



Corporate Responsibility Report 2019

MAN Energy Solutions
Future in the making

Building a
sustainable
future

3 804

Order intake (€ million)

3 487

2018

3 462

Revenue (€ million)

3 128

2018

15 198

Employees (number as of Dec. 31)

14 727

2018

82 552

CO₂ emissions (in t)

108 560

2018

37 128

Total amount of waste (in t)

45 203

2018

21 013

Energy use from renewable
energy sources (in MWh)

8 839

2018

3 280

2017

2 832

2017

14 318

2017

107 066

2017

47 884

2017

8 599

2017

MAN Energy Solutions in Summary

— MAN Energy Solutions SE is a mechanical and plant engineering company and is one of the world's leading suppliers of large engines and turbomachinery, including related services. The products are used in ships, power plants and various industrial applications such as the chemical or petrochemical industry. The company is headquartered in Augsburg, Germany, and has approximately 15 000 employees at more than 120 locations around the globe. It is currently undergoing a strategic transformation process towards product solutions that aim to decarbonize industry and society with digital support. In concrete terms, this means, among other things, the expansion of the portfolio to include, for example, hybrid ship propulsion systems, energy storage technologies or components and plants that can be used to produce gas, hydrogen or synthetic fuels from electricity generated from renewable sources (Power-to-X).

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Dear readers,

The world in which we live seems to be changing faster and faster and therefore is becoming increasingly difficult to make plans for. To some extent, this may only be a perceived reality, but the global COVID-19 crisis shows that at least a part of this perception is certainly true. Whereas Corona was not yet an issue in 2019, this year every company, every organization and every single person has been forced to grapple with this pandemic. We are of course doing this at MAN Energy Solutions as well: with a variety of measures, whose top priority is the health of our employees, followed by assuring our customers that, even through this difficult situation, we remain the reliable business partner that they have come to know. Therefore, our message to the markets in this peculiar time is “we are open for business”.

But if planning is becoming more and more difficult, does this mean that you can just forego all planning? The answer is, of course, no. Plans are important; they are a compass guiding you towards a goal you are striving for, whether as an individual or as a company. MAN Energy Solutions is pleased to have a good plan for working towards a goal that will surpass the Corona crisis in urgency in the medium term: protect this planet's climate from further disruptions. The strategy that MAN Energy Solutions has been implementing since 2017 is our plan to make a significant contribution to the decarbonization of industry and society with new product solutions and supported by ongoing digitization. Whether hybrid engine concepts and alternative fuels for use in shipping or battery or turbomachine-supported energy storage technologies in the power plant business: Our new portfolio will help to meet the requirements of the Paris Climate Treaty, that is, to limit global warming to less than 2° C compared to pre-industrial levels, and to achieve climate neutrality by 2050. By 2030, these new product solutions, and this is also part of the plan, will make up a significant part of our business.

In 2019, we took further concrete steps to make our strategy a reality. This report will refer to a number of projects that demonstrate this. However, last year was also marked by another strategic decision, namely the separation of MAN Energy Solutions from the MAN Group and assigning it directly to our owner Volkswagen. One of the consequences of this step is that MAN Energy Solutions is no longer included in the MAN SE Corporate Responsibility Report, as it was in the past. However, our above-mentioned strategy, which is fundamentally aimed at sustainable progress and prosperity, made it very easy for us to decide to publish our own CR Report for MAN Energy Solutions with immediate effect.

We hope you enjoy reading the first issue for the 2019 reporting year.

Cordially yours,



Dr. Uwe Lauber

Chief Executive Officer
MAN Energy Solutions SE

“Our goal is to be successful in the market with new product solutions while protecting the climate on this planet from further disruption.”



Dr. Uwe Lauber, CEO MAN Energy Solutions

Our Strategy

A pioneering spirit has distinguished MAN Energy Solutions for more than 260 years, but the company's mission is now undergoing change. What role will we play in a decarbonized and digitized world? And will this role be meaningful for the society of the future? Those who want early answers to these questions should take part in shaping the future themselves.

Our Mission

We convert energy into sustainable progress and prosperity. We drive the transition towards a carbon-neutral world together with our partners.

Our Vision

We are a preferred employer, and the partner of choice for our customers in the marine, energy and industrial sectors. Building on our unique range of capabilities, we create pioneering solutions to master the business, technical, and operational challenges of decarbonization. By 2030, these solutions will comprise a major part of our business.

