

STRATEGY AND ACTION

The year 2009 has shown that we have found the right strategic answers to the changing market environment and that we have achieved the revenue target of € 1 billion we set ourselves.

The world markets for solar power products underwent an elementary structural change in the year under review. While the solar industry had previously been production-driven in order to overcome bottlenecks and to service the increasing demand, the market now turned from a sellers' to a buyers' market. The worldwide capacities rose by around 50 per cent while demand lagged behind. The result was a strong decline in prices. If manufacturers did not want to base their sales on price only at the expense of margins⁹ and quality, cost reductions and productivity increases also had to be achieved. In addition, competition had to be met head on strategically with factors such as design, product warranties and quality, service and closeness to the customer. → *The solar power market* • p. 073//

It is particularly in this turbulent market environment that our strategy has proved to be the correct one.

SOLARWORLD CORPORATE STRATEGY 2009/2010+

In line with our “BUILD A SOLARWORLD” vision, our strategy is based on the manufacture of products for decentralized power supply. The future belongs to the use of solar power technology on people's own roofs as this is feasible on an almost unlimited, worldwide basis. That is why our products are not complicated niche products but are instead geared to universal application in a large, worldwide market. They can be enhanced in their functionality and are therefore also easy to integrate into a decentralized combination of other supply units. This is SOLARWORLD's way to an independent, reliable and environmentally friendly energy supply.

Quality leader with a strong brand – this is the strategic course we already successfully adopted ten years ago. Our motto is to produce the products that we offer as a fully integrated solar technology group along the entire solar value chain. With respect to suppliers, we bank on quality and environmental standards that are in line with our group specifications.

Through consistent quality assurance from the wafer to the solar system, this is the way we offer our customers on all continents uniform quality and the brand promise: “Made by SOLARWORLD”. And that provides us with the necessary business flexibility to respond promptly and in a way that improves profit-



ability to any changes in market parameters. Take 2009 as an example: The increased global supply of wafers and a simultaneous decline in prices caused us to invest even more intensively in the group's own value creation. With enhanced module capacities in the solar core markets of Europe, North America, and Asia, we will again strengthen our engagement in the retail market from 2010 onwards and expand our global market position.

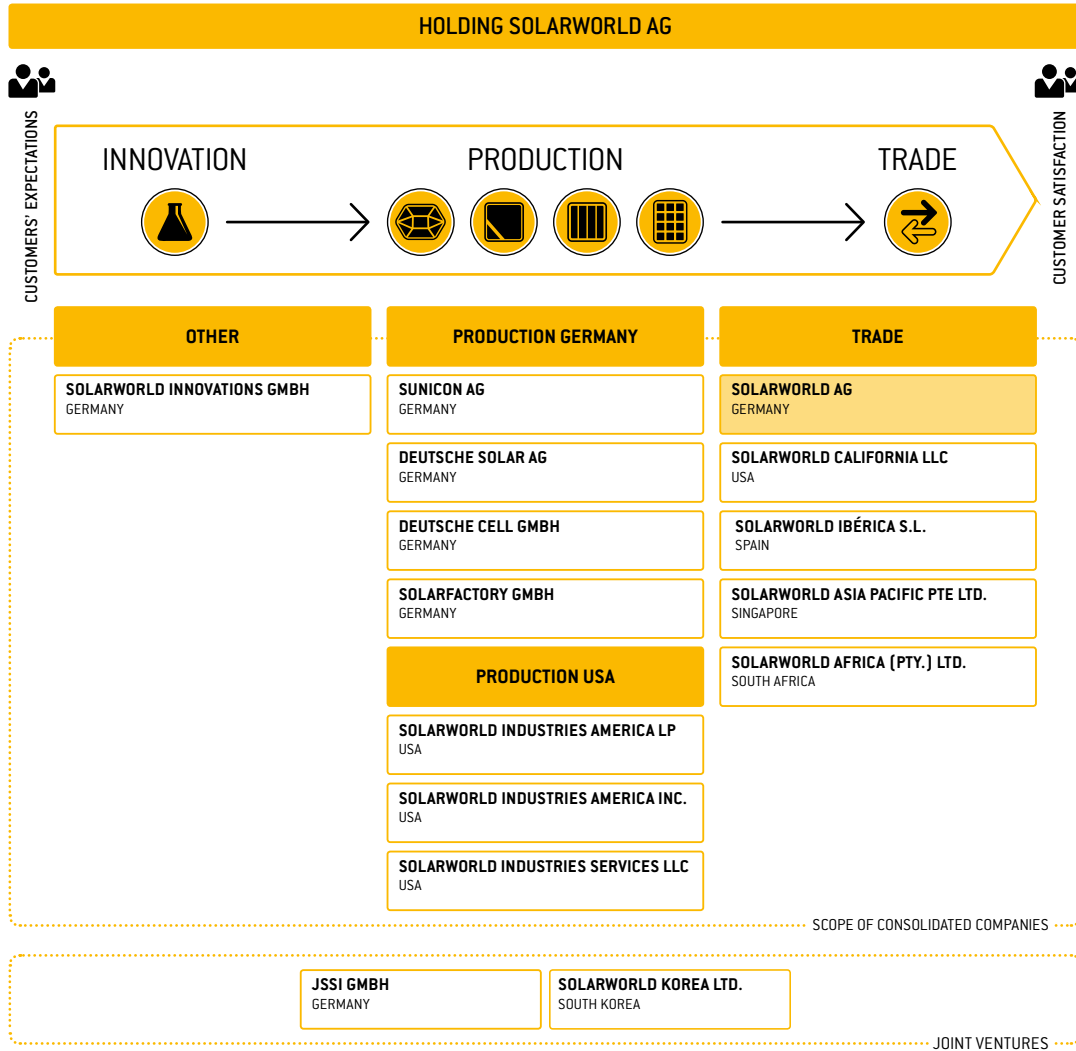
CORPORATE STRUCTURE 2010+. SOLARWORLD is among the largest solar groups worldwide and operates sites in the most important economic regions. Of strategic relevance to our investment decisions at the production sites are infrastructure factors that guarantee the high demands placed on process and product quality as well as with respect to environmental and social standards. The group's own production sites are therefore located in Freiberg, Germany, as well as in Hillsboro and Camarillo, USA. Here, we create employment at scientific and economic locations and thus cut our complexity costs. With the objective of strategically securing our logistic proximity to the important future market of Asia, we additionally expanded our global production network by adding another module production facility in the form of a joint venture⁹. Through the cooperation with our South Korean partner, we benefit from that company's cultural, regional and technical know-how in the complex Asian market. The sales offices of SOLARWORLD AG are located in the major solar growth regions. ➔ [Worldwide locations of the group](#) • p. 050 // 🌐 [World Map](#) //

