

### 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

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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
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

<sup>\*</sup> Intangible assets and property, plant and equipment less accrued investment grants plus net current assets except for current net liquidity

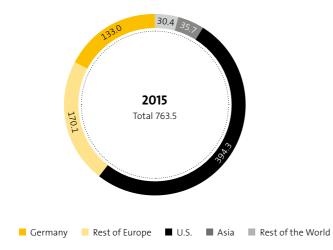
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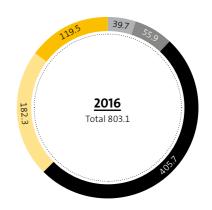
<sup>\*\*</sup>Financial liabilities less liquid funds

#### **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

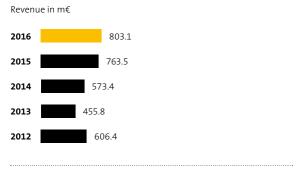
#### REVENUE BY REGION IN M €

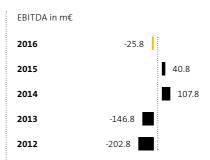


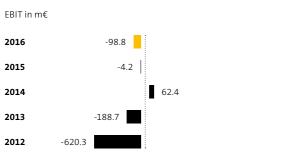


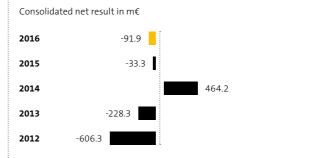
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#### **DEVELOPMENT OF KEY FIGURES IN FIVE-YEAR COMPARISON**

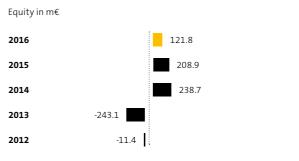


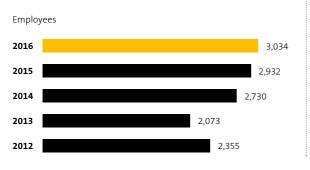


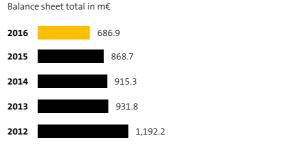












## **SUSTAINABILITY PERFORMANCE**

#### **ENVIRONMENTAL PROTECTION**

Name and description	2015	2016	2017
Energy: total energy consumption (in primary GJ)	4,427,860	4,666,263	$\uparrow$
Water: total water take-out (in m³)	1,981,634	2,028,001	<b></b>
Water: waste water discharge (in m³)	1,630,594	1,742,460	<b></b>
Emissions: total greenhouse gas emissions (in tCO <sub>2eq</sub> )	178,458	188,227	<b></b>
Waste: total production waste (in t)	30,703	32,119	$\leftarrow \rightarrow$
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%	$\longleftrightarrow$
Packaging: material (in t)	2,273	2,646	$\leftarrow \rightarrow$
Environmental violations: sanctions due to environmental violations	0	0	$\leftarrow \rightarrow$

#### **CUSTOMER AND PRODUCT RESPONSIBILITY**

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

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#### **EMPLOYEES**

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

#### **SUPPLY CHAIN**

Name and description	2015	2016	2017
Certification: ISO 9001 certification of suppliers (direct material)	98%	94%	$\uparrow$
Certification: ISO 14001 certification of suppliers (direct material)	75%	73%	<b></b>
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#### **COMPLIANCE AND SOCIETY**

Name and description	2015	2016	2017
<b>Effects of subsidies:</b> 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%	$\longleftrightarrow$
Governmental financial assistance: investment grants and research grants (in k€)	9,262	6,941	<b></b>
Donations to political parties (in k€)	0	0	$\leftarrow \rightarrow$
Other donations (in k€)	165	49	<b>\</b>
Regional development: Solar2World (delivered kWp)	113	129	$\leftarrow \rightarrow$
Share of business activity in regions with a corruption index (Transparency International) of less than 60	11%	20%	$\leftarrow \rightarrow$
Ascertained corruption incidents	0	0	$\leftarrow \rightarrow$

#### INNOVATION

Name and description	2015	2016	2017
Innovation: total R&D expenditures (in m€)	23	26	$\overline{}$
<b>Innovation:</b> Total investment in research on ESG relevant aspects. Our entire business (solar energy) is ESG relevant.	100%	100%	$\leftarrow \rightarrow$
Number of inventions filed in the last 12 months	77	55	$\leftarrow \rightarrow$

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# GROUP MANAGEMENT REPORT

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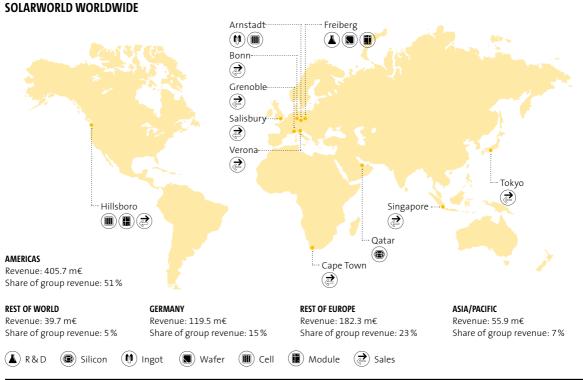
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# GENERAL INFORMATION ABOUT THE GROUP

#### **SOLARWORLD GROUP AT A GLANCE**



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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.

