

# Oerlikon Group

## Corporate structure

Oerlikon is a leading global technology Group providing market-leading technologies and services. The Group is structured in three Segments<sup>1</sup>: Surface Solutions, Manmade Fibers and Drive Systems, each operating under their own well-established brands and with their own market-specific strategies.

Oerlikon operates globally with 178 own sites in 37 countries. It has a long-standing presence in Asia, particularly in the emerging markets of China and India, a strong foundation in Europe and serves the most important markets in the Americas.

## Sustainability and key Group developments

Oerlikon is committed to adhering to the principles of good corporate governance, in particular, the guidelines defined in the Swiss Code of Best Practice for Corporate Governance by Economiesuisse. Apart from the Articles of Incorporation, in which the purpose of the company, the corporate bylaws and statutes are officially filed, the Group has a clearly defined Code of Conduct covering the ethical and legal framework for all its business activities.

Sustainability at Oerlikon cuts across all areas of the business, from customer service, R&D, innovation and operational excellence (covering manufacturing, supply chain, health, safety and environment) to HR policy, risk management and compliance with legal, regulatory, ethical and internal requirements.

## Strategy

### Becoming a surface solutions powerhouse

In November 2015, Oerlikon announced at the Investor Day that it has embarked on a path forward to create long-term share-

holder value. The strategy is based on unlocking the strengths and potential of Oerlikon's surface solutions business and shaping tomorrow's industries. Developments such as a growing population, rising demand for energy and increasing mobility are changing the world at a breakneck pace. These megatrends are transforming business models, societies and entire industries – and creating attractive opportunities for innovators. Key issues include how to reduce energy consumption, minimize the use of scarce resources and increase performance. Materials processing as well as new and intelligent materials and surfaces are destined to play a key role in providing solutions for these trends.

Oerlikon's Surface Solutions Segment is a technology leader in surface solutions and advanced materials, with a deep understanding of industry needs as well as a value proposition that has been strengthened by the successful merging of Oerlikon Balzers and Oerlikon Metco into the Segment. It offers customers a broad and versatile technology portfolio of coatings, materials and equipment, coupled with a highly valued service offering in the industry through strong application engineering competence and the most extensive global network of service and production centers.

The Segment will be supporting the development of stronger and lighter materials, or changing the properties of product materials. Such solutions can be material and lead to great value creation for customers by increasing the reliability of their products and delivering cost savings. Surface technologies can also permit the use of less costly or different base materials, increase productivity, improve energy efficiency, prolong product lifespans and reduce environmental impact.

## Group structure and competence brands <sup>1</sup>

# oerlikon

### Surface Solutions Segment

**oerlikon**  
balzers

**oerlikon**  
metco

### Manmade Fibers Segment

**oerlikon**  
barmag

**oerlikon**  
neumag

### Drive Systems Segment

**oerlikon**  
graziano

**oerlikon**  
fairfield

<sup>1</sup> Continuing operations.

**Investing in the surface solutions growth engine**

Key markets such as automotive and aviation are experiencing solid underlying growth dynamics even in a low GDP environment. The company’s ambition is to grow faster than these underlying markets. By adding new technologies such as laser cladding and additive manufacturing, the processes used to synthesize 3-dimensional objects, Oerlikon has increased the size of the total targeted market for its surface solutions business by around 20 % to CHF 11 billion.

To accelerate value creation and growth, Oerlikon will pursue organic growth opportunities by investing in the expansion of capacity, competences, technology upgrades and R&D to create new and exciting surface treatments and products. Additionally, the company will pursue selected acquisitions to further expand its services, technologies and market access through a combination of smaller bolt-on “string of pearls” acquisitions, or larger, more transformative deals to gain complementary or adjacent technologies.

**Managing the cycle to strengthen Oerlikon’s leading technology position**

Oerlikon also enjoys strong technology leadership and holds valuable intellectual property in its manmade fibers business, where it is best in its class thanks to its technology and expertise. The Segment offers end-to-end systems covering every step in the process of manmade fiber production, from melt to yarn, fibers and nonwovens, and can provide customers with customized turnkey solutions.

The Segment is well-positioned to benefit from attractive medium term growth prospects in polyester markets thanks to key megatrends such as a growing population and the rising middle

class, burgeoning demand for more eco-friendly and hard wearing yarns, and new applications in sectors such as construction or filtration that are driving demand for technical textiles.

Manmade fibers is a business that can deliver strong margins. In the near term, the Segment will be managed through the trough, resulting primarily from a generally weak global economy and overcapacity in China. But the long-term investment case remains attractive. By lowering costs, Oerlikon is positioning the Segment to capitalize on market recovery and growth prospects.