The representation of our strategic management view is also reflected in the adjustment of the segmental structure of the group in the 2009 reporting period, during which regionally connected and fully integrated⁹ production and functional areas were pooled. 📄 [Segment structure and stages of the value chain](#) • p. 035 // ➔ [Segmental structure adjusted](#) • p. 049 //

CORPORATE TECHNOLOGY 2010+. Our group-wide and integrated production concept – applying across the value chain and across locations as it does – is based on the most advanced technology. Our objectives: to tap synergy and efficiency potentials throughout the group and to uniformly secure cost, quality, and environmentally relevant competitive advantages worldwide for the “solar module” as the end product. Research and development successes are being brought to bear from the raw material through to the system. For example, in 2009 an increase in cell efficiency and reduction of the wafer thickness helped to cut silicon consumption per watt peak.

Our internal minimum target for 2009 was to compensate for the reduction pursuant to the German Renewable Energy Sources Act (EEG)⁹ on an annual average by way of technical progress in the internal cost structure. We attained this target in the year under review. With the additional reduction step as at July 1st, 2010, the necessary progress in photovoltaic⁹ efficiency is to be accelerated at the will of the legislator. ➔ [EEG amended](#) • p. 136 // The resulting feed-in tariff reduction cannot be compensated for immediately to that extent by cost reductions in 2010. Nevertheless, SOLARWORLD will redouble its efforts to cut costs. Processes and technologies relating to the expansion steps completed in 2009 and planned for 2010, which have meanwhile once again been improved, will favor SOLARWORLD's technical progress and will again clearly improve cost structures. The factor of size will lead to economies of scale and cost effects via numbers of units and shipments that will provide a competitive edge.

07 SEGMENT STRUCTURE AND STAGES OF THE VALUE CHAIN



In this way we will shoulder the pressure of additional cuts of feed-in tariffs in the lead market of Germany. On balance we will offer our customers a sophisticated supply of standardized solar power products of the SOLARWORLD brand.

CORPORATE BRAND 2010+. Our brand is one of our most important corporate assets. It enables us to obtain a competitive price for our quality products and to grow in a sustainable fashion. In contrast to established industries, the young solar industry continues to be subject to higher technological, economic and political risks. With an increasing supply, customers tend to look towards quality parameters like yields, stability and longevity. In the capital market, investors also “demand” additional security in order to compensate for the risks. A strong brand not only communicates appropriate product properties to the customer, it also reduces the risk involved in purchasing a solar power plant that constitutes an investment of more than 25 years.