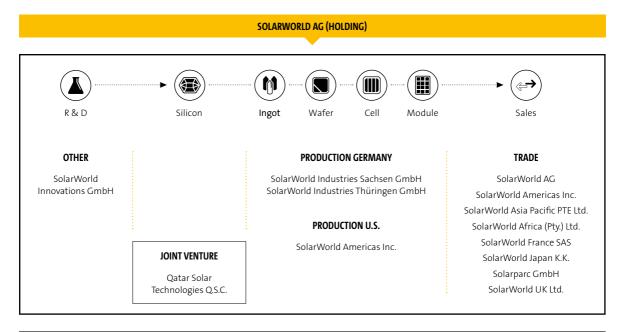
The "Production Germany" and "Production U.S." segments each comprise the regionally coherent and fully integrated production activities.

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



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#### **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.** Solar World 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. ightharpoonup 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 ► <u>Remuneration report – p. 094</u>. 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.

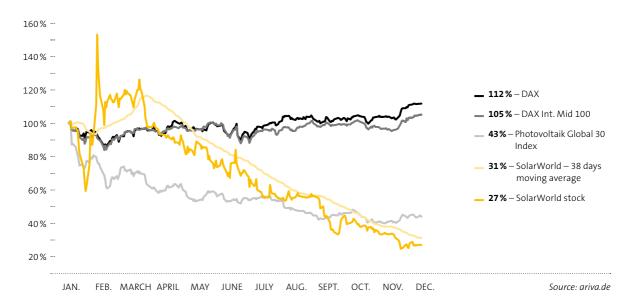
solar stocks dragged down by industry crisis. Solar stocks came under heavy pressure in 2016, first because of macroeconomic difficulties and later due to a resurgence of the global solar industry crisis. Continuous price declines over the course of the fiscal year were the result. The Photovoltaik Global 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  $\in$  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		
Market capitalization as at December 30, 2016*	€ 36,227,072	
Average Xetra trading volume 2016 58,681 shares		

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 $<sup>{}^*\</sup>mathit{Product}\ of\ number\ of\ shares\ and\ closing\ price$ 

#### CAPITAL STOCK AND SHAREHOLDER STRUCTURE

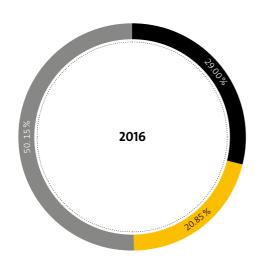
As at the cut-off date December 31, 2016, the capital stock remained unchanged at  $\in$  14,896,000.00 and was divided into 14,896,000 no-par-value bearer shares with an imputed nominal value of  $\in$  1.00. SolarWorld AG has issued exclusively common shares, so that each share entitles its holder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



- Qatar Solar S.P.C., Doha/Qatar
- Dr.-Ing. E. h. Frank Asbeck, Bonn/Germany (held directly or indirectly by controlled companies)
- Free float

#### **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, Solar-World 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 Feonomic 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.

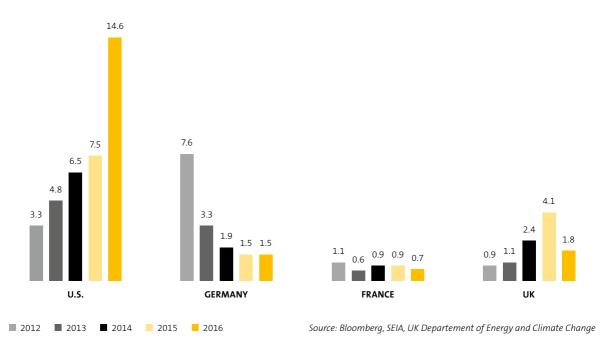
ASIAN MARKETS SEE STRONG EXPANSION IN FIRST HALF-YEAR. The Asian market was dominated by China and Japan once again. According to the Chinese energy agency, newly installed capacity in China increased by 81 percent to 34.5 (2015: 19.1) GW in 2016. However, more than 65 percent of these installations 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.





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.** Solar World 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.

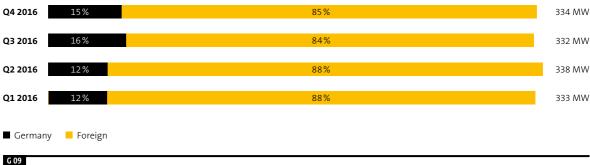
**U.S. LARGEST MARKET AGAIN.** As in previous years, the United States was SolarWorld's most important single market in 2016. We placed around half of our groupwide shipments here. In the 2016 reporting period, we achieved growth of 22 percent compared with the previous year. Our Commercial and Res-

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



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. Solar World 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 Solar-World. 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. ► <u>SolarWorld Magazine 2017 − p.016</u>

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.

