4-52	Determining compensation	► G4-52 – p. 236		Yes
G4-53	Compensation policies	► G4-53 – p. 236		Yes
G4-54	Comparison of salaries	► G4-54 – p. 236		Yes
G4-55	Percentage comparison of salaries	► G4-55 – p. 236		Yes
Ethics and Integrity				
G4-56	Statements of mission, values, codes of conduct, principles as well as status of implementation	► G4-56 – p. 181	Not applicable	Yes
G4-57	Internal and external mechanisms for seeking advice on ethical and integrity matters	► G4-57 – p. 181		Yes
G4-58	Internal and external mechanism for reporting concerns on ethical and integrity matters	► G4-58 – p. 181		Yes
Disclosures on Management Approach (DMA)				
Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
G4-DMA	Management approach regarding the materiality aspects and themes	► G4-DMA – p. 177		Yes

G4 GRI Content Index

Specific Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
Economic				
G4-EC1	Direct economic value generated and distributed	► G4-EC1 – p. 191		Yes
G4-EC2	Financial implications due to climate change	► G4-EC2 – p. 193		Yes
G4-EC3	Coverage of organization's defined benefit plan obligations	► G4-EC3 – p. 236		Yes
G4-EC4	Financial assistance received from government	► G4-EC4 – p. 191		Yes
G4-EC5	Entry level wage compared to local minimum wage	► G4-EC5 – p. 236		Yes
G4-EC6	Locally based hiring of employees	► G4-EC6 – p. 231		Yes
G4-EC7	Infrastructure investments and services provided mainly for public benefit	► G4-EC7 – p. 191		Yes
G4-EC8	Indirect economic impacts	Not reported, not material		No
G4-EC9	Selection of locally based suppliers	► G4-EC9 – p. 192 ; The main locations are our production sites in Arnstadt, Freiberg and in Hillsboro. Accordingly, we define the EU and the U.S. as local markets (35 percent of procurement expenditures). The term "locally based" is defined in a way that is analogous to our segments (IAS 14). ► 15. Segment reporting – p. 141		Yes
Environmental				
G4-EN1	Materials used	► G4-EN1 – p. 198		Yes
G4-EN2	Recycling input materials	► G4-EN2 – p. 198		Yes
G4-EN3	Energy consumption within the organization	► G4-EN3 – p. 200		Yes
G4-EN4	Energy consumption outside of the organization	► G4-EN4 – p. 201		Yes
G4-EN5	Energy intensity	► G4-EN5 – p. 201		Yes
G4-EN6	Reduction of energy consumption	► G4-EN6 – p. 201		Yes
G4-EN7	Initiatives for energy efficiency and renewable energy	► Production and global supply chain – p. 037 ► G4-EN7 – S. 201		Yes
G4-EN8	Total water withdrawal	► G4-EN8 – p. 201		Yes
G4-EN9	Impact of water consumption	► G4-EN9 – p. 201		Yes
G4-EN10	Water recycled and reused	► G4-EN10 – p. 201		Yes
G4-EN11	Land in or adjacent to protected areas or areas of high biodiversity value	Not reported, not material		No
G4-EN12	Impact on biodiversity	► G4-EN12 – p. 207		Yes
G4-EN13	Habitats protected or restored	Not reported, not material		No
G4-EN14	Threatened species	Not reported, not material		No
G4-EN15	Direct greenhouse gas emissions	► G4-EN15 – p. 203		Yes
G4-EN16	Indirect greenhouse gas emissions	► G4-EN16 – p. 203		Yes
G4-EN17	Other relevant greenhouse gas emissions	► G4-EN17 – p. 203		Yes
G4-EN18	Greenhouse gas emissions intensity	► G4-EN18 – p. 203		Yes
G4-EN19	Initiatives to reduce greenhouse gas emissions	► G4-EN19 – p. 203		Yes
G4-EN20	Emissions of ozone-depleting substances	► G4-EN20 – p. 207		Yes
G4-EN21	NO _x , SO _x and other significant air emissions	► G4-EN21 – p. 203		Yes
G4-EN22	Total water discharge	► G4-EN22 – p. 202		Yes
G4-EN23	Waste by type and disposal method	► G4-EN23 – p. 205		Yes
G4-EN24	Significant spills	► G4-EN24 – p. 207		Yes
G4-EN25	Hazardous waste under Basel Convention	Not reported, not material		No
G4-EN26	Impact of water discharges on biodiversity	Not reported, not material		No