The quality promise that we support with our “Corporate Technology” is additionally backed up by our strong sales function. The SOLARWORLD sales motto is: To be close to, and grow with the customer. However, we will still have to continue to invest in logistics processes in 2010 in order to be able to handle the increased volumes, and especially to cope with the temporary demand peaks caused by funding deadlines in the interest of our customers. Through investments in our brand communication, we will carry this comprehensive quality promise to potential customers and thus secure our worldwide market shares.

STRATEGIC FINANCING 2009/2010+

We will only be able to continue to reach our objective of expanding the SOLARWORLD market position worldwide successfully and, in so doing, push ahead the use of solar energy, if we manage to continuously make our business activities more efficient and secure our financial requirements through healthy business development. That is why we strive to cover the constant capital needs required for our rapid growth rate largely from our ongoing operations. Our “Corporate Technology” will strengthen our productivity and secure quality – our brand strategy “Corporate Brand” will generate reliable revenues by means of competitive prices.

The financing of the group is handled centrally through SOLARWORLD AG. In order to guarantee favorable financing of the group’s growth, the financing structure of the Holding is strengthened through profit and loss transfer agreements with the German wholly owned subsidiaries. In this way, the profits and losses of the subsidiaries go directly to SOLARWORLD AG. This also includes the control of liquidity and raising loans for the financing of corporate expansion. Also, our shareholder-oriented dividend policy that results from the stock corporation’s profit is placed on a group-wide foundation by this means.

The goal of our financing policy is to have an appropriate liquidity reserve at all times in order to provide the group with the necessary financial flexibility for any required growth steps, to limit financial policy risks, and also to optimize capital costs by way of an adequate capital structure. In addition to the financial requirements that we cover from the operating cash flow, we also make use of different financing instruments depending on the market situation – thus in 2010 we also used the bond market. In this context SOLARWORLD AG benefits from the strong position on the capital market that it has enjoyed since its IPO.



This stable capital structure permits us to grow under our own steam, constantly and with a sense of proportion. → [Scheduled financing measures](#) • p. 146// From today's viewpoint, we are striving for a sound equity ratio⁹ in the region of 40 per cent. Even at a time of rapid economic change SOLARWORLD is capable of securing short and medium term investment projects through its careful financing.

MAJOR BUSINESS EVENTS IN 2009

- **MARKET POSITION MAINTAINED.** Worldwide we upped our 2009 market share to five (previous year: four) per cent. At the same time we succeeded in reaching our revenue target in spite of the industry-wide drop in prices. Constant cost cutting measures along the individual production stages as well as the procurement situation for major raw materials that was optimized in 2009 have admittedly contributed to a sound result, but were not able to compensate completely for the market-induced price declines. → [Earnings situation](#) • p. 097//
- **STRATEGIC FOCUS ON BRAND CAMPAIGN.** Pursuant to our strategy, we increased investments in our brand awareness almost fivefold – to about € 10 million. → [Brand investments stepped up – demand effects for our group and our customers](#) • p. 086//
- **PRODUCTION CAPACITY FULLY UTILIZED.** While many competitors were forced to cut their production and introduce short-time work we increased production to meet the strong demand for SOLARWORLD products at capacity limit. → [Effects of general conditions on development in 2009](#) • p. 079//
- **INTERNATIONAL PRODUCTION NETWORK EXTENDED.** In line with the market development we placed the investment emphasis in 2009 on the retail business and decided to rapidly expand the group's module production. In this way we will increase capacities from the current 500 MW to 1,250 MW by the end of 2011. The investments, the financing and the infrastructure expansion were initiated in 2009. At the German location of Freiberg we upped our wafer production as planned from 250 MW to 750 MW. → [Facts: Worldwide production capacities](#) • p. 079//
- **GROWTH FINANCIALLY SECURED.** In order to be able to implement our investment plans, we raised a syndicated credit (€ 200 million) in 2009 and prepared to issue a Eurobond (€ 400 million). We placed this bond successfully on the capital market in January 2010 and as a result, we secured the financial flexibility for further growth right at the beginning of the year. → [Scheduled investments](#) • p. 146//
- **INFRASTRUCTURE CREATED TO PROMOTE OUR INNOVATIVE STRENGTH.** We strengthened the infrastructure of our international research campus in 2009. The cell and module lab was almost completed and began its development work in the first quarter of 2010. As a result, we consider that our innovative strength has been increased significantly. → [SolarWorld Innovations – Group development “from lab to fab”](#) • p. 091//