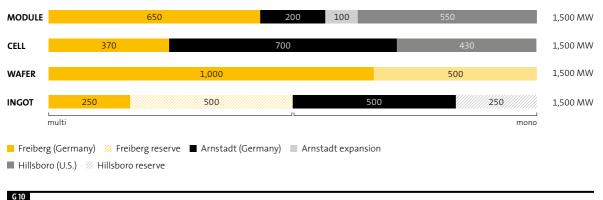
**DIAMOND WIRE USED IN WAFER PRODUCTION.** In the period under review, we began using diamond wire saws at our Freiberg site. It turned out that by employing this process the cost of sawing monocrystalline wafers can be considerably lowered. For this reason, we shall increase our capacities of diamond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



# 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 Solar World 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. ► <u>Development of inventions</u> 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
T 11					

<sup>\*</sup> 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

#### **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

# T 13

#### 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

T 14

[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 <sub>eq</sub> /Wp	9,93	7.45 -25 %	7.14 -28 %	
Groupwide CO <sub>2</sub> emissions	kgCO <sub>2eq</sub> /Wp	0.45	0.29 -35 %	0.31 -31 %	
Global warming potential (life cycle)	kgCO <sub>2eq</sub> /Wp	1.33	0.98 -25 %	0.71 -46 %	
Average $\mathrm{CO_2}$ emissions from passenger cars in the SolarWorld vehicle fleet (new passenger cars)²	gCO <sub>2eq</sub> /km	152 (all cars)	95 -38 %	127 -16 %	
Water			•••••••••••••••••••••••••••••••••••••••		
Specific water consumption	m³/MWp	2,253	1,802 -20 %	1,813 -20 %	
Specific volume of waste water	m³/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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<sup>1</sup> 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. <sup>2</sup> 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.

**CO<sub>2</sub>-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 CO<sub>2</sub> emissions. On a scale from A to F we reached a B.

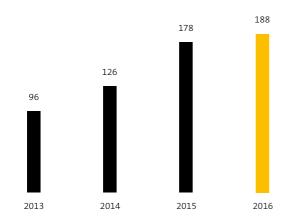
Due to the significant rise in production and shipments, our groupwide greenhouse gas emissions increased in 2016 to around 188 (2015: 178) thousand t CO<sub>260</sub>.

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  $\mathrm{CO}_{\mathrm{2eq}}/\mathrm{Wp}$ ). 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) kg $\mathrm{CO}_{\mathrm{2eq}}/\mathrm{Wp}$ . No emissions occur during the operation of solar modules.

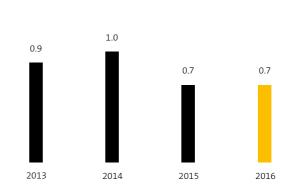
**PAYBACK TIMES.** The energy payback time is the amount of time it takes the solar power plant to produce as much energy as was used to manufacture it. Similarly, the  $\mathrm{CO}_2$  payback time refers to the time it takes to compensate for the greenhouse gases that were emitted during manufacturing. Our calculations follow the cradle-to-gate approach. SolarWorld's technological progress can be determined from the energy and  $\mathrm{CO}_2$  payback times.

G 11

# **GROUPWIDE CO<sub>2</sub>-EMISSIONS** IN THOUSAND tCO<sub>2eq</sub>



# GLOBAL WARMING POTENTIAL kg CO<sub>2eq</sub>/Wp



G 12

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, CO<sub>2</sub> 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 CO<sub>2</sub> intensive sources of energy than the German energy mix. That is why it takes nearly as long in San Fransisco 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

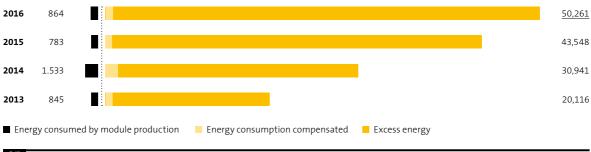
**POSITIVE ENERGY AND CO2 BALANCE.** Thanks to the volume of solar power modules sold in 2016, an energy surplus of 50,261 (2015: 43,548) GWh can be achieved during a lifetime of 30 years. Some 26.16 (2015: 22.66) million  $tCO_{2eq}$  can be saved as a result. The costs for environmental damage avoided total around  $\in$  2,093 (2015: 1,812) million. The  $CO_2$  emissions avoided exceed the  $CO_2$  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  $\in$  80 per ton of  $CO_2$  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.

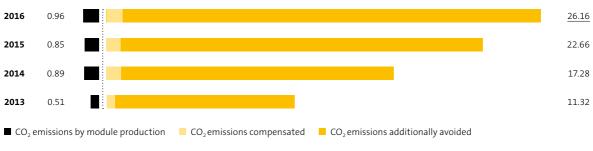
You can find further information under ► <u>Sustainability in</u> detail 2016 – p. 170

#### **ENERGY BALANCE IN GWh**



#### G 13

# **CARBON FOOTPRINT IN M tCO<sub>2ea</sub>**



G 14

# **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
T10			

**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, Solar-World 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.** Solar World 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 ightharpoonup <u>Sustainability in detail 2016 – p. 170</u>

# **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 milion
EBITDA	€ 41 million	Significant increase versus previous year	€ -26 million (adjusted¹: € -3 million)
EBIT	€ -4 million	positive EBIT in lower double-digit million range	€ -99 million (adjusted² : € -51 million)

<sup>1)</sup> 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

# **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 midyear, 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.

