

Management Report 2019

Markets and customers

Worldwide PV installations grew to a new record level in 2019, despite a significant demand slowdown in China. About 125 GW of solar systems were installed globally during last year, a 20% growth over the 104 GW added in 2018, when the market had increased by 4% from about 100 GW in 2017. Total global installed PV capacity reached about 625 GW by the end of 2019. The world's largest solar market, China, is still suffering from regulatory uncertainty as it transitions from a lucrative feed-in tariff scheme to tenders and subsidy-free installations. As a result, installations dropped by 36% to around 28 GW in 2019 from 44 GW a year earlier, a decline even pessimists had not forecast. However, Chinese PV manufacturing exceeded the 2018 output by more than 30% to satisfy strong demand abroad. About 70% of PV modules made in China were exported. The market growth outside China of about 53% stems from continuing cost reductions, making solar increasingly the lowest-cost power generation source in many regions. Another solar growth factor were favorable regulatory schemes, propelling demand in particular in the EU and the US: While the EU solar market grew over 100% to around 20 GW, as it needed to comply with the 2020 renewable energy targets, the US was up 14% at 12 GW, experiencing a run on larger PV systems to benefit from an attractive 30% solar tax credit that is starting to decline as of 2020.

On the technology side, PERC has replaced Al-BSF as the new standard technology for solar cells. The PERC market segment is increasingly dominated by Chinese equipment manufacturers because their competition has led to significantly lower equipment prices. While the race to lower equipment prices continued in China in 2019, we are developing high-quality equipment that offers the lowest total cost of ownership but requires higher initial investment. As a result, our margins have come under pressure and we have lost market share in the standard cell technology equipment segment.

TOPCon cell technology can be implemented by upgrading a PERC line, which improves efficiency by 1 to 1.5 percentage points. The market for upgrading existing PERC lines to TOPCon is not expected to take off before 2021.

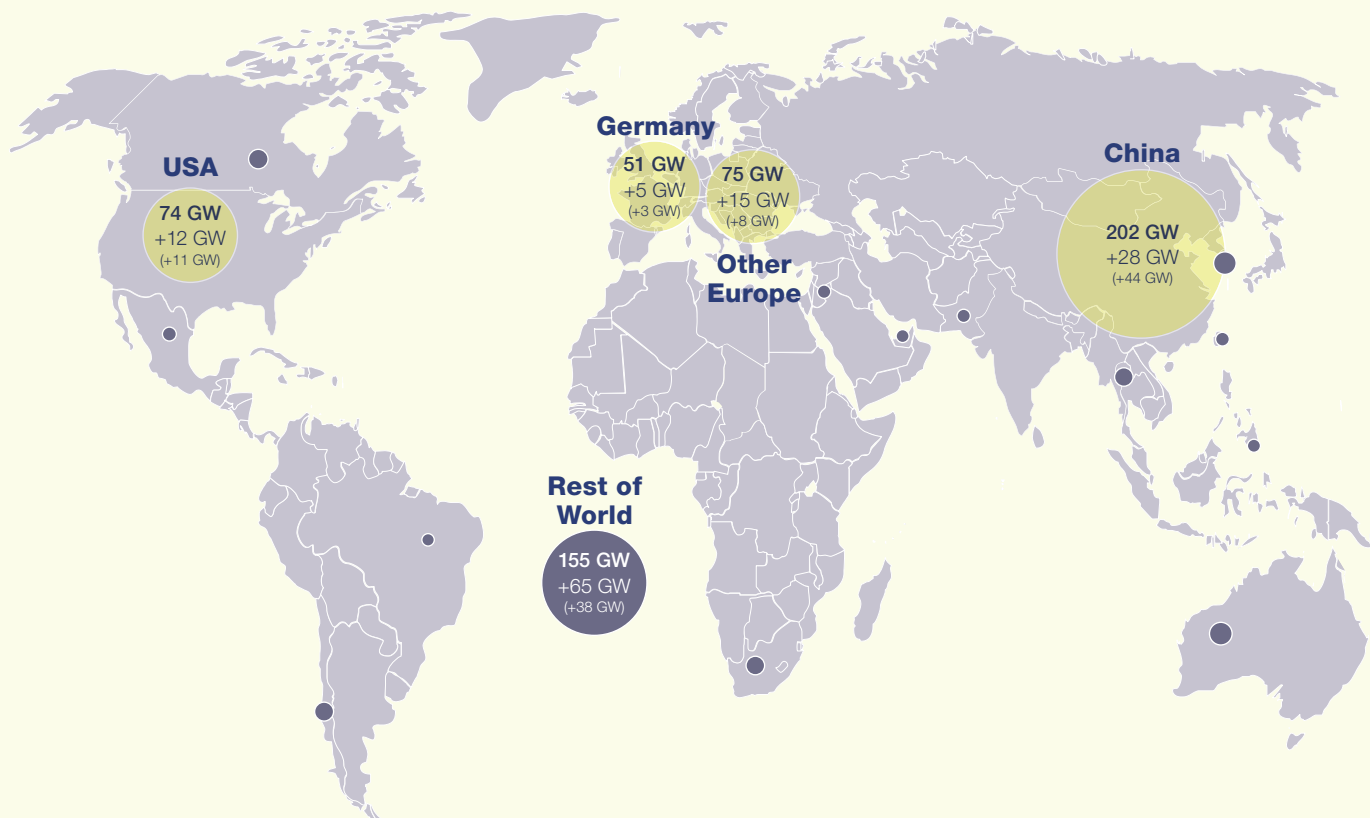
There is a great deal of market interest in heterojunction (HJT) technology, and our project pipeline is promising. We achieved a breakthrough in late 2018 with a CHF 74 million order from REC for our HJT/SmartWire connection technologies. In October 2019, shortly after the start of the installation phase, REC Group started mass production of its new Alpha Series. This new generation of modules is manufactured on Meyer Burger HJT/SmartWire core equipment and features the world's most powerful 60-cell solar panel and best-in-class power output of 380 Wp, representing 217 w/m².