G4 GRI Content Index

Specific Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
G4-EN27	Initiatives to mitigate environmental impacts	► G4-EN27 – p. 207		Yes
G4-EN28	Packaging materials	► G4-EN28 – p. 206		Yes
G4-EN29	Sanctions for noncompliance with environmental laws and regulations	► G4-EN29 – p. 197		Yes
G4-EN30	Environmental impacts of transporting products	Not reported, not material		No
G4-EN31	Environmental protection expenditures	Not reported, not material		No
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	Not reported, not material		No
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	Not reported, not material		No
G4-EN34	Grievances about environmental impacts	► G4-EN34 – p. 197		Yes
Social				
G4-LA1	Attrition rate	► G4-LA1 – p. 216		Yes
G4-LA2	Benefits to full-time employees	► G4-LA2 – p. 218		Yes
G4-LA3	Return rate and retention rate after parental leave	► G4-LA3 – p. 219		Yes
G4-LA4	Minimum notice periods regarding significant operational changes	Not reported, not material		No
G4-LA5	Employees represented in worker health and safety committees	► G4-LA5 – p. 222		Yes
G4-LA6	Injuries, occupational diseases, lost days, absenteeism and work-related fatalities	► G4-LA6 – p. 222	Data protection: Occupational diseases can not be documented. In the U.S., sick leaves can not be documented.	Yes
G4-LA7	Counseling and training on serious diseases	► G4-LA7 – p. 222		Yes
G4-LA8	Health & safety topics covered in agreements with trade unions	Not material, topics of health and safety at the workplace are subject to co-determination (Works Council in Freiberg and Bonn). All of these agreements are signed by the company. ► G4-LA8 – p. 222		Yes
G4-LA9	Initial and further training for employees	► G4-LA9 – p. 229		Yes
G4-LA10	Programs for skills management and life-long learning	Not reported, not material		No
G4-LA11	Performance and career development reviews for employees	Not reported, not material		No
G4-LA12	Diversity and equal opportunities	► G4-LA12 – p. 231		Yes
G4-LA13	Ratio of women's basic salary to men's	► G4-LA13 – p. 236		Yes
G4-LA14	Percentage of new suppliers that were screened using criteria for labor practices	► G4-LA14 – p. 215		Yes

G4 GRI Content Index

Specific Standard Disclosures

Standard	Description	Cross-reference/Direct answer	Omissions	External Assurance
G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	► G4-LA15 – p. 215		Yes
G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	► G4-LA16 – p. 215		Yes
G4-HR1	Investment agreements	► G4-HR1 – p. 242		Yes
G4-HR2	Training on aspects of human rights	► G4-HR2 – p. 242		Yes
G4-HR3	Incidents of discrimination	► G4-HR3 – p. 242		Yes
G4-HR4	Freedom of association and collective bargaining	► G4-HR4 – p. 242		Yes
G4-HR5	Child labor	► G4-HR5 – p. 242		Yes
G4-HR6	Forced or compulsory labor	► G4-HR6 – p. 242		Yes
G4-HR7	Training of security personnel	► G4-HR7 – p. 242		Yes

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FURTHER INFORMATION

COMMUNICATION ON PROGRESS TO THE UN GLOBAL COMPACT

GC ADVANCED LEVEL

This Communication on Progress includes the statement of Commitment to the Global Compact: ► [*About this report – Sustainability – p. 002*](#) the description of practical steps

to implement the ten Principles of the Global Compact in fiscal year 2016 as well as the measurement of outcomes based on application of the Global Reporting Initiative's performance indicators.