**Focusing and fixing Drive Systems**

Population and GDP growth in key markets such as China, India and South America will continue to deliver favorable longer-term opportunities for Oerlikon’s Drive Systems Segment, which will focus on core products that serve the key sectors of agriculture, construction, automotive, transportation and energy.

Many of these end markets are currently experiencing weak demand and low-to-negative growth. To navigate market conditions and increase competitiveness and profitability, the Drive Systems Segment is executing a disciplined strategy based on four key pillars: streamlining the product portfolio; increasing the range of applications for existing technologies; creating focused factories to concentrate expertise and deliver process efficiency and economies of scale; and focusing on customers and orders that add value and profitability.

**Customer service**

To strengthen customer relationships and offer world-class services in close proximity to customers, Oerlikon continuously expands its global presence and customer service network. At the end of 2015, the Group has 178 sites after taking into account

**Growth drivers across Segments**



**Surface Solutions**

- Engineering demands from customers for stronger and lighter materials
- Customer need for increased product performance, efficiency, extended product life and multi-functionality
- Stronger demand for environmentally friendly coating solutions
- Additive manufacturing



**Manmade Fibers**

- Growing population and rising middle class mean more demand for clothing and other fabrics
- Manmade fibers are more durable and increasingly used in industrial applications
- Demand for polycondensation solutions entirely supplied and managed from a single company



**Drive Systems**

- Automotive, transportation, energy, agriculture and construction are growth markets over the middle to long-term where technologies are key game changers

the announced divestment of the Vacuum Segment. Oerlikon is represented by its own companies in almost all of the major markets in the world and operates according to the principle of “in the market for the market”. In selected growth markets, the Group partners with distributors and representatives. In 2015, Oerlikon’s service business amounted to CHF 897 million, and increased its ratio of service revenues to total Group sales to 33.6% (restated FY2014: 29.4%).

The production environment of many of Oerlikon’s customers involve complex systems of machinery, which need to work seamlessly. Such systems involve high capital investments. Oerlikon’s core competencies are centered on customer service and include an in-depth understanding of customers’ production processes and systems, the ability to anticipate customers’ needs and the ability to apply a breadth of competencies required to deliver a highly customized approach and close customer collaboration at all stages. By leveraging its strong materials processing and application engineering competence, Oerlikon often works in partnership with customers to solve problems at early stages of their product design and development.

For example, the coatings for cutting tools offered by Oerlikon’s Surface Solutions Segment can massively increase drilling speeds and significantly improve productivity. The Segment can then augment the customer benefit through its services business, which can regrind and recoat the tools multiple times, saving nearly half the cost of a new drill. Similarly, besides offering turnkey solutions for new chemical fiber plants, Oerlikon can service and maintain customer’s spinning plants and can even operate maintenance workshops at customer sites.

### R&D and innovation

A key strength of the Group rests on developing leading-edge technology to maintain its competitive advantage and leadership position. Today, Oerlikon has value-enhancing proprietary technologies for surface solutions and advanced materials, the manufacturing of manmade fibers and polycondensation systems, and drives and shifting solutions for vehicles and machinery.

Many of the key megatrend challenges can be solved through engineering innovations. Increasing the efficiency of mobility, improving the performance and functionality of goods and systems, efficient use of energy, and contributing to environmental sustainability will continue to feature in the innovative technologies of Oerlikon. Oerlikon also seeks to enhance its processes and

services through innovation to create further value for customers. The imperative for continuous improvement drives the creation of new innovative products, such as the Surface Solution Segment’s metal powders and coatings, which satisfy the growing demand for lighter materials, longer product lifespans, strengthened surface properties, increased performance and multi-functionalities.

In 2015, Oerlikon continued to invest around 4% of Group sales in R&D, corresponding to CHF 103 million. More than 1350 engineers and scientists work for the Group worldwide. In 2015, Oerlikon filed 86 patents for new inventions to protect its intellectual property.

### Operational excellence

The Oerlikon Operational Excellence (OOE) program is centrally led by the Group Business Services function and focuses on three interrelated areas: world-class manufacturing, world-class procurement and health, safety and environment (HSE). As the Group strives to achieve world-class in all three areas, its ongoing initiatives have been gaining traction, showing material results from improvements in efficiency and productivity in its production and supply chain processes. Since its commencement, the Group’s HSE program has led to significant reductions in accidents and the associated lost time accident frequency rates (LTAFR). All in all, Oerlikon’s operational excellence programs contribute to improving the workplace for employees and to generating important cost savings for the Group.

In 2015, operational excellence was rolled out to the operations and customer service functions within the Manmade Fibers Segment, to the entire Drive Systems Segment in India, China and the EMEA region, and continued to be implemented within the Surface Solutions Segment. With the guidance of the Oerlikon Operational Excellence Academy, all line management personnel from the Drive Systems Segment in those regions were trained. Additionally, 70% of blue collar employees were trained in operational excellence basics such as 5S, visual management and value walk. For daily management tasks and structural problem solving, line management uses shopfloor management, a methodology tool that measures and assesses key figures related to process transparency. Together with HSE, a Best Practice Sharing platform was set up, enabling all teams and members worldwide to share their experiences and successes regarding OOE and safety across all Segments.