Strategic Cornerstones

Our strategy is based on a solid foundation that is complimented by innovative elements. By offering complete solutions instead of components and by taking advantage of the opportunities offered by digitization, among other things, the customer will continue to be the focus of our activities. Our guiding maxim is: What we can imagine, we can implement.



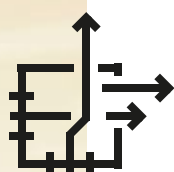
Portfolio Development

MAN Energy Solutions is undergoing a transformation from a manufacturer of components to a provider of complete solutions. Our unique portfolio of products and services comprises key elements for sustainable use in shipping, power generation and industry and is being continuously expanded.



Customer Thought Leadership

We act proactively rather than reactively and work closely with our customers. Based on our business, technical and operational expertise, we are able to give innovative advice quickly and introduce customers to forward-looking solutions.



Digital Transition

Digitization gives us the opportunity to expand our range of services and improve the way we work. Together with our employees, we would like to take advantage of the new opportunities to make the company faster, make work easier and strengthen the business. New opportunities for customers arise, for example, from the data generated by our products: they allow any wear and tear to be detected in advance and failures to be avoided.

Shaping the Future of the Business

Our Strategy

Our unique portfolio in the shipping, energy and industry sectors is the basis for creating complete solutions from individual components and offering these to our customers in the corresponding markets. We do this along with the continuous further development of individual products. In both cases we can draw on the unique expertise of our employees and the experience from our long company history.

Shipping

— For more than 100 years, MAN Energy Solutions has developed innovative marine propulsion technology. Today, these include topics such as dual fuel supply (liquid/gas), exhaust gas aftertreatment or battery hybrid solutions. Building on our unique portfolio of technologies and services, we offer integrated system solutions for more efficiency, sustainability and profitability in shipping.

What is Happening Now:

We are continuing to develop the maritime division of MAN Energy Solutions into a leading systems provider of highly efficient integrated propulsion and energy solutions for the marine industry and the offshore market. Through the improvement of the operating activity and competitiveness of our engine portfolio, we are strengthening our position in our core business.

Growth Areas:

- Comprehensive systems and solutions from one source
- Electric and battery hybrid propulsion systems
- Solutions to optimize efficiency and performance for mechanical drives
- Engine control systems for integrated engine and exhaust gas aftertreatment systems
- Fuel alternatives to heavy fuel oil (HFO), including liquefied natural gas (LNG) and related gas supply systems
- Digital services



Award for Dr. Uwe Lauber

CEO Dr. Uwe Lauber is number 1 among technology leaders in the maritime industry – according to the British trade magazine “Lloyd’s List” in December 2019. Every year the magazine publishes a list of the 100 most influential people in the shipping industry. This is based on activities in the areas of decarbonization and digitization, the cornerstones of MAN Energy Solutions’ corporate strategy. Specifically, the jurors named, among other things, the digital platform MAN CEON for the intelligent collection and evaluation of sensor and operating data as well as the intensive work on the decarbonization of the maritime economy.

Energy

As a partner to the energy industry, MAN Energy Solutions maintains long-standing relationships with energy supply companies around the world. In the changing energy landscape, security of supply and operational flexibility are a growing concern. It is necessary to design not only cost-effective but also sustainable energy production systems. Effective cost control without compromising longevity is a key competitive advantage.

What is Happening Now:

We are developing the MAN Energy Solutions divisions that supply the energy industry into a leading provider of complete energy solutions that combines thermal power plants with renewable energies and energy storage solutions. All components are integrated by an intelligent energy management system to ensure a cost-effective and reliable power supply.

Growth Areas:

- Gas and liquid fuel engine power plants for peak and base load applications and flexible and highly efficient CHP solutions
- Hybrid power plants and microgrids
- Medium and large energy storage systems
- Extended EPC services for LNG plants and turbomachinery
- Expanded after-sales offer with digital services

Industry

Similarly to MAN Energy Solutions, large parts of the global industrial landscape are affected by the upheavals that digitization and decarbonization bring with them. These include not least the process industry and the oil & gas industry. This also applies across industries to the energy supply of factories or production plants, for example. Industrial customers are also increasingly demanding complete solutions.

What is Happening Now:

We are developing MAN Energy Solutions’ industrial supply businesses as a competitive supplier – for example of reliable and efficient “spot-on” turbomachinery solutions – focusing on volume segments and new applications that benefit from decarbonization. In doing this, we focus on unique technologies, customer proximity and excellent cooperation.