OVERVIEW OF THE COMMUNICATION ON PROGRESS (GLOBAL COMPACT)

Issues	Principles of the Global Compact
Human Rights	Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights. Principle 2: Businesses should make sure that they are not complicit in human rights abuses.
Labor	Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to free collective bargaining. Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labor. Principle 5: Businesses should uphold the effective abolition of child labor. Principle 6: Businesses should uphold the elimination of discrimination in respect of employment and occupation.
Environment	Principle 7: Businesses should support a precautionary approach to environmental challenges. Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility. Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

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Principles	Commitments: Quotations
Principles 1, 2, 6	Guideline 1: "We stand for respect and equal opportunities."
Principle 7	Guideline 2: "Our production is compatible with the protection of the environment using the best possible processes and product standards."
Principle 7	Guideline 3: "We use existing resources responsibly and sparingly."
Principles 1 and 2	Guideline 4: "We use state-of-the-art methods to avoid any health hazards and risks that may be caused by the SolarWorld group processes and products."
Principle 10	Guideline 5: "Fair competition is the very basis of our business activities. Bribery and corruption are unlawful and not tolerated."
Principles 1–10, especially Principles 4 and 5	Guideline 10: "We support the ten principles of the Global Compact of the United Nations and also demand compliance with it from our suppliers and business partners."
Principles 1 and 2	Code of Conduct: "We respect the rights and dignity of all employees."
Principle 3	Code of Conduct: "SolarWorld upholds the freedom of association and respects the right to free collective bargaining."
Principles 4 and 5	Code of Conduct: "Forced and child labor are strictly forbidden by law in most countries and worldwide at SolarWorld."

Principles	Commitments: Quotations
Principle 6	Code of Conduct: "Nobody, independent of his cultural, religious or personal background, shall be subjected to discrimination in the SolarWorld group."
Principles 7–9	Code of Conduct: "The SolarWorld group devotes particular attention to protecting the environment. It is our declared aim to promote the protection of climate and resources in active ways. We therefore fully pledge to respect all applicable rules and international standards."
Principle 10	Code of Conduct: "The SolarWorld group recognizes both the International Chamber of Commerce Rules of Conduct to Combat Extortion and Bribery in International Business Transactions published in 1999 and the OECD (Organisation for Economic Co-operation and Development) Anti-Bribery Convention of 1997. Please note that in connection with business activities, no unfair advantages, irrespective of whether in the form of cash or non-cash rewards, shall be offered or granted directly or indirectly either at home or abroad. Our operations are also subject to regulation by the antibribery laws of each country in which we operate, including the U.S. Foreign Corrupt Practices Act and the UK Bribery Act. Vigilance is critical as we conduct increasingly more business globally. Increasing competitive pressures, both domestic and abroad, will not be permitted to undermine our commitment to ethical conduct and compliance with laws."

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Principles	Systems	Notes/Cross References
Principles 1–10	Values and guidelines	► www.solarworld.de/en/vision ► www.solarworld.de/en/corporate-policy ► www.solarworld.de/en/sustainability
Principles 1–10	Supplier Code of Conduct	► G4-56 – p. 181 ► G4-DMA – p. 177 ► www.solarworld.de/en/code-of-conduct-for-suppliers
Principles 1 and 2	Health & safety management	► GRI Index – p. 248 ► G4-LA5-8 – p. 222
Principles 1 and 2	No use of private security forces by the SolarWorld group	
Principle 3	Guidelines and procedures do not favor individual associations or trade unions	► G4-11 – p. 221 ► G4-HR4 – p. 242
Principle 3	Conditions permitting employees to exercise functions in associations or trade unions	► G4-11 – p. 221 ► G4-HR4 – p. 242
Principle 4	Pay always exceeds the local minimum wage	Standard applies groupwide
Principle 4	Maximum regular working week is 40 hours, with incremental pay for overtime	Standard applies groupwide (in the U.S., no formal fringe benefits)
Principle 5	Minimum working age is respected, including when selecting suppliers	Minimum age 15 years (cf. ILO Convention 138(7)) or higher local minimum age groupwide standard
Principle 6	Standards enshrined in the German Equality Act (AGG) are applied	Standard applies groupwide (on a voluntary basis)
Principles 7–7, 9	Environmental management	► G4-DMA – p. 177 ► G4-EN1-34 – p. 198
Principles 1–10	High legal standards in Germany and the United States	► G4-EN21 – p. 203 ► G4-EN28 – p. 206 ► G4-LA6 – p. 222 ► G4-HR4 – p. 242 ► G4-PR3+6+9 – p. 240
Principle 10	Compliance Management System	► G4-56 – p. 181