### Peer groups for benchmarking

| Group (Swiss peers) | Group (International peers) | Surface Solutions Segment | Manmade Fibers Segment      | Drive Systems Segment |
|---------------------|-----------------------------|---------------------------|-----------------------------|-----------------------|
| ABB                 | GEA                         | Bodycote                  | Andritz                     | American Axle         |
| Georg Fischer       | General Electric            | Kennametal                | Dürr                        | Bharat Gears          |
| Sulzer              | Siemens                     | Praxair                   | Heidelberger Druckmaschinen | BorgWarner            |
|                     | Sumitomo                    | Sandvik                   | Schweiter Technologies      | Brembo                |
|                     | ThyssenKrupp                |                           |                             | Carraro               |
|                     |                             |                           |                             | Dana                  |

### World-class manufacturing

The application of the Oerlikon operational excellence program to manufacturing processes has yielded meaningful efficiencies, cost savings and innovation.

In 2015:

- Eight sites worldwide have begun value stream analysis projects with the aim of identifying improvements in areas such as net working capital, throughput time and cross-functional communications. The Neumünster site of the Manmade Fibers Segment, for instance, succeeded in decreasing throughput time by as much as 20% in 2015.
- A total of 9 out of 17 sites from the Manmade Fibers and Drive Systems Segments are stably running shop floor management. Line managers use this central leadership tool to steer and guide employees, who in turn use it to address and resolve problems through an inclusive, bottom-up orientation.
- In the Manmade Fibers Segment, operational excellence is also being implemented in Beijing, Suzhou, Wuxi and Tongxiang in China to strengthen customer service by helping the workshops improve their performance and meet goals for quality assurance as well as on-time delivery, while improving working conditions.
- The Drive Systems Segment in Lafayette, Indiana, USA, took over the CTL production line from Danfoss. While transferring knowledge and rebuilding the assembly line, the Segment identified and implemented process enhancements and a U-shaped layout that yielded a more than 30% improvement in productivity and a 50% increase in flexibility. Similarly, the new Mercedes line in its plant in Luserna, Italy, uses a synchronized and balanced one-piece-flow and U-shaped assembly line, designed along lean manufacturing principles, which has generated a 25% improvement in productivity.
- At the Surface Solutions Segment, further operational excellence structures and actions were defined to ensure medium-to-long term improvements in manufacturing productivity and stronger collaboration within the Segment.

### World-class supply chain management

Optimizing the supply chain enables Oerlikon to benefit from higher operating efficiency, better use of resources and cost savings. Establishing close partnerships with strategically selected suppliers, pooling purchasing, creating knowledge networks, utilizing advanced procurement tools and streamlining processes are all part of Oerlikon's procurement harmonization program. In 2015, the initiatives yielded for the Group mid-double-digit millions of gross savings in Swiss francs. The program is centrally coordinated and implemented across the Group, with clear strategic and financial objectives. Oerlikon also ensures that its suppliers meet high quality and sustainability standards.

In 2015:

- The logistics team addressed more than 65% of the Group's logistics spending using electronic requests for quotations and an online platform for freight tendering. They successfully completed several cross-functional projects in the "Maintenance Repair Operation" (MRO) category.
- For eProcurement, an eSourcing tool was implemented and deployed worldwide. Additionally, the Manmade Fibers Segment implemented the SupplyOne eP2P process in

Remscheid, Germany. As a result, 16% of transactions are automated, with 80% requiring no manual application.

- STEP, the Savings Tracking Execution Platform, was deployed globally at the Surface Solutions Segment to accelerate the integration of supply management cost saving initiatives and serve as a vehicle to align processes.
- Under the Supply Chain Academy, two separate programs took place: (1) more than 170 employees have started with an online learning program on supply chain management; (2) 117 employees completed over 2230 online learning modules and over 170 buyers worldwide were trained in procurement expert or category management in Europe, the United States, China and India.
- Thanks to Category Councils held in 2015, the first target panels have been drafted and will be implemented over the next year.

### Health and Safety

Occupational health and safety are important elements of Oerlikon's sustainability strategy and form an integral part of the Group's business processes. HSE guidelines and monitoring are centrally coordinated, but the programs and processes are decentralized and implemented by the Segments and sites locally. The Visual Safety Leadership initiative plays a key role in this context, with a series of concrete measures aimed at cutting accident figures further and protecting the health of employees. The vision is "zero harm to people". The key performance indicator for measuring progress is the lost time accidents frequency rate (LTAFR) figure. In 2015, Oerlikon recorded an LTAFR of 0.51, a 32% reduction from the LTAFR value of 0.75 at the end of 2014.