Growth Areas:

- Growth in four volume segments: upstream, midstream, refineries and power generation
- Expansion of our range of solutions and focus on applications that benefit from decarbonization.
- Increase in profitability (with at least the same market position) in eight strong niche segments.

Energy for Tomorrow

What it depends on now: Complete solutions that combine thermal power plants with renewable energies and storage solutions.





Digital Opportunities

Data from our technologies, which can be generated with the help of intelligent software, enable new business models.

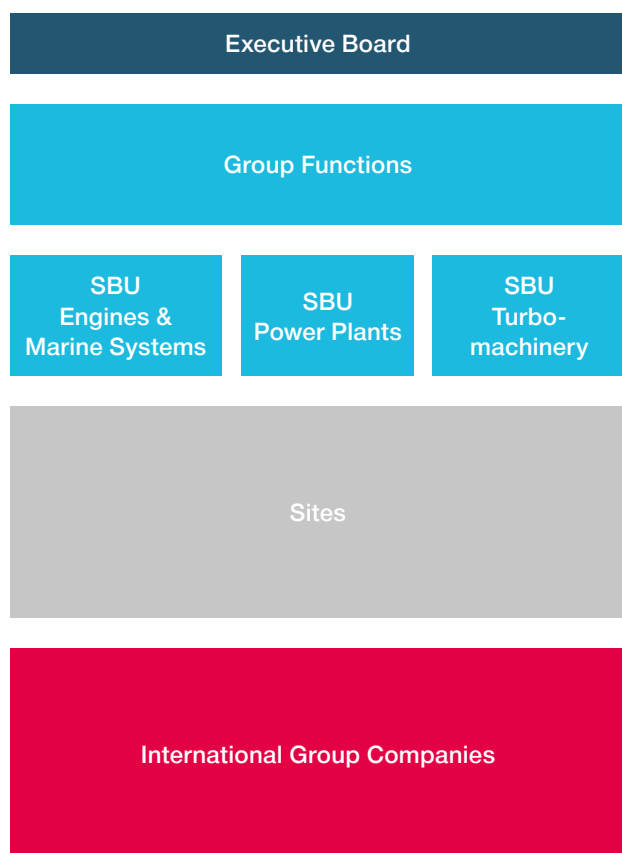
Marine in Flux

Whether alternative fuels or hybrid marine propulsion solutions: MAN Energy Solutions is a pioneer of the “Maritime Energy Transition”.



Profile

Organizational Structure



— The four-member Executive Board of MAN Energy Solutions SE can be found on page 19.

Group Functions are central functions such as Legal, IT, Finance or Communications & Marketing, which support the operational business throughout the Group.

The core of the business is formed by the three Strategic Business Units (SBUs), Engines & Marine Systems, Power Plants and Turbomachinery.

MAN Energy Solutions has 14 production sites: Augsburg, Oberhausen, Hamburg, Berlin, Deggendorf (Germany), Copenhagen, Frederikshavn, Holeby (Denmark), Zurich (Switzerland), Saint-Nazaire (France), Velká Bíteš (Czech Republic), Aurangabad, Bangalore (India) and Changzhou (China).

The global sales and after-sales organization consists primarily of international subsidiaries (International Group Companies). If one adds to this the service centers and representative offices of sales partners, MAN Energy Solutions is represented at more than 120 locations worldwide. —



Worldwide more than

120

Locations

MAN Energy Solutions SE Executive Board



Dr. Uwe Lauber
Chief Executive Officer
Chief Technology Officer



Wayne Jones OBE
Chief Sales Officer



Jürgen Klöpffer
Chief Financial Officer
(as of June 1, 2020)



Martin Rosik
Chief Human Resources Officer

**MAN Energy Solutions**

A Strong Brand – since 1758

— The MAN Energy Solutions brand is the result of a strategic realignment of the company formerly known as MAN Diesel & Turbo and belonging to the Volkswagen Group. This realignment aims to expand the product portfolio, already consisting of large engines and turbomachinery, to include hybrid, storage and digital service technologies. By 2030, commercial operations in sustainable technologies and solutions will have been expanded to become the central pillar of revenue, thus contributing to the decarbonization of industry and society and to the fulfillment of the Paris Climate Treaty.

The MAN Energy Solutions brand may still be young, but its willingness to tread new ground is by no means new.