08 TARGET ACHIEVEMENT 2009 AND TARGETS 2010+

	TARGETS 2009+	ACTUAL 2009	TARGETS 2010+
FINANCE	<ul style="list-style-type: none"> • Revenue target: Above previous year's level at € 1 billion as the next stage (Premise: Stabilizing macroeconomic development) • Profit or loss result: Depending on which price reduction must and can be compensated for on the cost side • Shareholder participation in corporate success 	<ul style="list-style-type: none"> ☑ Revenue: € 1.01 billion (previous year: € 0.9bn) ☑ EBIT⁹: € 151.8 million (previous year: € 263.3m) // Market-induced price reductions caused increased pressure on margins in 2009. ☑ Dividend⁹: € 0.16/Share (dividend proposal to Annual General Meeting 2010) 	<ul style="list-style-type: none"> • Revenue target: Sustainable exceeding of the previous year's revenue level of € 1 billion (premise: further recovery of the overall economic development combined with growth of the solar market, which will be materially influenced by the pending legal framework on the core market Germany). • Profit or loss target: Depending on the level of price depression on the cost side that has to – and can be – absorbed. • Participation of our shareholders in the success of the company
CUSTOMERS	<ul style="list-style-type: none"> • Further development of the SOLARWORLD brand • Renewed increase in customer satisfaction • Expansion of international sales also on new markets and in business fields with emphasis on the US market and rural electrification • Foreign quota: Stabilization at previous year's level 	<ul style="list-style-type: none"> ☑ Brand awareness in Germany increased: <ul style="list-style-type: none"> • Unaided: 2009: 5.8 per cent; 2009/2010: 7.1 per cent • Aided: 2009: 17 per cent; 2009/2010: 24.9 per cent <i>Source: EuPD Research/Brandmonitor</i> • In 2009 the following factors were identified for the first time in our annual customer survey: <ul style="list-style-type: none"> • Satisfaction with service: 87.6 per cent "very good" and "good" • Satisfaction with product quality: 99.8 per cent "very good" or "good" • Satisfaction with SOLARWORLD in general: 85.4 per cent "very satisfied" or "satisfied" ☑ Market-induced priority Germany, expansion of German sales team: + 62 per cent • Below previous year at 29 (previous year: 54) per cent. Reason: Market-induced, doubled demand in Germany with slight stagnation on international markets 	<ul style="list-style-type: none"> • Further development of the SOLARWORLD brand • Renewed increase in customer satisfaction • Expansion of international sales also on new markets and in business fields with emphasis on the US market and rural electrification • Foreign quota: Above previous year's level

	TARGETS 2009+	ACTUAL 2009	TARGETS 2010+
PROCESSES	<ul style="list-style-type: none"> • Minimum target: Compensating for EEG reduction on annual average by way of internal cost reductions (in €/Wp) • ISO 14001 certification⁹ of US production locations (earliest 2010) • Capacity expansion to meet rising world demand: <ul style="list-style-type: none"> • Wafers: 1,000 MW year-end capacity • Cells: 450 MW year-end capacity • Modules: 450 MW year-end capacity 	<ul style="list-style-type: none"> ☑ Production costs cut through technical progress and economies of scale⁹ in line with EEG reduction as at 1 January 2009. ☑ on schedule • Market-induced adjustment of targets during the year (rise in module demand) from planned wafer expansion towards expansion of production capacities for modules: <ul style="list-style-type: none"> • Wafers: 900 MW • Cells: 450 MW • Modules: 500 MW 	<ul style="list-style-type: none"> • Minimum target: Compensating for EEG reduction as at 1 January 2010 (9 per cent roof systems; 11 per cent free field systems) via internal cost reduction (in €/Wp) // further 16 per cent planned as at 1 July 2010 not immediately and completely feasible on the cost side in 2010 • ISO 14001 certification of all remaining locations including South Korea • ISO 9001 certification in South Korea • Capacity expansion 2010/2011 to meet rising world demand: <ul style="list-style-type: none"> • Wafers: 1,250 MW • Cells: 750 MW • Modules: 1,250 MW
EMPLOYEES	<ul style="list-style-type: none"> • Gain and retain qualified skilled and management staff : <ul style="list-style-type: none"> • Employment increase by around 25 per cent • Strengthening employer attractiveness by Employer Branding • Group-wide executive and talent development • Completion of code of ethics and code of conduct and communication to employees 	<ul style="list-style-type: none"> • 175 new jobs created/ + ten per cent, growth was secured by headcount, parallel investment in process optimization ☑ Germany: Study “Great Place to Work” 2009 – 55th (previous year: 57th) place/ Graduate barometer 15th place ☑ Group-wide executive and talent development • Postponed to 2010/Internal coordination process not yet completed 	<ul style="list-style-type: none"> • Employment expansion by about 10 per cent • Continuation • Emphasis on group-wide executive development • After approval by the works council the codes will be officially introduced and communicated and included in in-company training and further education
SOCIETY	<ul style="list-style-type: none"> • Taking into account the interests of stakeholder⁹ groups: Voluntary disclosure of sustainability reporting in accordance with GRI, Carbon Disclosure Project⁹ • Work on further ISO certifications⁹ (US sites) • Continuation: <ul style="list-style-type: none"> • Implement awareness-building measures regarding climate and resources protection • Promote research: Expand cooperation with universities and scientific institutes • Contribute to regional development via Solar2World projects (not-for-profit) 	<ul style="list-style-type: none"> ☑ Plus signature of Global Compact⁹ ☑ Achieved ☑ Information via inserts, target group mailings, school projects, cultural sponsoring for protection of species, etc. ☑ Research cooperations 2009: 25 (previous year: 21) ☑ Project scope: 114 (previous year: 53) kWp 	<ul style="list-style-type: none"> • Taking into account the interests of stakeholder⁹ groups: voluntary disclosure of sustainability reporting in accordance with GRI, Carbon Disclosure Project as well as Global Compact • ISO certifications (remaining sites, including South Korea) • Continuation: <ul style="list-style-type: none"> • Implement awareness-building measures regarding climate and resources protection • Promote research: Expand cooperation with universities and scientific institutes • Contribute to regional development via Solar2World projects (not-for-profit)