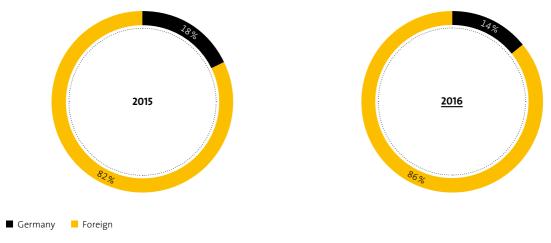
Shipments of modules and systems grew 20.5 percent to 1,336 (2015: 1,108) MW in 2016.  $\blacktriangleright$  <u>Trade - p.034</u> In the year under review, we used our wafers and cells mainly in our own production. Thus, external shipments of solar wafers and cells fell to 39 (2015: 51) MW, compared 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
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<sup>&</sup>lt;sup>2)</sup>One-off effects: impairments on property, plant and equipment in addition to the one-off effects mentioned above

#### SHIPMENTS DIVIDED INTO DOMESTIC AND FOREIGN SALES



G 15

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  $\[ \in \]$  -25.9 (2015: 40.8) million. It was affected among other things by write-downs on inventories amounting to  $\[ \in \]$  19.7 million as well as provisions for the implementation of focusing measures totaling  $\[ \in \]$  12.3 million. In counter to this, a write-up on property, plant and equipment of  $\[ \in \]$  8.8 million had a positive impact on EBITDA. Adjusted by these one-off effects, EBITDA amounted to  $\[ \in \]$  -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  $\in$  24.7 million on fixed assets and – running counter to this – write-ups of  $\in$  8.8 million and expenses from the amendment of accrued investment grants amounting to  $\in$  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  $\leqslant$  825.5 (2015: 791.8) million. Changes in inventory and cost of materials were negatively impacted by write-downs on inventories amounting to  $\leqslant$  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  $\leqslant$  57.5 million to  $\leqslant$  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  $\in$  13.9 million to  $\in$  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  $\in$  28.1 million to  $\in$  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  $\in$  24.7 million.

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

In total, other operating expenses decreased by  $\in$  10.2 million in 2016 to  $\in$  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  $\in$  4.1 million. Running counter to this, the recognition of  $\in$  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

			<del></del>		
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
T 19					

#### 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 performace)	98.7	74.8	69.2	65.6	69.9
Personnel expenses ratio (Personnel expenses/operating performace)	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  $\in$  87.1 million to  $\in$  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  $\in$  15.3 million to  $\in$  390.5 (December 31, 2015: 405.8) million. This development results primarily from repayments of  $\in$  35.6 million. Running counter to this, financial liabilities rose by  $\in$  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  $\in$  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.  $\blacktriangleright$  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  $\in$  4.8 million to  $\in$  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  $\in$  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  $\in$  6.4 million. In addition, 5.2 million went to the "Trade" segment and  $\in$  1.3 million to the "Other" segment.

#### LIQUIDITY ANALYSIS

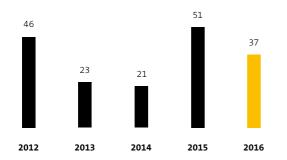
Cash flow from operating results fell by € 31.6 million to € -15.9 (2015: 15.7) million. Due to the significant increase of production volumes, inventories rose in comparison with the previous year. Liabilities from trade payables decreased at the end of the year due to reduced production in Q4. The 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.

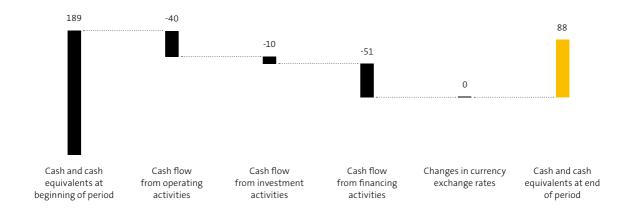
In the year under review, SolarWorld AG repaid loans amounting to € 35.6 (2015: 31.3) million and paid interest totaling € 14.8 (2015: 26.7) million. Thus, cash flow from financing activities was € -50.4 (2015: -57.6) million.

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

<sup>\*</sup> 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  $\in$  17.8 million to  $\in$  173.9 (December 31, 2015: 156.1) million as at the cut-off date December 31, 2016. Simultaneously, trade receivables went down by  $\in$  42.4 million to  $\in$  55.0 (December 31, 2015: 97.4) million. Taking lower trade payables into account, working capital rose by a total of  $\in$  1.9 million to  $\in$  177.7 (December 31, 2015: 175.8) million.

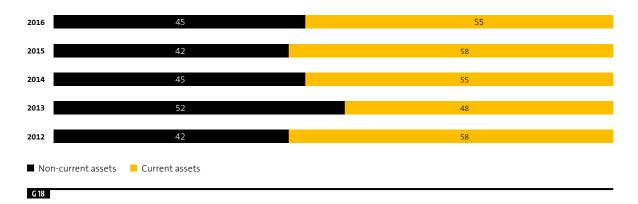
Other current financial assets fell by € 3.0 million to € 21.9 (December 31, 2015: 24.9) million. This resulted primarily from the derecognition of receivables in an amount of € 6.4 million, which corresponded to the derecognition of a bank loan. Furthermore, having received payments of € 2.2 million 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 %**



# **ASSET POSTION INDICATORS**

	, , ,	Dec. 31, 14	Dec. 31, 15	Dec. 31, 16
n.a.	n.a.	26.1	24.0	17.7
42.0	51.8	45.0	42.3	45.2
n.a.	n.a.	0.6	0.6	0.4
1.2	0.7	1.8	1.8	1.6
	42.0	42.0 51.8	42.0 51.8 45.0 n.a. n.a. 0.6	42.0 51.8 45.0 42.3 n.a. n.a. 0.6 0.6