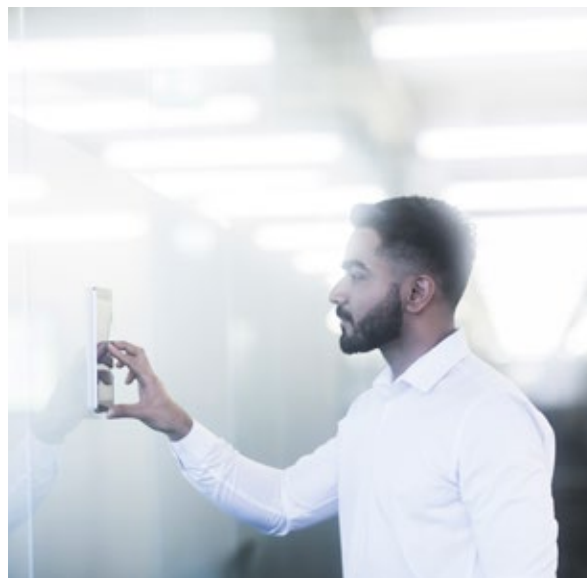
Since 1758, MAN Energy Solutions, including all its predecessor brands and companies, has been successful above all because the company was willing and able to throw out the old and see the new as an opportunity. Beginning as the nucleus of the iron and steel industry in the Ruhr valley and then experiencing a historical high-point in the industry with the invention of the diesel engine at the company's headquarter plant in Augsburg, it will now be continued, in line with the times and the market, with ETES (Electro-Thermal Energy Storage), Power-to-X or battery-hybrid ship propulsion solutions – to name just three of the new offerings. Reliable continuity and agile disruption need not be contradictions: MAN Energy Solutions has been proving this for over 260 years.

Economic Development

The world economy and global trade grew again in the reporting year. However, it was above all the trade distortions and Brexit and its unclear consequences that created uncertainty. Under these conditions, MAN Energy Solutions Group's business performed well in terms of volumes. MAN Energy Solutions Group's 2019 revenue was €3 462 million, 10.7 % above the level of the previous year (2018: €3 128 million). The global markets in which MAN Energy Solutions SE operates varied in 2019. The marine market was significantly lower than the previous year's level due to economic uncertainties such as the trade dispute between China and the USA as well as legal environmental requirements, only individual specialty markets were the exception to this. The market for power generation followed the positive development of the previous year, with the trend towards gas applications continuing unchanged. The market for turbomachines improved significantly in 2019, with the basic materials, oil, gas and process industries in particular starting to pick up after several years of restrained ordering activity. In total, the incoming orders in 2019 were €3 804 million, up 9.1 % from the previous year (€3 487 million). Further information on economic developments is contained in the 2019 Annual Report of Volkswagen AG.

Investments

During the fiscal year, MAN Energy Solutions Group invested €161 million (2018: €140 million). Investments in property, plant and equipment increased, while investments in intangible assets remained at the previous year's level. In view of the difficult economic situation, we are examining investment projects particularly critically and prioritizing them accordingly. We are deliberately maintaining the necessary investments that support long-term growth and are suitable for improving operating efficiency.



Research and Development

Notwithstanding the challenging economic environment, MAN Energy Solutions Group's R&D expenditures in 2019 amounted to €205 million or 5.9 % of annual sales and were thus at the level of the previous year in absolute terms. The focus was on developing a future-oriented product portfolio as part of our strategic orientation as a provider of sustainable energy solutions.

Participation of Volkswagen AG in MAN Energy Solutions SE

Effective as of December 31, 2018, MAN Energy Solutions SE was sold by MAN SE to a subsidiary of Volkswagen AG. At that date, control of MAN Energy Solutions SE passed to the buyer. As part of the transfer, the control and profit and loss transfer agreement previously in place between MAN SE as the controlling company and MAN Energy Solutions SE was terminated by mutual consent at midnight on December 31, 2018. Effective as of January 1, 2019, a new control and profit and loss transfer agreement was concluded between Volkswagen Vermögensverwaltungs-GmbH as the controlling company and MAN Energy Solutions SE. —

Corporate Responsibility: Strategy and Management

CR Governance

MAN Energy Solutions sees corporate governance as a binding regulatory framework benefitting all of those involved in our work and business processes. This allows us to face challenges: Our business environment is currently undergoing lasting change – due to the opportunities offered by digitization and electrification, the triumphant advance of renewable energies and groundbreaking political decisions, such as the Paris Climate Convention and related legal requirements.