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Principles	Measures in 2016	Notes/Cross References
Principles 1–10	Continuation of the Compliance Management System	► G4-56 – p. 181
Principles 1–10	Continuation of the whistleblower system SolarWorld SpeakUp	► G4-56 – p. 181
Principles 1–10	Sustainable group governance	► G4-56 – p. 181
Principle 3	Agreements with trade unions	► G4-11 – p. 221 ► G4-HR5 – p. 242
Principles 7–9	Life Cycle Analysis	► Environmental commitment – p. 040 ► G4-EN27 – p. 207
Principle 7	Precautionary principle	► G4-14 – p. 177
Principle 8	PR activities to raise awareness	► Production and global supply chain – p. 037 ► G4-PR6 – p. 240
Principle 9	Continuous, because our business is exclusively solar energy	► www.solarworld.de/en/vision
Principle 9	Technical innovations in research and development (purely solar group)	► Strategy – p. 023
Principle 9	Solar2World projects	► G4-EC7 – p. 191

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Principles	Performance (see GRI Performance Indicators)	Notes/Cross References
Principle 1	Subcategory: Human rights (all aspects) Subcategory: Society – local communities	► G4-DMA – p. 177 ► G4-HR1-12 – p. 242 ► G4-SO1-2 – p. 243
Principle 2	Subcategory: Human rights (all aspects)	► G4-DMA – p. 177 ► G4-HR1-12 – p. 242 ► G4-SO1-2 – p. 243
Principle 3	Category: Labor practices and decent work conditions – labor/management relations Subcategory: Human rights – freedom of association and collective bargaining	► G4-DMA – p. 177 ► G4-11 – p. 221 ► G4-LA5 – p. 222
Principle 4	Subcategory: Human rights – forced or compulsory labor	► G4-DMA – p. 177 ► G4-HR6 – p. 242
Principle 5	Subcategory: Human rights – child labor	► G4-DMA – p. 177 ► G4-HR5 – p. 242
Principle 6	Subcategory: Labor practices and decent work conditions (all aspects) Subcategory: Human rights – non-discrimination	► G4-DMA – p. 177 ► G4-10 – p. 212 ► G4-LA14-16 – p. 215 ► G4-HR3 – p. 242
Principle 7	Category: Environment (all aspects)	► G4-DMA – p. 177 ► G4-EN1-28 – p. 198
Principle 8	Category: Environment (all aspects)	► G4-DMA – p. 177 ► G4-EN1-28 – p. 198
Principle 9	Category: Environment (all aspects)	► G4-DMA – p. 177 ► G4-EN1-28 – p. 198
Principle 10	Subcategory: Society – anti-corruption Subcategory: Society – public policy	► G4-DMA – p. 177 ► G4-SO3-5 – p. 243 ► G4-SO6 – p. 243