# **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 ► <u>Note 39 Contingencies and events after balance sheet</u> 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

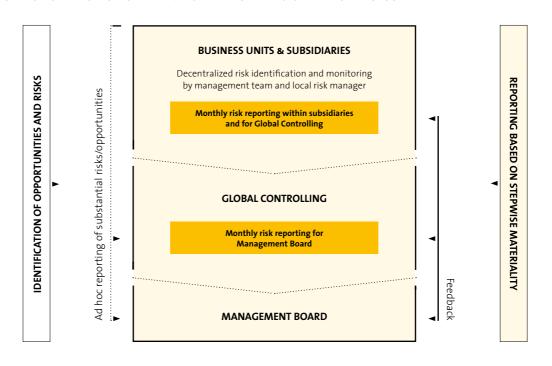
# 076 FORECAST REPORT

- 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			
<u></u>	Up versus previous year	Short-term	One to three years		
$\downarrow$	Down versus previous year	Medium-term	Three to five years		
<b>→</b>	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 levelized 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)* 

#### 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 →

#### Ricks

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)**

#### 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)

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#### 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)

#### HUMAN RESOURCES RISKS 个

#### Risk

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)



#### 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)

#### 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

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#### OTHER FINANCIAL RISKS →

#### Ricks

#### 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

#### 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)

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#### 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)

# 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**

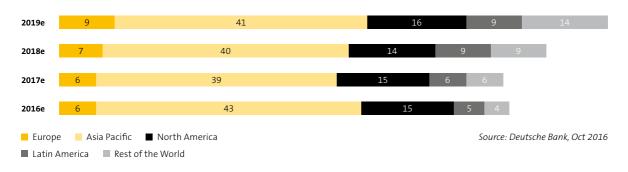
#### **THE FUTURE MARKET 2017**

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**



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**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**

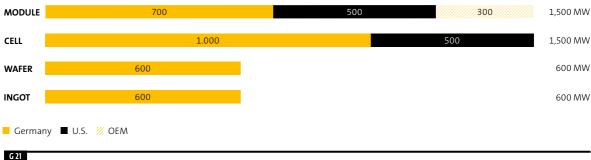
FOCUS ON MARGIN – STABILIZE SHIPMENTS. We expect that global demand for solar power products will increase slightly in 2017 and that the price level will remain low. We are preparing for this market trend by focusing on shipments of products with which we create value for customers and achieve better 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**



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#### 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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# **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 ► <a href="https://www.solarworld.de/declaration-of-compliance">www.solarworld.de/declaration-of-compliance</a>. 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.  $\blacktriangleright$  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, Solar World 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, Solar World 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 Beteiligungsgesellschaft 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 Foundation 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€	DrIng. E. CEO	h. Frank A	Asbeck		Frank He	nn			Philipp Ko	oecke					
	Start: 199	9			Start: 2004				Start: 200	)3					
	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	163.01	134.1 <sup>2</sup>	134.1	134.1	0	0	0	0	67.2³	60.0 <sup>4</sup>	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			

 $<sup>^1</sup>$  2015: Remuneration for Management Board membership in subsidiary Solarparc GmbH (162.71  $k \in$ )

<sup>&</sup>lt;sup>4</sup> 2016: Remuneration for Management Board membership in subsidiary Solarparc GmbH (60.0 k€)

in k€	Colette R CIBPO	ückert-He	nnen		Jürgen St CPO	ein			Managen	nent Board	l 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 <sup>1</sup>	60.0 <sup>2</sup>	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			

<sup>&</sup>lt;sup>1</sup> 2015: Remuneration for Management Board membership in subsidiary SolarWorld Innovations GmbH (46.0 k€).

and inventor remuneration for SolarWorld Innovations GmbH (0.3 k $\in$ ) <sup>2</sup> 2016: Remuneration for Management Board membership in subsidiary Solarparc GmbH (134.1 k $\in$ )

<sup>&</sup>lt;sup>3</sup> 2015: Remuneration for Management Board membership in subsidiary Solarparc GmbH (67.17 k€)

<sup>&</sup>lt;sup>2</sup> 2016: Remuneration for Management Board membership in subsidiary SolarWorld Innovations GmbH (60.0 k€)

MANACEMENT DOADD	) REMUNERATION II: ALLOCATIOI	NI.
MANAGEMENT DUAKD	, KEMIDINEKALIDIN II: ALLUCALIDI	v

in k€	DrIng. E. Frank Asb		Frank He	nn	Philipp Ko	oecke	Colette Rückert-H CIBPO	lennen	Jürgen St CPO	ein	Manager Board To		
	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	

#### 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  $k \in 40.0$  in addition to reimbursement for their expenditures in accordance with Section 670 German Civil Code (BGB). In accordance with Section 5.4.6 GCGC, 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  $k \in 120.0$ , and the deputy chairman receives double the fixed compensation, so  $k \in 80.0$ . Thus, membership or chairmanship in committees is also compensated. Ordinary members receive an additional  $k \in 5.0$  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 GCGC, 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 $\in$  650.5 (2015: k $\in$  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