☑ = Target achievement 100 per cent

CORPORATE MANAGEMENT AND CONTROL

SUSTAINABLE MANAGEMENT AND CONTROL

REGULARLY VERIFY STRATEGIC TARGETS. The Internal Control System (ICS) of SOLARWORLD includes organizational safety measures (carried out through the management systems mentioned below), control (by the departments, group-wide through Controlling) as well as examination (internal audit).

The group strategy, which is directly derived from our [➔ Vision • p. 002//](#), as well as the resulting group targets are determined by the SOLARWORLD Management Board. The verification, control and further development of these strategic targets are implemented in the course of the year in regular strategy meetings attended by the Management Board as well as the Managing Directors and Board Members of the subsidiaries. The divisional targets are derived from the decisions of the management bodies.

Steering and control take place via Group Controlling, which coordinates the alignment and activities of all divisions in the SOLARWORLD Group and reports them to the Management Board. The success factor of corporate transparency takes on strategic importance in view of the growing challenges faced by a group operating in the international market.

The operating units of the SOLARWORLD Group that are defined for control purposes coincide with the reportable operating segments of “Production Germany”, “Production USA”, “Trade” and “Other”.

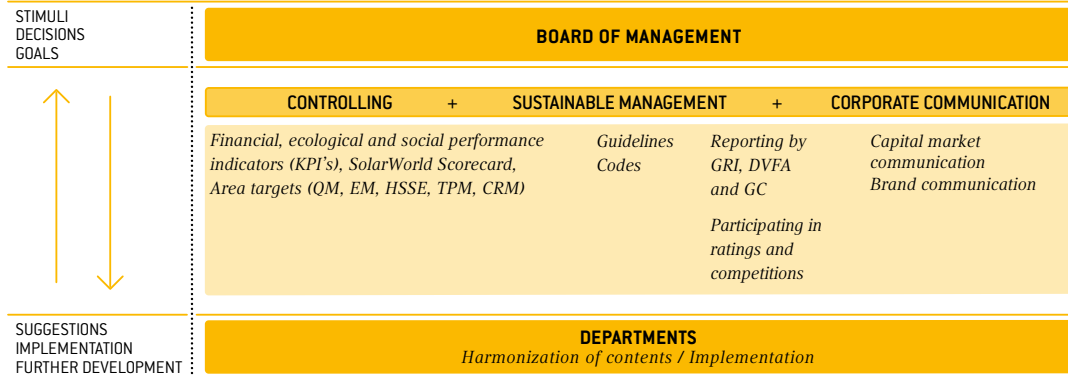
[➔ Segment structure adjusted • p. 049//](#)

The target/actual check and reporting of the primary group indicators such as revenue and EBIT [Ⓜ Selected corporate indicators • Cover//](#) to the Management Board within the time stipulated ensure that developments are identified early, appropriate measures are initiated, and targets are adjusted to the changing market and company developments. The control indicator “Revenue” initially reflects sales and price development while EBIT⁹ indicates the development of profitability. In 2009 the control process was determined by these indicators in the sense that price and marketing measures constituted the strategic response to market and sales developments. We achieved stabilization of EBIT by way of economies of scale and volume effects as well as through constant improvement of cost structures in terms of production, trade and procurement. While revenue is the most important indicator in the “Trade” segment, production output is the most important control variable in the “Production” segment.