China currently dominates global production capacity for PV solar cells and solar modules. This dominance is primarily driven by volumes and economies of scale and correspondingly tough competition, as well as local subsidies. As a result, selling prices are under pressure and many potential customers lack the cash flow for investments in new technologies. The country's strategic plan "Made in China 2025" focuses not only on growing the share of renewable power generation but also on developing its own Chinese equipment production footprint. Intellectual property protection remains a major obstacle to successful business development in China.

Strategic realignment

Against this backdrop, the Board of Directors and the Executive Board have decided on a strategic realignment of Meyer Burger. We are withdrawing from low-margin bulk business and will concentrate on the marketing of our proprietary HJT/SmartWire connection technologies as well as the promising next-generation perovskite cell technology. We are confident that these technologies will give Meyer Burger a head start of several years over our competition, and we are pushing ahead with our HJT/SmartWire connection technologies roadmap in order to maintain our global leadership position.

Globally installed PV capacity (end-market)



Note: Nominal GW as at year-end 2019
Delta reflects change in 2019 compared to previous year; numbers in brackets reflect change in 2018
Sources: Meyer Burger estimates

To maintain this competitive edge, we will protect our technologies and the associated production equipment more effectively and place greater emphasis on partnerships. By controlling the dissemination of our technology, we can rigorously protect our intellectual property. We intend to tie the utilization of our HJT/SmartWire connection technologies to a profit-sharing model.

This new business model is designed to safeguard the interests of Meyer Burger and to allow Meyer Burger a larger share in the success of our technologies. We are conducting contractual negotiations for additional orders of HJT/SmartWire core equipment in line with this model together with the solar module manufacturer REC Solar as a pilot customer, as well as other potential customers worldwide.

In March 2019, we entered into a strategic partnership with the United Kingdom's Oxford PV, the technology leader in the field of high-efficiency crystalline silicon/perovskite tandem solar cells. Perovskite/silicon-based tandem solar cells have been developed using HJT technology and promise a significant increase in efficiency. Oxford PV holds the world record in efficiency, at 28%, with its perovskite tandem solar cells. Our investment assures Meyer Burger's access to this new technology. In close cooperation with Oxford PV, we are driving forward the industrialization of perovskite solar cell production by combining our HJT/SmartWire connection technologies with Oxford PV's perovskite solar cell technology.

As a direct result of our strategic refocusing, we have sold or restructured businesses that are no longer part of our core business (sale of the wafering business, sale of corporate real estate, sale of the software business, announcement of sale of the printing business and announcement of concentration of production in Hohenstein-Ernstthal, Germany, with closure of the Zülpich, Germany, site), thereby reducing our fixed cost base and increasing efficiency. Net proceeds of divestment resulted in a cash inflow of about CHF 96.5 million in 2019.