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 definded benefit plans		
Profit/loss from remeasurement of definded benefit plans, before tax	-826	867
Deferred taxes on profit/loss from remeasurement of definded benefit plans	247	-260
Profit/loss from remeasurement of definded 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 compehensive result	3,452	-7,261
Total comprehensive result	-87,069	-29,791
Of which attributable to:		
- Shareholders of SolarWorld AG	-87,069	-29,791

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#### **CONSOLIDATED BALANCE SHEET AS AT DECEMBER 31, 2016**

Assets in k€		Notes	Dec 31, 16	Dec 31, 15	
Α.	Non-current assets		310,504	367,182	
l.	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	
В.	Current assets		367,460	500,157	
l.	Inventories	2.10, 23	185,693	171,563	
II.	Trade receivables	2.11, 24	55,032	97,402	
Ш.	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	
Eqi	iity and liabilities in k€	Notes	Dec 31, 16	Dec 31, 15	
Eq:	ity and liabilities in k€ Equity	Notes 30	Dec 31, 16	Dec 31, 15 208,877	
_	·		_		
Α.	Equity		121,808	208,877	
<b>A.</b>	Equity Subscribed capital		<b>121,808</b> 14,896	<b>208,877</b> 14,896	
<b>A.</b> 1.	Equity Subscribed capital Capital reserve		121,808 14,896 158	208,877 14,896 158 14,725	
<b>A.</b> 1. 2.	Equity Subscribed capital Capital reserve Other reserves Accumulated results		121,808 14,896 158 19,593	208,877 14,896 158 14,725	
<b>A.</b> 1. 2. 3.	Equity Subscribed capital Capital reserve Other reserves Accumulated results		121,808 14,896 158 19,593 87,161	208,877 14,896 158 14,725 179,098	
<b>A.</b> 1. 2. 3.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities	30	121,808 14,896 158 19,593 87,161 370,598	208,877 14,896 158 14,725 179,098 446,157	
1. 2. 3. 4. <b>B.</b> 1.	Equity Subscribed capital Capital reserve Other reserves Accumulated results Non-current liabilities Non-current financial liabilities	2.16, 2.17, 31, 40	121,808 14,896 158 19,593 87,161 370,598 321,974	208,877 14,896 158 14,725 179,098 446,157 348,627	
A. 1. 2. 3. 4. B. II.	Equity Subscribed capital Capital reserve Other reserves Accumulated results Non-current liabilities Non-current financial liabilities Accrued investment grants	2.16, 2.17, 31, 40 2.18, 32	121,808 14,896 158 19,593 87,161 370,598 321,974 19,866	208,877 14,896 158 14,725 179,098 446,157 348,627 23,921	
A. 1. 2. 3. 4. B. II. III.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33	121,808 14,896 158 19,593 87,161 370,598 321,974 19,866 28,267	208,877 14,896 158 14,725 179,098 446,157 348,627 23,921 23,524	
A. 1. 2. 3. 4. B. II. III.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34	121,808 14,896 158 19,593 87,161 370,598 321,974 19,866 28,267 19	208,877 14,896 158 14,725 179,098 446,157 348,627 23,921 23,524 18	
1. 2. 3. 4. B. II. III. V.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities  Deferred tax liabilities	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34	121,808 14,896 158 19,593 87,161 370,598 321,974 19,866 28,267 19 472	208,877  14,896  158  14,725  179,098  446,157  348,627  23,921  23,524  18  50,067	
1. 2. 3. 4. B. II. III. V.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities  Deferred tax liabilities  Current liabilities	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34 2.23, 12, 35	121,808 14,896 158 19,593 87,161 370,598 321,974 19,866 28,267 19 472 193,478	208,877 14,896 158 14,725 179,098 446,157 348,627 23,921 23,524 18 50,067 213,674	
A. 1. 2. 3. 4. B. II. IV. V. C.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities  Deferred tax liabilities  Current liabilities  Current financial liabilities	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34 2.23, 12, 35 2.16, 2.17, 31, 40	121,808  14,896  158  19,593  87,161  370,598  321,974  19,866  28,267  19  472  193,478  68,501	208,877  14,896  158  14,725  179,098  446,157  348,627  23,921  23,524  18  50,067  213,674  57,222	
A. 1. 2. 3. 4. B. II. IV. V. C. II.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities  Deferred tax liabilities  Current liabilities  Current financial liabilities  Trade payables	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34 2.23, 12, 35 2.16, 2.17, 31, 40 2.16, 40	121,808  14,896  158  19,593  87,161  370,598  321,974  19,866  28,267  19  472  193,478  68,501  51,202	208,877  14,896  158  14,725  179,098  446,157  348,627  23,921  23,524  18  50,067  213,674  57,222  77,771	
1. 2. 3. 4. B. II. IV. V. C. II. III.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current financial liabilities  Accrued investment grants  Non-current provisions  Other non-current liabilities  Deferred tax liabilities  Current liabilities  Current financial liabilities  Trade payables  Income tax liabilities	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34 2.23, 12, 35 2.16, 2.17, 31, 40 2.16, 40 2.23, 12, 36	121,808  14,896  158  19,593  87,161  370,598  321,974  19,866  28,267  19  472  193,478  68,501  51,202  2,346	208,877  14,896  158  14,725  179,098  446,157  348,627  23,921  23,524  18  50,067  213,674  57,222  77,771  1,398	
A. 1. 2. 3. 4. B. II. III. IV. V. C. II. III. III. III.	Equity  Subscribed capital  Capital reserve  Other reserves  Accumulated results  Non-current liabilities  Non-current provisions  Other non-current liabilities  Deferred tax liabilities  Current liabilities  Current financial liabilities  Trade payables  Income tax liabilities  Current provisions	2.16, 2.17, 31, 40 2.18, 32 2.19, 2.20, 33 2.21, 34 2.23, 12, 35 2.16, 2.17, 31, 40 2.16, 40 2.23, 12, 36 2.20, 33	121,808  14,896  158  19,593  87,161  370,598  321,974  19,866  28,267  19  472  193,478  68,501  51,202  2,346  18,252	208,877  14,896  158  14,725  179,098  446,157  348,627  23,921  23,524  18  50,067  213,674  57,222  77,771  1,398  6,831	

#### CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

			Other r	eserves		
in k€ – Notes 2.4, 30	Subscribed capital	Capital reserve	Currency translation reserve	IAS 19 reserve	Accumulated results	Total
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€ – N	lote 41	2016	<b>2015</b> -44,845	
	Result before tax	-133,317		
+	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 ( $k \in$ ) 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 finacial statements
IFRS 14 - Regulatory Deferral Accounts	finacial statements  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.  None. The amendments address issues that have arisen in the context of applying consolidation exception for investment entities.  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.  None. SolarWorld group is
Amendments to IFRS 10, IFRS 12 and IAS 28 - Investment Entities: Applying the consolidation exception	issues that have arisen in the context of applying consolidation
Amendment to IAS 27 - Equity Method in seperate financial statements	to IAS 27 concern an entity's separate financial statements, it does not have any impact on the Group's consolidated financial
Amendment to IAS 16 and IAS 41 - Agriculture: Bearer Plants	<b>None.</b> 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 the 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 liablities 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.:



	100%	<b>&gt;&gt;&gt;</b>	SolarWorld Industries Sachsen GmbH — Freiberg, Germany ::
			100% ►►► Go!Sun GmbH & Co. KG — Bonn, Germany
			100% ►►► Solarparc Ziegelscheune GmbH — Freiberg, Germany
-	100%	<b>&gt;&gt;&gt;</b>	${\bf SolarWorld\ Innovations\ GmbH}-{\bf Freiberg, Germany}$
	100%	<b>&gt;&gt;</b>	<b>SolarWorld Solicium GmbH</b> — Freiberg, Germany
-	100%	<b>&gt;&gt;</b>	$\textbf{SolarWorld Industries Th\"{u}ringen GmbH}- \textbf{Arnstadt}, \textbf{Germany}$
	100%	<b>&gt;&gt;&gt;</b>	SolarWorld Americas Inc. — Hillsboro, U.S.
			100% >>> SolarWorld Industries Deutschland GmbH — Bonn, Germany
			1% 99% ►►► SolarWorld Industries America LP — Camarillo, U.S.
			21.26%
			: 100% ►►► SolarWorld Industries Americas LLC — Camarillo, U.S.
-	100%	<b>&gt;&gt;&gt;</b>	SolarWorld Asia Pacific PTE Ltd. — Singapore, Singapore
-	100%		SolarWorld Japan K.K. — Tokyo, Japan
-	100%	<b>&gt;&gt;&gt;</b>	SolarWorld France SAS — Grenoble, France
-	100%	<b>&gt;&gt;&gt;</b>	SolarWorld UK Ltd. — Salisbury, UK
-	100%	<b>&gt;&gt;&gt;</b>	<b>SolarWorld Africa (Pty.) Ltd.</b> — Cape Town, South Africa
-	100%	<b>&gt;&gt;&gt;</b>	Solarparc GmbH — Bonn, Germany
			100% >>> Solarparc Projekt VI GmbH & Co. KG — Bonn, Germany
			100% Solarparc Projekt VII GmbH & Co. KG — Bonn, Germany
			100% Solarparc Projekt VIII GmbH & Co. KG — Bonn, Germany
			100% >>> Solarparc Donau I GmbH — Bonn, Germany
			100% >>> Solarparc Donau II GmbH — Bonn, Germany
			100% PPP Go!Sun Verwaltungs GmbH — Bonn, Germany
			100% >>> Solarparc Deutschland I GmbH — Bonn, Germany
			100% >>> Solarparc Diamant Verwaltungs GmbH — Bonn, Germany
			100% ►►► Solarparc Brillant GmbH — Bonn, Germany
-	100%	<b>&gt;&gt;&gt;</b>	Solarparc Rubin Verwaltungs GmbH — Bonn, Germany
-	100%	<b>&gt;&gt;&gt;</b>	SolarWorld Ibérica S.L. — Madrid, Spain
-	94.23%		SolarWorld AG & Solar Holding GmbH in GbR Auermühle — Bonn, Germany
i	29%	<b>&gt;&gt;&gt;</b>	<b>Qatar Solar Technologies Q.S.C.</b> — Doha, Qatar*

<sup>\*</sup> 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  $(\mathfrak{E})$ . Financial statements of the consolidated companies that are presented in foreign currencies are translated into Euro  $(\mathfrak{E})$  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 noncurrent 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-infirst-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
- derivates 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 (Pensionssicherungsverein). 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:

	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  $\in$  14,954k (prior year  $\in$  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  $\leqslant$  24.7 million (no impairment in prior year), whereas corresponding reversals of accrued investment grants amounted to  $\leqslant$  1.9 million.