INCLUDING ECOLOGICAL AND SOCIAL ASPECTS. In the year under review the indicator-based control instrument, the SOLARWORLD Scorecard, was further developed and the combining of data from the various group divisions was pushed ahead. The SOLARWORLD Scorecard belongs to the category of Sustainability Balanced Scorecards (SBSC)⁹; this type of scorecard includes not only economic objectives (such as the financial control indicators of revenues, EBIT) but also ecological and social aspects (such as the non-financial control indicators of customer satisfaction, employee identification, CO_{2eq}, etc.). We decided in favor of



09 ORGANIZATIONAL INTEGRATION OF SUSTAINABILITY MANAGEMENT IN THE SOLARWORLD GROUP 2009+



GRI, DVFA, GC • cf. Glossary page 261 // QM, UM, HSSE, TPM, CRM • cf. Acronym index page 268 //

Status: 2009

this approach because sustainability⁹ is an integral component of the SOLARWORLD group strategy. To this end, group-wide top level objectives, performance drivers⁹, measures and indicators were defined in close coordination with the functional departments.

The framework for our sustainable group control is provided by the SOLARWORLD values as well as by our guidelines. [\[1\] www.solarworld.de/sustainability/](http://www.solarworld.de/sustainability/) They are designed to provide all employees of the SOLARWORLD Group with guidance. The group-wide Code of Conduct, which still was subject to internal examination by the works council at the end of 2009, shall additionally provide actual behavioral recommendations after 2010.

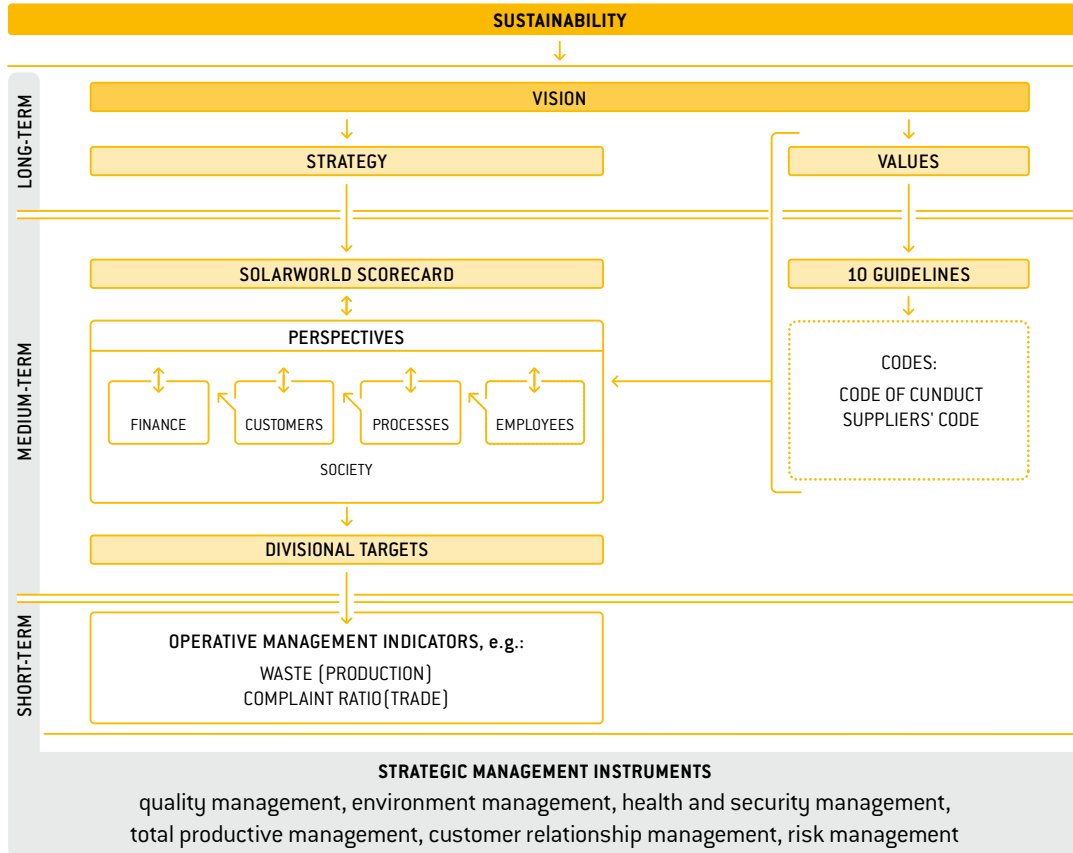
The SOLARWORLD Scorecard contains five perspectives that build directly upon one another: Finance, Customers, Processes, Employees and Society. The cascade-type interlinking of these perspectives guarantees that the causal effects of the individual factors on long-term success will be taken into consideration. In the transition between the perspectives, it is shown how the identified strategic targets and performance drivers of the respective top-level perspectives can be attained. Thus, in the future after the complete implementation of the SOLARWORLD Scorecard we will include all the factors mentioned in our economic corporate management by way of cause-and-effect chains.