Incoming orders

Business development in 2019 was disappointing. Sales and margins in the bulk business remained below our expectations. Financial key figures reflect the ongoing transformation of the Group and the divestments. Meyer Burger achieved incoming orders of CHF 188.3 million in the fiscal year 2019, compared to CHF 326.8 million in 2018. Adjusted for divestments, incoming orders decreased by 24.3%. Orders on hand as at 31 December 2019 amounted to CHF 105.1 million (31 December 2018: CHF 240.5 million). The book-to-bill ratio was 0.72 for the fiscal year 2019 (0.80 for 2018).

As part of the cooperation with Oxford PV, we have received orders totaling CHF 38 million for HJT production lines, including the upgrade for perovskite tandem cell production. In addition, we have received two major orders from Asian customers for our MAiA® cell coating equipment totaling CHF 25 million.

Net sales

Net sales reached CHF 262.0 million (2018: CHF 407.0 million). Adjusted for divestments and currency effects, the organic decline in sales for the continuing operations was 22.1%. Sales development accelerated in the second half of 2019 to CHF 139.4 million from CHF 122.6 million in the first half of 2019. The regional sales mix has changed slightly from the previous year, although Asia remains the most important sales region for Meyer Burger: Asia accounted for 72% of net sales in 2019 (71% in 2018), while Europe accounted for 23% (25% in 2018) and the Americas for 5% (4% in 2018).

Operating income after cost of products and services

The operating income after cost of products and services was CHF 129.9 million (CHF 201.8 million in 2018), reflecting a margin of 49.6% (2018: 49.6%). The operating income in 2019 includes gains of CHF 29.7 million from the divestments of the business unit wafering and the subsidiary AIS. Excluding the divestments, the operating income after cost of products and services would have been CHF 100.2 million, reflecting a margin of 38.2%.

Operating expenses

Personnel expenses declined by 17.4% to CHF 104.4 million. This decline is the result of divestments, restructuring of the organisation and strict cost management. We continue to increase the flexibility of the organisation and to reduce the fixed cost base. Other operating expenses in the fiscal year 2019 amounted to CHF 39.0 million, a decline of 20.0% compared to 2018. Personnel and operating expenses include provisioned restructuring cost of approx. CHF 7 million in conjunction with closure of the Zülpich (Germany) site.

EBITDA

Due to the decline in sales, under-utilization of capacities and restructuring cost, EBITDA was below the level achieved in the previous year and totaled CHF -13.5 million in the fiscal year 2019 (CHF +26.8 million in 2018, restated). The EBITDA margin was -5.1% compared to 6.6% a year earlier.

EBIT

Depreciation and amortisation totaled CHF 15.2 million (CHF 24.3 million in 2018). This decline can be attributed to the fact that the amortisation of certain key technologies was finished during the previous year. The result at the EBIT level amounted to CHF -28.6 million (CHF +2.4 million in 2018 restated).

Financial result and result from investment in associates

The financial result, net, was CHF -7.9 million (2018: CHF -9.8 million). Financial expense in the fiscal year 2019 included interest expense for the convertible bond of CHF -2.0 million (2018: CHF -2.0 million). The valuation of intercompany loans to foreign subsidiaries led to financial loss from unrealised negative foreign currency translation effects of CHF -4.2 million (2018: CHF -2.7 million). In addition there were other unrealised currency translation effects of CHF 0.9 million (2018: CHF -2.1 million), interest expense for mortgage loans and other interest expense of CHF -1.0 million (2018: CHF -1.5 million), other financial expense of CHF -1.7 million (2018: CHF -1.5 million) and interest income of CHF +0.1 million (2018: CHF +0.1 million). The proportionate result from investments in associates due to the acquired interest in Oxford PV amounted to CHF -3.0 million.

Non-operating result

The company building in Thun was sold during 2019 and accordingly the gain from the sale of the investment property portion of CHF 4.0 million is shown as non-operating result.

Taxes

Tax expenses for the fiscal year 2019 were CHF 4.1 million (2018: CHF 52.1 million). Tax expenses related to current income taxes on profits for the fiscal year 2019 were CHF 0.1 million and deferred income taxes were CHF -4.3 million.

Net result

Meyer Burger generated a Group result of CHF -39.7 million in the fiscal year 2019 (2018: CHF -59.4 million). The net result per share was CHF -0.06 (2018: CHF -0.10).