Reversals of impairment losses of property, plant and equipment amounted to  $\in$  8.8 million (no impairment reversals in prior year), whereas corresponding increases of accrued investment grants amounted to  $\in$  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  $\leqslant$  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  $\leqslant$  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 mono-crystalline ingots at the Hillsboro (Oregon, USA) site and which is part of the "Production U.S." segment, an impairment loss of  $\ensuremath{\mathfrak{E}}$  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  $\ensuremath{\mathfrak{E}}$  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  $\in$  3,979k (prior year  $\in$  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 incomeafter 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 ta	ıx 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  $\[ \]$  1,945k).

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  $\in$  8.7 million; Production U.S.  $\in$ 

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€	Rev	enue	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 Jan 1, 16	Reclassifi- cations	Addition	Reclassifications to assets held for sale	Disposal	Currency difference	Changes in scope of consolidation	As at Dec 31, 16	
. Intangible assets									
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	
I. Property, plant and equipment							0		
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 an 1, 15	Reclassifi- cations	Addition	Reclassifications to assets held for sale	Disposal	Currency difference	Changes in scope of consolidation	As at Dec 31, 15
I. Intangible assets								
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

			Amorti	zation and deprecia	ntion				Carrying	amounts
As at Jan 1, 16	Reclassifi- cations	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

			Amor	tization and deprecia	ntion				Carrying	amounts
As at Jan 1, 15	Reclassifi- cations	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		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
Carying 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  $\leqslant$  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  $\le$  19,673k (prior year  $\le$  3,804k) were recognized as expenses. Other than in the prior year, no reversals of impairment losses (prior year  $\le$  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 contruction 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.

#### 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.

# 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.

If the discount rate would increase by 100 basis points, the provision for performance guarantees would decline by  $\in$  1.8 million. If the discount rate would decrease by 100 basis points, the provision for performance guarantees would rise by  $\in$  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  $\in$  3k (prior year interest expenses of  $\in$  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:

2016	
2016	2015
9,466	10,848
193	176
12	19
-571	-437
0	-270
782	-571
44	-299
9,926	9,466
	9,466 193 12 -571 0

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 assest (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 i	n 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  $\ensuremath{\in}$  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  $\in$  8,184k ( $\in$  9,833k). The corresponding data for the prior year was  $\in$  10,304k ( $\in$ 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  $\in$  295k ( $\in$  360k). The corresponding data for the prior year was  $\in$  1,123k k ( $\in$ 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  $\in$  88k (prior year  $\in$  189k). If the market interest rate level would decrease by 10 basis points, the negative effect on earnings before tax would amount to  $\in$  88k (prior year  $\in$  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	Measure	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	Measure	ement categories IA			
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 ca	itegories 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	

			Residual terms			
Total fair values	IFRS 7 not applicable	Total carrying amounts	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	
				Residual terms		
Total fair values	IFRS 7 not applicable	Total carrying amounts	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	
				Residual terms		
Total fair values	IFRS 7 not applicable	Total carrying amounts	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	
				Residual terms		
Total fair values	IFRS 7 not applicable	Total carrying amounts	up to 1 year	between  1 and 5 years	exceeding 5 years	
256.652						
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:

	Dec 31, 16			Dec 31, 15				
in k€	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  $\in$  3,281k (prior year  $\in$  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  $\in 1,715k$  (prior year  $\in 8,256k$ )

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 deconsolidationand 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  $\in$  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  $\in$  86 million (prior year  $\in$  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  $\le$  3.0 million (prior year  $\le$  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 sevices 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  $\in$  50.8 (prior year  $\in$  50.2) million including interest on balance sheet date. The respective interest expenses for the reporting period amounted to  $\in$  4.5 (prior year 3.4) million. According to a contractual commitment, interest in amount of  $\in$  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  $\in$  3.8 million. At reporting date, advances received in the amount of  $\in$  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  $\in$  61k (prior year  $\in$  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  $\in$  3.6 (prior year  $\in$  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  $\in$  4.3 (prior year  $\in$  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. FMPLOYEES

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  $\leqslant$  2,516k (prior year  $\leqslant$  2,719k), which includes variable remuneration of  $\leqslant$  496k (prior year  $\leqslant$  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 CmbH
- 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/entsprechenserklaerung).

Bonn, March 21, 2017

SolarWorld AG
The Management Board

Dr.-Ing. E. h. Frank Asbeck

Chief Executive Officer (CEO)

Dipl.-Wirtschaftsing. Frank Henn

Chief Sales Officer (CSO)

Dipl.-Kfm. tech. Philipp Koecke

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 Solar World 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

Dr.-Ing. E. h. Frank Asbeck

Chief Executive Officer (CEO)

Dipl.-Wirtschaftsing. Frank Henn

Chief Sales Officer (CSO)

Dipl.-Kfm. tech. Philipp Koecke

Chief Financial Officer (CFO)

**RAin Colette Rückert-Hennen** 

Chief Information, Brand & Personnel Officer (CIBPO) Dipl.-Ing. Jürgen Stein

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.

# **PUBLICATION DETAILS**

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#### **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