Core indicators cannot always be unmistakably assigned to a particular segment. There are cross-segment aspects such as employee satisfaction, financial performance, resources consumption and social commitment. On the other hand, many indicators such as the satisfaction of module and systems customers can be clearly assigned to a particular segment ("Trade").



⑩ SUSTAINABLE CORPORATE MANAGEMENT

As of 2009



The SOLARWORLD Scorecard brings together indicators of the various management instruments. This makes possible a target/actual comparison of financial and non-financial control indicators. In some parts we already managed the company in 2009 according to the goals and indicators of the Scorecard.

⑩ Target achievement 2009 and targets 2010+ • p. 038 //

EARLY OPERATING INDICATORS – METRICS WITH AN EARLY WARNING CHARACTER. The definition of early indicators depends on the timeframe of the top-level objective under consideration. If we have long-term corporate success in mind, the performance drivers⁹ of the SOLARWORLD Scorecard are our early indicators. In general, internally we speak of early indicators in the case of parameters that are promptly and regularly recorded in the context of the following management systems, and which therefore form the basis for the short-term social policy decisions concerning the control of future developments. There is a large range

of these. In the following, we present examples of selected early indicators for the segments, “Production Germany”, “Production USA” and “Trade”.

“Production Germany” and “Production USA” segments:

- In production we continuously record the average output of production (MW/day) and use this as an early indicator for productivity.
- The reject rate must be viewed in direct connection with the previously mentioned indicator. It is also checked continuously in order to enable immediate action if deviating values are observed.

“Trade” segment:

- Product quality benchmarks are early indicators of our competitiveness, i.e. comparative tests, also together with customers. Thus, tests are conducted in an FMEA (Fault Possibility and Influence Analysis) mode with pilot customers and measures are being tested in practice.
 - As a medium-term early indicator for our quality claim as well as for the quality of our logistics, we use the rate of customer complaints. As a result of the continuous recording of these data we can correct any deviations and take appropriate counter-measures. Thus, the rate of customer complaints increased slightly in 2009 compared to the previous year. External demand peaks in the fourth quarter led to short-term bottlenecks both in logistics processes and in the availability of some components: We immediately initiated an analysis in the quality assurance area.
 - Early indicators concerning customer satisfaction that are measured annually among wholesalers and specialist partners are explicit customer statements and implicit moods that are reflected after talks and/or special events (meetings, discussion rounds).
 - Early indicators for market trends are also generated on the one hand by personal contacts with specialist partners – for example on the occasion of the annual training of partners – or on the other hand by systematic surveys (interviews). These refer, for example, to product lifecycles or new product versions such as the black module.
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INTERLINKING OF MANAGEMENT TOOLS

Total Productive Management (TPM)⁹ – SOLARWORLD Scorecard: perspectives processes and customers – increases process effectiveness by identifying “best practice” examples (e.g. set-up workshops) and translating them into group-wide process standards. TPM covers not only Production but also Technical Service, Logistics and the IT Department. The objective is to make the working areas leaner and to avoid losses. In the process, internal target values serve as guide figures for cost reduction and efficiency improvement. This continuous improvement forms the very basis for further innovations. One of the target indicators is the identification of “Overall Equipment Efficiency”, which is the product of (machine) availability, performance/efficiency and quality. At the Freiberg location the TPM Cup has been awarded since 2009. It backs up our ideas and innovation management at the site. → [*Managing ideas with the company suggestion system* • p. 109](#)// In the course of our growth in the USA we also intensified our local TPM. The 2009 results confirm that TPM leads to cost reductions. In the year under review, for example, we succeeded in saving a double digit million euro amount through specific TPM projects.

Customer Relationship Management (CRM)⁹ – SOLARWORLD Scorecard: perspective customers – is designed to guarantee the best possible service for our customers. To this end we have to respond to customer needs specifically. For example, in 2009, SOLARWORLD introduced the black module in its product range at the request of customers because, for certain customer groups, visual appeal plays a crucial role. © [*Innovation targets and priorities 2009* • p. 092](#)//

Quality Management (QM)⁹ – SOLARWORLD Scorecard: perspectives customers and processes – ensures the quality of our processes and products by way of defined standards. We define quality on the basis of the demands of our customers. The top-level control variable is the degree of customer satisfaction. In addition, we also permanently check the product quality of our external suppliers within the context of our quality management system. By way of regular audit and evaluation procedures we guarantee the stable and high quality of the products and merchandise of our suppliers. → [*Critical selection of suppliers pays off – supplier capital* • p. 080](#)// Almost all SOLARWORLD sites worked according to quality standard ISO 9001 in the year under review. At our US production site Hillsboro we are striving for certification in the first half of the year 2010.