CR: Part of the Corporate Strategy

— “Corporate responsibility is an integral part of MAN Energy Solutions’ corporate strategy and a response to our most important global and business challenges”, says Ralf Thon, Head of Corporate Responsibility. For us, sustainability means identifying opportunities and risks to sustainable development for our business success and acting proactively. We consciously take up the expectations directed at us by our customers, politics and society and offer concrete answers. For us, people are the focal point. At the same time, we assume responsibility along our entire value chain. The four cornerstones of our corporate responsibility strategy are integrity, people, production and product.

CR: Top Management Task

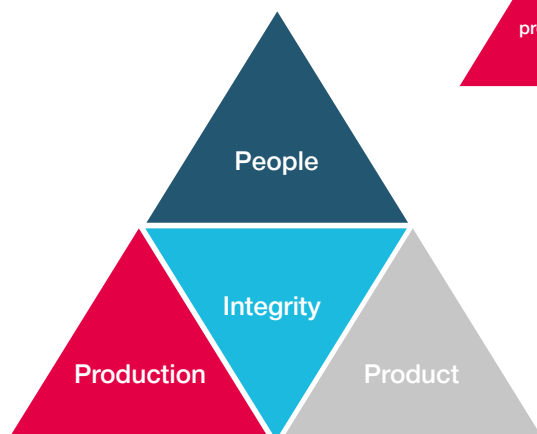
As a signatory, our CR strategy is based on the world’s most important and largest CR initiative: the UN Global Compact. The ten universally recognized principles on human rights, labor standards, environmental protection and anti-corruption also guide our actions. In addition, our Code of Conduct provides binding internal guidelines on how we meet our social responsibilities. We see corporate responsibility as a top management task, with overall responsibility resting with the CEO.

“Sustainable production and development are efforts to meet the needs of the present without compromising the ability of future generations to meet their own needs”.

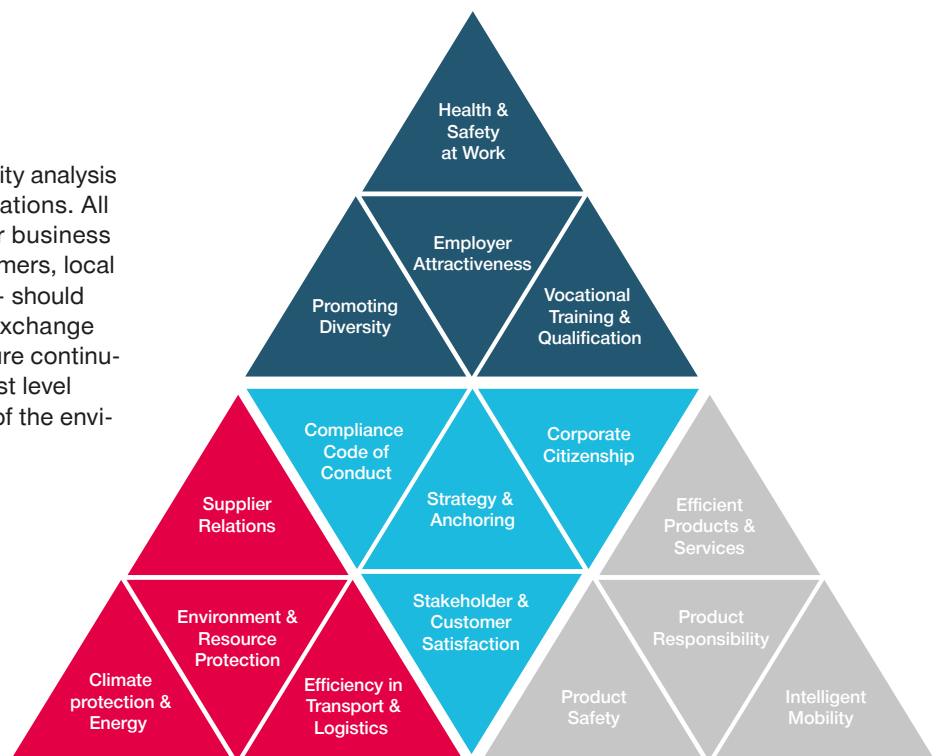
Ralf Thon, Head of Corporate Responsibility

Materiality Dialogue 2020

A materiality dialogue including a materiality analysis is being planned at various company locations. All those involved in and contributing to our business processes – employees, suppliers, customers, local residents and representatives of society – should meet regularly at the “Round Table” to exchange ideas and information. The aim is to ensure continuous communication along with the highest level of transparency, including on the topics of the environment and social responsibility.