Balance sheet as at 31 December 2019

The balance sheet total declined compared to the previous year, mainly because of the divestments and due to the lower order intake resulting in lower customer prepayments. The balance sheet total stood at CHF 274.6 million (31 December 2018: CHF 349.2 million). Cash and cash equivalents stood at CHF 35.5 million (31 December 2018: CHF 89.8 million). In addition, the Group holds CHF 26.3 million of restricted cash, which is pledged for the guarantee facilities used for customer prepayments. Property, plant and equipment decreased after selling corporate real estate to CHF 32.9 million (31 December 2018: CHF 82.3 million). Total liabilities declined to CHF 98.5 million (31 December 2018: CHF 167.4 million) due to the repayment of the mortgage on corporate real estate and lower customer prepayments reflecting lower order volumes. Equity stood at CHF 176.2 million (31 December 2018: CHF 181.7 million). The equity ratio was 64.1% as at 31 December 2019 (31 December 2018: 52.0%).

Cash flow

Cash flow from operations was CHF -83.5 million (2018: CHF -23.4 million). The negative cash flow from operations is mainly attributable to an increase in net working capital. Cash flow from investing activities was CHF +59.6 million (2018: CHF -5.1 million). This positive cash flow is the result of selling the wafering business, the company building and the software business AIS. The number also includes regular net investments into property, plant and equipment of CHF 6.9 million. Cash flow from financing activities was CHF -29.5 million (2018: CHF -5.1 million) and includes the repayment of financial liabilities.

R&D investments

Meyer Burger invested a total of CHF 32.7 million or about 12% of net sales in R&D during 2019 (2018: CHF 44.8 million; about 11% of net sales). Research and development expenses are not capitalised in the balance sheet but recognised as expenses. The strategic focus on HJT/SmartWire connection technologies entails the divestment of non-core activities and a concentration of future R&D activities on the most promising products. Meyer Burger expects to keep its annual R&D expenses at a steady level.

Currencies

In 2019, 2% of net sales were generated in Swiss Francs (2018: 13%), 81% in Euros (2018: 76%), 9% in US dollars (2018: 5%), whereas other currencies amounted to 8% (2018: 6%). To maintain a natural hedge, Meyer Burger strives to have as great a share of sales as possible in the currencies in which subsidiaries provide their services. To hedge against residual currency risks, the company uses forward currency contracts where necessary. It does not hedge against foreign currency risks on the carrying amounts of foreign subsidiaries or on the conversion of the earnings of these subsidiaries, however.

Workforce

Employees (FTE)	2019	2018 ¹	2017	2016 ²	2016	2015
Total at year-end	805	1 191	1 276	1 435	1 505	1 525
Operations	304	481	587	605	643	613
Research, Development	213	281	232	297	307	338
Sales, Services	189	281	322	345	359	367
Finance, Administration	99	148	135	188	196	207

¹ Definitions of certain individual functions were changed in accordance with new company HR policies. As a result, transfers from Operations (formerly Production, Logistics) to Research/Development and Finance/Administration functions occurred in 2018.

² Number of FTEs as at 31 December 2016, adjusted by 70 people who had already left the company by the end of 2016 in connection with a structural program.

Employees

At the end of 2019, Meyer Burger employed about 840 people (or 805 full time equivalents [FTEs]), with permanent working contracts (end of 2018: 1,191 FTEs). In addition, the Group employed 48 temporary full-time workers (2018: 76 temporary full-time employees) and 27 apprentices (2018: 38 apprentices). The change in the number of employees during the fiscal year 2019 is mainly a result of divesting the wafering business and the software business, as well as the transformation program announced in October 2018. The average number of full-time employees in 2019 was 998 FTEs (2018: 1,236 FTEs).

→ For more information on Human Resources issues see page 14.

Risk management

Meyer Burger uses various risk management instruments to manage its strategic, financial and operational risks. The Board of Directors has primary responsibility for evaluating strategic risks. Financial and operational risks are mainly assessed by the Executive Board. The results are submitted to the Board of Directors at regular intervals and any necessary countermeasures determined. Risk management is integrated within the company's management processes and involves Planning, Finance & Controlling, Internal Audit, Production & Logistics, Research & Development, Product Management, Sales, IT, Corporate Communications, Human Resources, and external Tax and Legal Consulting.

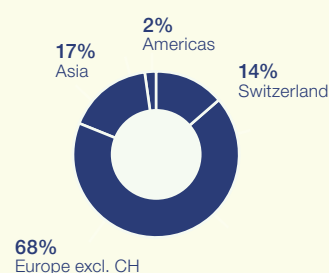
→ For information about financial risk management see Note 3 on page 89.

→ For information about the identified risk regarding going concern see Note 4.9 on page 95.

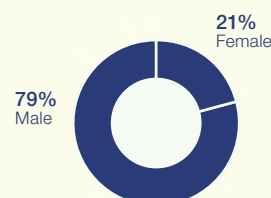
Occupational safety is of major importance to Meyer Burger. Risks are minimised and a high degree of process safety is achieved through careful analysis of operating procedures and the provision of employee training.