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Criterion	Notes/Cross-references
1 Mainstreaming into corporate functions and business units	SolarWorld's management determines the strategy and is responsible for its implementation in keeping with the principles of the Global Compact. The Management Board supervises its implementation. ► G4-DMA – p. 177 ► Corporate management and control – p. 025
2 Value chain implementation	SolarWorld has a Supplier Code of Conduct. The Supplier Code of Conduct requires our business partners to comply with all applicable environmental and social legislation, rules and standards and to operate an efficient system to identify and eliminate potential hazards. In addition, our suppliers are encouraged to make their contractors and other business partners comply with these standards, too. ► G4-S6 – p. 181 Supplier audits are carried out at regular intervals. We assess the suppliers along our five dimensions (commercial criteria, quality, technology, logistics and sustainability).
3 Robust commitments, strategies or policies in the area of human rights	In its Code of Conduct, SolarWorld explicitly refers to Principles of the Global Compact. The Supplier Code of Conduct also deals with the protection of human rights. ► G4-S6 – p. 181 In particular, the members of the Management Board, managing directors and other executives are responsible for compliance with the requirements.
4 Effective management systems to integrate the human rights principles	SolarWorld operates a compliance management system. As compliance training in 2016 focused on the main risks in the group, it was not possible to cover this subject. However, it is due for inclusion in future basic training courses. This topic is particularly significant in supplier management. Information and complaints relating to integrity can be submitted via the relevant channels within SolarWorld (e.g. Compliance Officers) or anonymously via SolarWorld SpeakUp.
5 Effective monitoring and evaluation mechanisms of human rights integration	Monitoring and evaluation are carried out via the internal points of contact (e.g. Compliance Officers) and via SolarWorld SpeakUp.
6 Robust commitments, strategies or policies in the area of labor	In its Code of Conduct, SolarWorld explicitly refers to Principles of the Global Compact. Labor is also dealt with in the Supplier Code of Conduct. ► G4-S6 – p. 181 In particular, the members of the Management Board, managing directors and other executives are responsible for compliance with the requirements.
7 Effective management systems to integrate the labor principles	The human resources department ensures compliance with labor standards in the group. This is also a particularly significant consideration in supplier management. Information and complaints relating to integrity can be submitted via the relevant channels within SolarWorld (e.g. Compliance Officers) or anonymously via SolarWorld SpeakUp.
8 Effective monitoring and evaluation mechanisms of labor principles integration	Monitoring and evaluation are carried out via the internal points of contact (e.g. Compliance Officers) and via SolarWorld SpeakUp.
9 Robust commitments, strategies or policies in the area of environmental stewardship.	In its Code of Conduct, SolarWorld explicitly refers to Principles of the Global Compact. Environmental protection is also dealt with in the Supplier Code of Conduct. ► G4-S6 – p. 181 A groupwide QHSE (Quality, Health, Safety & Environment) corporate policy also exists. In particular, the members of the Management Board, managing directors and other executives are responsible for compliance with the requirements.

Criterion	Notes/Cross-references
10 Effective management systems to integrate the environmental principles.	SolarWorld is ISO 14001 certified. In addition to the environmental management system, local “Green Teams” exist in which employees take action for sustainability. Information and complaints relating to the theme of integrity can be directed to internal points of contact within SolarWorld (e.g. Compliance Officers) as well as anonymously via SolarWorld SpeakUp.
11 Effective monitoring and evaluation mechanisms for environmental stewardship	Monitoring and evaluation are carried out via the internal points of contact (e. g. Compliance Officers) and via SolarWorld SpeakUp.
12 Robust commitments, strategies or policies in the area of anticorruption	In its Code of Conduct, SolarWorld explicitly refers to the Principles of the Global Compact. Anti-corruption is also dealt with in the Supplier Code of Conduct. ► G4-56 – p.181 In particular, the members of the Management Board, managing directors and other executives are responsible for compliance with the requirements.
13 Effective management systems to integrate the anti-corruption principle	SolarWorld has implemented a Compliance Management System. In 2015 compliance trainings for our managers and Compliance Officers took place, during which the topic anti-trust was one major topic. Information and complaints relating to the theme of integrity can be directed to internal points of contacts (e.g. Compliance Officers) within SolarWorld as well as to SolarWorld SpeakUp.
14 Effective monitoring and evaluation mechanisms for the integration of anti-corruption	Monitoring and evaluation are carried out via the internal points of contact (e. g. Compliance Officers) and via SolarWorld SpeakUp.
15 Actions taken in support of broader UN goals and issues	SolarWorld has designed its corporate strategy and operational processes to step up its contribution to the Global Compact principles. ► G4-56 – p.181 SolarWorld also implements projects that support the UN goals and issues, in collaboration with NGOs and charitable institutions. ► G4-EC7 – p.191
16 Strategic social investments and philanthropy	Under the umbrella Solar2World, SolarWorld implements solar electrification projects in developing countries. ► G4-EC7 – p.191
17 Advocacy and public policy engagement	SolarWorld conducts lobbying work in order to help solar energy become competitive, and is an advocate of political funding programs. ► G4-SO6 – p.243
18 Partnerships and collective action	SolarWorld also implements projects that support the UN goals and issues, in collaboration with NGOs and charitable institutions. ► G4-EC7 – p.191
19 CEO commitment and leadership	► About this report – Sustainability – p.002
20 Discussion of strategic aspects of the Global Compact at the Management Board level	The Board oversees the sustainability performance of the group. ► G4-56 – p.181 The main opportunities and risks in the short and medium term are disclosed. ► Group management report forecast – p.058
21 Engagement with all important stakeholders	SolarWorld explains the stakeholder analysis, including the stakeholder summary and process of stakeholder identification and integration. ► G4-24-27 – p.183