CR Strategy – Cornerstones



CR Strategy – Fields of Action

Our KPIs

For each sphere of activity we have installed KPIs (Key Performance Indicators) as targets, which are under continuous review and adjustment in terms of their life cycle. Responsibility towards society and the environment, involvement and participation of all stakeholders and transparency are always our top priorities. —

Integrity

Strategy and Anchoring

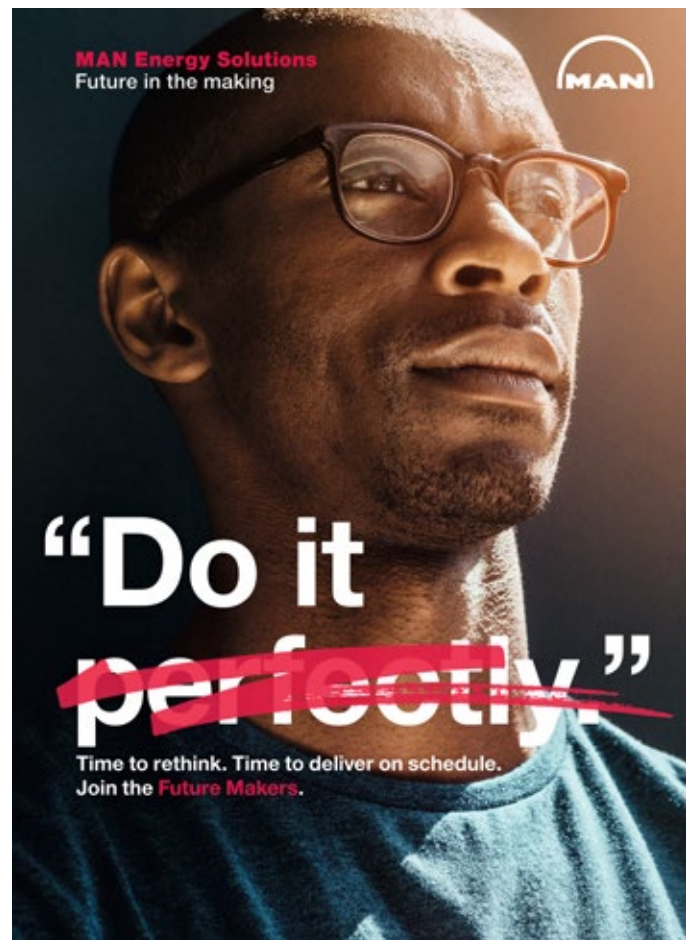
Internal Communication: Strategy Roadshow

— The Executive Board of MAN Energy Solutions presented the strategy for the first time at a management conference in November 2017. It had been drawn up under intensive cooperation between the managers and specialists of the business units and corporate functions. At the management conference, strategy booklets containing the most important facts and key information were first handed out to the managers, and shortly afterwards this was extended to all employees. A further key measure in creating early acceptance for the strategy among the entire workforce was the implementation of a Strategy Roadshow into the 2019 reporting year. The aim of the conference was to serve as a discussion platform to enable an open exchange about the strategy, to drum up enthusiasm for the strategy in the participants and to inform them about its contents. The Strategy Roadshow stopped at around 40 national and international MAN Energy Solutions sites and directly reached more than 3 600 employees at all levels. To set the “Tone from the Top” and as a sign of the high importance of the internal anchoring process, one member of the Executive Board was present at each of these events. Of course, the regular corporate media, such as the employee newspaper or the intranet, were also used as channels to take the workforce along in the transformation – for example, via FAQs, interviews, videos or even quizzes. In 2019, a major focus was on two poster campaigns that are still ongoing – one to promote the new product solutions and one to encourage employees in the change under the motto “Join the Future Makers”.

External Communication: Rebranding

In order to bring the significance of the new strategy closer to external stakeholders as well, we adopted a new brand identity in mid-2018. Key elements of this rebranding were the development of a new, fresher corporate design, the changing of the name from MAN Diesel & Turbo to MAN Energy Solutions and the establishment of the claim “Future in the making”. Media representatives were invited to launch events at the major company locations that were instituting the rebranding and familiarized them with the objectives of the new strategy. Our sales approach is also in line with the new strategy and the new brand in terms of content and visuals. This applies both to conventional marketing formats, such as brochures, films or trade fairs, and to digital formats, which – following the strategic theme of digitization – are becoming increasingly important. The rebranding goes hand in hand with a repositioning of the company – from component supplier MAN Diesel & Turbo to MAN Energy Solutions, a provider of climate-friendly and digitally supported technologies and solutions – which is also evident from the changed representation of the company in industry committees or other bodies representing its interests. The measures for the worldwide transition to both the new corporate design and the new company name were largely complete in 2019.