→ For information about employees see the next section and the corresponding part of the Sustainability Report on page 12.

Employee structure by region in 2019 in %



Employee structure by gender in 2019 in %



Innovation and technology

Solar cells and modules

Our main R&D activities in 2019 focused on the development of our leading proprietary HJT/SmartWire cell and module technologies as well as on future HJT/perovskite and SmartWire cell and module technologies.

As Meyer Burger's HJT customer projects at REC, ENEL and Ecosolifer progress, the technology has gained maturity. These projects have delivered the proof of concept regarding the financial viability and performance of HJT technology in mass production. We have demonstrated the competitive cost structure of our HJT/SmartWire solution compared to mainstream PERC.

Our new generation of SmartWire equipment in combination with our HJT cell technology provides the solid foundation for the successful Alpha-module series of our customer REC Solar. The Alpha solar module provides best-in-class module efficiency of up to 21.7% and power output of up to 380 Wp for a 60-cell panel.

We made substantial progress in the development of our proprietary HJT/SmartWire solution, which has the potential to further increase module efficiency. We anticipate that our HJT/SmartWire connection technologies will help to boost module efficiencies. Average cell efficiencies exceeding 24% could be achieved in mass production, with even higher figures recorded on our in-house R&D demo line. A roadmap targeting 25% efficiency for HJT solar cells has been developed and was announced in March 2019 during the PV CellTech conference in Penang (Malaysia). Furthermore, several independent analysts listed module powers based on Meyer Burger's technologies as best in class, both for 60-cell and for 72-cell module sizes.

Technology cooperation with Oxford PV has started. Oxford PV ordered all equipment needed for the pilot manufacturing of HJT/perovskite tandem cells in its factory in Brandenburg/Havel (Germany). Research and development work specifically for the perovskite equipment has progressed so far in accordance with the goal of installing the equipment in 2020 and starting the production ramp-up in 2021.

We have continued the development of our TOPCon solution CAiA and achieved remarkable results. TOPCon cell efficiencies with CAiA reached an average of 23%, with 23.5% at the upper end. We believe that TOPCon could be a financially attractive development of PERC production lines. Still, it remains to be seen if TOPCon is the technology of choice for the cell and panel manufacturers in the future.

We continue the development of solar cell and module measurement technologies and products. Our R&D work at Pasan site in Neuchâtel (Switzerland) contributes to the Oxford PV project and develops new cell and module measurement technologies required to reliably measure HJT/perovskite tandem cells.

In 2019, Meyer Burger continued its long-term cooperation with world-leading solar research institutes including CEA INES (France), CSEM (Switzerland), Fraunhofer ISE (Germany), HZB (Germany), ISFH (Germany), SERIS (Singapore) and UNSW (Australia).

Specialised technology

Muegge GmbH, a 100% subsidiary of Meyer Burger, is a market leader and provider of customised plasma solutions for a number of applications. In 2019, R&D work at Muegge focused on new plasma electronic systems, the plasma-assisted growth of jewelry diamonds as well as first feasibility studies regarding the use of plasma technologies for Power-to-X applications.

We worked on Industry 4.0 and digitization solutions embedded in Meyer Burger products such as monitoring systems, MES in cloud solutions, etc. In spite of divesting our software company AIS Automation GmbH, we will continue our efforts to develop Industry 4.0 solutions for best customer performance.

Outlook

The medium- and long-term growth outlook for the solar industry has continued to improve against the backdrop of current concerns over climate change. Solar power is already the most affordable technology in many regions today, offering a uniquely wide range of applications and the greatest potential for cost reduction among relevant electricity generation technologies.

After a lull in growth during the last 12 months due to restructuring of funding for China's solar market, significant expansion in global installed solar power output is now forecast to return in 2020 and beyond. We believe that more than half of this solar power capacity will be installed outside China. Growth in new and established western markets, as it is forecast for the coming years, will also result in new local PV production capacities.

As a high-tech company, Meyer Burger will continue to make substantial investments in research and development in order to maintain our market lead in the premium segment. With our focus on developing high-efficiency industrial HJT production solutions, we have achieved record cell efficiency of over 24.7% in commercialised HJT systems. We are already working on a roadmap for HJT cells with even higher levels of efficiency. The collaboration with REC has led to a quantum leap in the manufacture of HJT/SmartWire modules. The strategic partnership with Oxford PV enables us to further develop and secure our technological leadership beyond HJT.