Additionally, in 2015:

- Oerlikon held its first Global Health & Safety day to promote ergonomics to employees globally through meaningful and engaging activities.
- The Surface Solutions Segment implemented safety initiatives with operational managers at all levels carrying out regular safety observation tours. The Segment also rolled out the permit-to-work system and the proper lock-out-tagout (LOTO) procedures globally, and defined strict rules for working-at-height. More than 200 people were trained on cranes and hoist safety. The Segment received an ISO 14001 recertification for its site in Balzers.
- The Manmade Fibers Segment began with the training of 400 employees in the operation of cranes and fastening of loads, where the ergonomic principles in workplaces were consistently implemented. It also expanded the fire alarm system to comprehensive monitoring and alerting in all production, storage and testing areas. In addition, the Segment also undertook a revision and execution of risk assessments at the Segment's sites in Germany and implemented a legal cadastre for HSE-related legislation.
- The Drive Systems Segment conducted an ergonomic risk assessment of its operations in Italy, followed by the launch of an action plan and organizational improvements. In addition, the Segment organized their own "HSE days" or "HSE weeks" to focus employee attention on health and safety issues in the workplace, and organized a machine safety workshop for maintenance staff.

## Environment

Reducing energy consumption and minimizing the environmental impact of Oerlikon's global operations are focus areas at both the Group and Segment levels. In 2015, a new Health, Safety & Environmental Sustainability policy was drawn up. This policy is under review and will commit the Group to further strengthening the Group's health and safety measures, as well as coordinating and advancing the Group's contribution to environmental sustainability alongside its long-term goals of sustaining profitable growth and value creation for all stakeholders. Additionally, in the reporting year:

- The Surface Solutions Segment has obtained certification of all 14 of its Oerlikon Balzers sites in Germany for the ISO 50001 certified energy management system.
- The Manmade Fibers Segment successfully implemented its energy management certification in accordance with ISO 50001.
- The Drive Systems Segment in Italy achieved re-certification for ISO 14001, a standard for environmental management systems, and its new production site in Ahmedabad earned a Gold Rating certification from the Indian Green Building Council.

For Oerlikon, sustainability also means strengthening the Group's ability to provide customers with more sustainable products and services. A case in point within the Surface Solutions Segment is its PPD™ (Pulsed Plasma Diffusion) technology for the surface treatment of large forming tools. This is an environmentally friendly and more cost efficient alternative to the chrome-plating process for wear protection treatment of tools used in the automotive industry. In addition, the Segment's coatings for jet engine parts improve engine efficiency by 2%, effectively saving 4.8 billion liters of fuel annually and cutting CO<sub>2</sub> emissions by 12.3 million tons per year.

## Employees

Oerlikon fosters a culture that encourages employees' sense of responsibility and development, built on its core values of Integrity, Team Spirit, Excellence and Innovation. Oerlikon aims to be a preferred employer for current and potential new employees. Apart from competitive pay and a modern HR policy, Oerlikon runs various HR programs:

- Leadership Development: in 2015, a Group-wide leadership development program for mid-level leaders was put in place, following programs for senior leaders in 2014. Front-line leadership development programs were also expanded to increase leadership effectiveness given current and future demands.
- Talent recruitment: the Group offered further specific programs for graduates from universities and institutes of technology.
- Functional academies: The Operational Excellence Academy was expanded to further sites and internal trainers were first equipped to train shop floor employees to implement tools and best practices on a larger scale to optimize operational efficiencies. Procurement specialists trained through the Supply Chain Academy are on the way to achieving Procurement Excellence by the end of 2016.

- Apprenticeship: over 550 young people are currently completing their apprenticeship. The majority of them are at Drive Systems Segment. To date, the Surface Solutions Segment has trained over 1 400 interns.
- Diversity: in all markets, particularly in China and India, Oerlikon primarily employs local managers. The composition of senior management, known as the "Global Leaders", represents Oerlikon's diverse culture, with over 80 members from 12 countries.

## Risk management

Oerlikon takes a comprehensive approach to risk management that identifies, assesses and controls all corporate risks relevant throughout the Group, including market, credit and operational risks. The risk management system is integrated throughout the company from an operational and management perspective. Further information about risk management can be found on pages 60 and 61.

## Compliance

The Oerlikon Group ensures that business practices worldwide are in line with the Code of Conduct, internal regulations, as well as legal and regulatory requirements. Compliance is monitored at Group level, setting standards, recommending preventive measures and providing information, training and consultation. As a company listed on the SIX Swiss Exchange, Oerlikon complies with the legal and regulatory requirements specified by SIX and the Swiss government. Further details about compliance can be found on page 61.