A corporate strategy can only be anchored and implemented in the long term if it finds resonance internally and externally. This requires not only that the strategy is correctly aligned, but also that it is continuously communicated, refined and improved in a comprehensible and assuring way. Moreover, early success in implementation is necessary for the strategy to take shape as a future plan and deliver the expected results. This chapter deals with the measures that MAN Energy Solutions has taken to establish the new strategy both within and outside the company, and what early successes have been achieved in this transformation.



Continuous Development: Fast Track

Another factor in successfully anchoring the strategy is pursuing continuous development even after its initial creation. At MAN Energy Solutions, it was and is the task of the business units to refine details of the strategy and, where necessary, improve it. This is accompanied by regular monitoring of the implementation measures. The fact that we regarded the strategy as flexibly adaptable from the beginning also offered the opportunity to closely involve MAN Energy Solutions' workforce in the development process and motivate them to make active contributions. One of the most important measures in this context is the ongoing Fast Track Program, which gives employees the opportunity to pursue their ideas for implementing the strategy in a very concrete way, even if they deviate from daily business. The best ideas from Fast Track could be implemented after a few months with the support of agile mentors.

"In addition to the Strategy Roadshow, the establishment of the Fast Track Program was certainly essential in anchoring the strategy within the company", said Dr. Fabian Kley, Head of Group Strategy and M&A. "Strategy implementation can only be successful if employees have internalized the core of the strategy and are given opportunities to actively shape the path forward."

Early Success: Project Examples

Although communication, employee participation and regular review are important, a sustainable strategy anchoring depends equally on early implementation success. This also applies to the strategy of MAN Energy Solutions. Taken from numerous projects, the following success stories reflect the successes that many others have shared (see also pages 58 to 59):

Shipping

The container ship "Wes Amelie", owned by the German shipping company Wessels, is the first ship in the world to be converted from a conventional propulsion engine to a multi-fuel engine that can be operated with gas (LNG), among other things. This retrofit was carried out by the After-Sales Organization of MAN Energy Solutions, which operates on the market under the brand name MAN PrimeServ. When in gas operating mode, the engine emits 99 % less sulfur oxides, 90 % less particulates, 80 % less nitrogen oxides and up to 20 % less CO₂.

In 2019, the next step towards being able to operate the "Wes Amelie" as environmentally friendly as possible was announced: from this year on "green gas" will be used as fuel for the ship. Known as liquefied synthetic natural gas (SNG), it is obtained by using renewable energies and is therefore climate-neutral. In order to bring about the "Maritime Energy Transition" that MAN Energy Solutions has been pushing for, the company not only offers retrofits for ships in existing fleets, but also alternative solutions for new projects – such as battery hybrid propulsion or engines that can be run on fuels other than natural gas, such as LPG, methanol or ammonia.

In the year under review, MAN Energy Solutions also joined the "Getting to Zero Coalition", a partnership between the Global Maritime Forum, the Friends of the Ocean Actions and the World Economic Forum, which is committed to the development of zero-emission ships by 2030.



Energy

In 2019, MAN Energy Solutions was commissioned to build two power plants in Chemnitz with a total of twelve gas engines to replace a local coal-fired power plant. The high-efficiency CHP plants (combined heat and power), which are scheduled to come into operation in 2022, will produce 150 MW of electrical and 130 MW of thermal output. Compared to the existing power plant, they will emit around 60 % less CO₂. We also received similar orders for public utilities in other German cities – such as Frankfurt (Oder), Jena or Schwäbisch Hall – in the year under review. Even though gas-fired power plants can be operated not only economically but also in a very climate-friendly and, in the long term, even climate-neutral manner, we are also working on alternative technologies that – generally based on renewable energies – will further improve the environmental compatibility of the energy supply. This includes various energy storage technologies or the development and further optimization of intelligent energy management systems, which can be used to flexibly and precisely control local power grids, so-called microgrids.

We also see great potential in Power-to-X technology, in which electricity generated from renewable sources can be converted into hydrogen through the process of electrolysis (in 2019 we acquired a 40 % stake in the electrolysis technology company H-TEC SYSTEMS) and into various synthetic fuels through subsequent methanation (methanation reactors are manufactured at our Deggendorf site). In the year under review, MAN Energy Solutions joined the Hydrogen Alliance Bavaria together with other players from politics, business and science with the aim of achieving the use of hydrogen in broad-based practical applications.