APPENDIX: MATERIALITY ANALYSIS – ASSESSMENT OF ALL ASPECTS AND THEMES

ASSESSMENT OF ALL ASPECTS AND THEMES

Aspects/topics	Board of directors	Stakeholder
Business model & strategy of the SolarWorld group	10.0	9.0
Corporate management & control	9.0	8.4
Macroeconomic influences	7.3	8.8
Solar market development	9.4	9.3
Economic indicators	8.8	9.2
Market presence	7.5	9.0
Business forecast	8.3	8.3
Chances & risk management system	7.5	8.0
Concrete opportunities	8.5	9.3
Concrete risks	8.8	8.8
Customer health & safety, protection of customer data	8.5	8.9
Products, services, innovations	8.0	9.1
Marketing & communication	8.5	8.4
Environmental impact	7.0	8.9
Employment	7.8	8.4
Employee-employer-relationship	8.3	8.5
Health & safety	8.3	8.4
Training & further education	7.3	7.9
Child & forced labor	6.5	9.0
Material	7.3	8.7
Energy & transportation	7.3	8.4
Water	7.5	7.4
Waste, waste water, emissions (discharge, filtering, avoidance)	8.0	8.2
Expenditure for environmental protection, maintenance of biodiversity	6.0	7.8
Dependency from suppliers	5.5	8.7
Procurement practices	5.8	8.5
Supplier rating	6.0	8.3
Business partners, investments	6.5	8.4
Local communities of	6.3	7.1
Indirect economic impacts	5.0	7.3
Respect of human rights	7.5	8.6
Corporate Governance	9.5	7.9
Compliance – Environmental aspects	8.8	8.5
Compliance – Anti-corruption & fair competition	8.3	8.6
Compliance – Political behavior	6.3	8.7

CONFIRMATION FOR THE SECTIONS “COMPANY PROFILE AND REPORT CONTENTS” AND “PERFORMANCE INDICATORS” OF THE REPORT SEGMENT “SUSTAINABILITY IN DETAIL 2016” OF SOLARWORLD AG, BONN, FOR THE CALENDAR YEAR 2016

To SolarWorld AG, Bonn

We have subjected the sections “Company profile and report contents”, as well as “Performance indicators” of the report segment “Sustainability in detail 2016” of SolarWorld AG, Bonn, to a review by an auditor. The segment covers the period from January 1, 2016 to December 31, 2016. The segment “Sustainability in detail 2016” was prepared in accordance with the criteria specified on page 177 of the segment (basic principles of the Global Reporting Initiative [GRI]).

The Management Board of SolarWorld AG is responsible for preparing the sections. Our task is to provide a certification for the sections “Company profile and report contents” and “Performance indicators” of the report segment “Sustainability in detail 2016” on the basis of our auditor review.