Environmental Management (EM)⁹ – SOLARWORLD Scorecard: perspectives processes and society – continuously improves our resources utilization. Environmental policy is therefore an integral part of our quality policy. With our integrated quality and environmental management we counteract the risks in the process chain and guarantee group-wide quality, process, and environmental standards with according gains in efficiency. Target agreements and measures derived from these are stipulated annually. In this process we set ourselves internal reduction targets for energy consumption as well as for waste, waste water and CO_{2eq} emissions⁹ in order to increase our eco-efficiency. Our targets exceed the legal requirements. Since the target values serve internal control purposes, they are not disclosed, but the performance achieved is reported annually.

This is how we again identified our annual CO₂ balance in 2009: According to provisional estimates the greenhouse gas emissions (GHG)⁹ in 2009 increased in line with production growth by 44.6 per cent to 139,300 (previous year: 96,300) tCO_{2eq}. We were able to improve our average emission intensity, i.e. emissions per produced Watt peak: They dropped to 164.5 (previous year: 175.8) gCO_{2eq}/Wp. During the average module life span of 25 years it is possible to save some 4.6 million (previous year: 3.1) million tCO_{2eq} with the modules sold by us in 2009. This will help avoid costs for environmental damage amounting to € 318.9 million (previous year: € 219.7m). If you compare the CO_{2eq} emissions avoided by our modules with the CO_{2eq} emissions caused by our company the result is a positive CO_{2eq} balance for SOLARWORLD. The emissions avoided continue to exceed the emissions caused by a factor of 33. ☉ [Report on sustainable corporate management](#) • p. 213//

Within the framework of environmental management, concrete measures are planned and implemented at the individual locations. In addition, we expedited preparations for the introduction of the certification according to ISO 14001⁹ in the USA in 2009. In 2010 SOLARWORLD will have group-wide certifications in accordance with both ISO 9001 and ISO 14001.

Internal environmental audits and annual identification of the indicators serve to check the efficiency of the measures and the degree of target achievement. In addition, the Environmental Management Officers report to management on the basis of an internal target/actual comparison.

External environmental communication is handled by Investor Relations in the context of our sustainability reporting in accordance with the Global Reporting Initiative (GRI)⁹ and through publication of the data in the annual Carbon Disclosure Project (CDP)⁹. An internal environmental reporting system as well as audit reports and regular management reports ensure that all management levels in the SOLARWORLD Group are well informed. Our environmental reporting system includes a multi-faceted statistics network concerning waste, emissions, waste water and power statistics as well as auxiliary material and consumables statistics. At this point we would like to refer you to the presentation of the ecological performance indicators in the ☉ [Report on sustainable corporate management](#) • p. 213//.

By means of our **Health and Safety Management** – SOLARWORLD Scorecard: perspectives processes and employees – we create safe working conditions for our employees and support them in protecting their health. In 2009 meetings of the occupational safety committees, occupational health screenings, hazard analyses as well as occupational safety and protection seminars were conducted on a regular, group-wide basis. All group companies have their own Safety Officer available. In addition, we employ special safety engineers at the production companies.

Group-wide, health and safety management is rapidly merging. As a result of interaction of the new and older locations, the system is being further developed and standardized. In data collection, differing definitions may occur due to varying general legal conditions. These differences are disclosed in the indicator section of the GRI Report. ☉ [Report on sustainable corporate management](#) • p. 213//



Risk Management⁹ – SOLARWORLD Scorecard: all perspectives – is a tool that covers all business areas. We record risks group-wide in all departments. Deviations from early indicators show the existence of short- to medium-term risks. By way of the Scorecard performance drivers⁹, we can identify the long-term risks.

➔ [*Opportunity and risk management system*](#) • p. 114//

Internal Auditing is carried out by an independent staff department attached to the Management Board's Finance unit. The object of the audit is to determine the effectiveness of the Internal Control System (ICS). In addition to being oriented towards the past in the form of the (Re-)Assurance⁹, the Internal Audit also has a consultative and directional function in that it also examines the degree to which our processes make sense.

In addition to the management tools mentioned we prepared the SOLARWORLD Code of Conduct in the year under review and completed it in a version ready for approval. The contents were developed in a group-wide exchange with colleagues. Furthermore, legal compatibility with German and US law was verified. The Code constitutes a voluntary, group-wide behavioral standard regulating our activities in areas where no economic or legal framework conditions have been formulated or where the existing ones are insufficient from the SOLARWORLD point of view. The Code of Conduct is therefore binding on a group-wide basis. It is based on applicable national and international law. At the end of the year under review the Code of Conduct was submitted to the Freiberg works council for general approval.

On the interlinking of our management tools please also see the [*Ⓓ Sustainable corporate management*](#) • p. 042//