We conducted the auditor review of the sections “Company profile and report contents” and “Performance indicators”

of the report segment “Sustainability in detail 2016” in accordance with the generally accepted German standards for auditing sustainability reports established by the Institut der Wirtschaftsprüfer in Deutschland e.V. [Institute of Public Auditors in Germany, Incorporated Association] (IDW). According to these standards, the audit review must be planned and carried out in such a way that we can rule out with limited assurance, through critical appraisal of the facts, that the report sections materially differ from the underlying criteria. An auditor review is limited primarily to making inquiries of company personnel and analytical judgments and thus does not provide the certainty achievable through an audit of financial statements.

Based on our auditor review, no facts have come to our attention which would lead us to believe that the sections “Company profile and report contents” and “Performance indicators” of the report segment “Sustainability in detail 2016” were not prepared in all material respects in accordance with the underlying criteria.

Bonn, 23 March 2017

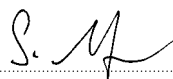
BDO AG

Wirtschaftsprüfungsgesellschaft



Lubitz

Wirtschaftsprüfer



Minafra

Wirtschaftsprüfer

ABBREVIATIONS SUSTAINABILITY

B

BS OHSAS – British Standard – Occupational Health and Safety Assessment Series
BOM – Bill of Materials
BOS – Balance of System C

C

C₂H₄ – Ethylen
CDP – Carbon Disclosure Project
CFC_{11eq} – Trichlorfluormethan equivalent
CH₃COOH – Acetic acid
CNF – Commission on Non-Financials
CO_{2eq} – Carbon dioxide equivalent
CML – Centrum voor Milieukunde at University Leiden

D

DIN – Deutsches Institut für Normung
DVFA – Deutsche Vereinigung für Finanzanalyse und Asset Management
DB_{eq} – Dichlorbenzene equivalent

E

EC – Economy
EFFAS – European Federation of Financial Analysts Societies
EN – Environment
EPIA – European Photovoltaic Industry Association
ESG – Environmental, Social, Governance
ERP – Enterprise Resource Planning

F

FTE – Full-time equivalent

G

GHG – Greenhouse Gas
GRI – Global Reporting Initiative

H

H₂SO₄ – Sulfuric acid
HCl – Hydrochloric acid
HF – Hydrogen fluoride
HNO₃ – Nitric acid
HR – Human Resources
HSE – Health, Safety and Environment

I

IDW – Institut der Wirtschaftsprüfer
IEA – International Energy Agency
IG BCE – Industriegewerkschaft Bergbau, Chemie, Energie a german trade union
ILO – International Labour Organization
ISAE – International Standards on Assurance Engagement
IPCC – Intergovernmental Panel on Climate Change
ISO – International Organization for Standardization

J

J – Joule

K

kJ – Kilojoule
KOH – potassium hydroxide
KPIs – Key Performance Indicators
KPNs – Key Performance Narratives
kWh – Kilowatt hours

L**LA** – Labor**LOHAS** – Lifestyles of Health and Sustainability**M****MJ** – Megajoule**MJ_{eq}** – Megajoule equivalent**MWh** – Megawatt hours**N****N₂O** – Nitrous oxide**NaOH** – sodium hydroxide**NF₃** – nitrogen trifluoride**NGOs** – Non-Governmental Organizations**NH₃** – ammonia**NO_x** – Nitrogen oxides**P****Pb** – Lead**PERC** – Passivated Emitter Rear Cell**POCl₃** – Phosphorous oxychloride**PR** – Product Responsibility**PO₄---eq** – Phosphate ion equivalent**Q****QHSE** – Quality, Health, Safety and Environment**QST** – Qatar Solar Technologies**R****R&D** – Research & Development**S****SAP ERP** – Enterprise Resource Planning of SAP**Sb_{eq}** – Antimony equivalent**SEIA** – Solar Energy Industries Association**SiH₄** – Silane**SO_{2eq}** – Sulphur dioxide equivalent**SO_x** – Sulphur oxides**SVTC** – Solar Valley Toxics Coalition**T****TCO_{2eq}** – Tons of carbon dioxide equivalent**TJ** – Terajoule**TPM** – Teamwork Production Management**W****WEEE** – Waste Electrical and Electronic Equipment**Wp** – Watt Peak