Industry

In the year under review, MAN Energy Solutions was awarded the contract for a FEED (Front-End Engineering and Design) study on underwater compressor systems. Starting this year, such systems will help to produce gas for the customer Chevron Australia in the so-called Jansz-Lo field about 200 kilometers off the northwest coast of Australia and at a depth of 1 350 meters underwater. MAN Energy Solutions had already supplied the underwater compressor technology for the world's first plant of this kind, which is being used at the Åsgard field off Norway, and it is operating extremely reliably. The special feature of these projects is that the operation and monitoring of the compressors and the entire plant on the sea bed can only be carried out remotely. As a result, our customers already expect progressive digitization, the second focus of MAN Energy Solutions' strategy, but the trend towards using machine-generated data will accelerate further in the future – for monitoring and maintenance and for new business models.

In 2019, we also introduced the digital platform MAN CEON, which is used to collect and evaluate operational and sensor data. The system enables 24/7 real-time monitoring, integrates data from MAN engines and machines, including their operating environment, and uses intelligent analysis tools for evaluation and prediction. MAN CEON forms the digital infrastructure for PrimeServ Assist, MAN Energy Solutions' service solution for proactive remote monitoring and optimization. MAN CEON and PrimeServ Assist are of course used in all markets served by MAN Energy Solutions – including in the shipping and energy sectors in addition to industry.

Integrity and Compliance

As a globally active company with many areas of operation, MAN Energy Solutions bears social responsibility towards customers, employees, investors and the public.

This social responsibility includes complying with the applicable laws at all times and in all places, respecting basic ethical values and acting sustainably.

Integrity and compliance are therefore a fundamental part of MAN Energy Solutions' corporate strategy and are lived equally at all levels of the Group and by all employees, that is, the Executive Board, managers and every single employee.

In addition to integrity, the MAN Energy Solutions Integrity and Compliance Program deals with white-collar crime, in particular anti-corruption, money laundering prevention and antitrust law.

“Compliance is part of our corporate DNA.”

Dr. Uwe Lauber, Chief Executive Officer

Elements of the Integrity and Compliance Program

— MAN Energy Solutions has a Group-wide Integrity and Compliance Program that prevents compliance violations (Prevention), uncovers any compliance violations that occur despite preventive measures as quickly as possible (Detection), and remedies these compliance violations immediately and efficiently once they are discovered (Response). Core elements are:

Code of Conduct

MAN Energy Solutions' Code of Conduct applies equally to all employees, that is, the Executive Board, managers and each individual employee. The Code of Conduct forms the core of MAN Energy Solutions' corporate culture and provides concrete and binding guidelines for situations in which employees must pay particular attention to responsible conduct.

Communication

The Compliance Organization communicates continuously at all levels of the company. Integrity and compliance issues are regularly communicated at MAN Energy Solutions through internal media such as newsletters, employee magazines and the intranet. In addition, the compliance organization informs and advises managers and other employees through training, the helpdesk service, and at internal conferences and meetings.

Compliance Guidelines

MAN Energy Solutions has guidelines that apply throughout the Group, particularly on the compliance issues of anti-corruption, antitrust law, money laundering prevention, and integrity checks on business partners. These guidelines contain uniform and binding guidelines for all employees throughout the Group.

Compliance Training

MAN Energy Solutions has a training program on integrity and compliance for all employees worldwide. Various training methods and formats are used, ranging from e-learning modules to classroom and video conferencing training. The most important training content includes the Code of Conduct, information on the MAN Energy Solutions Compliance Organization and knowledge on the topics of white-collar crime, anti-corruption, antitrust law and money laundering prevention.

Whistleblower System

MAN Energy Solutions offers all, including employees, customers, suppliers and other business partners, a secure whistleblower system for reporting potential compliance violations. This allows such information to be exchanged anonymously, securely and confidentially at any time and from anywhere in the world. The information is forwarded to an independent body for investigation. All whistleblowers acting in good faith are protected from discrimination and retaliation.

You can find more about the whistleblower system here:
www.volkswagenag.com/hinweis.

Tone from the Top

The Executive Board of MAN Energy Solutions is aware of its responsibility for integrity and compliance and takes this responsibility very seriously. The Executive Board and managers of MAN Energy Solutions regard integrity and compliance as an integral part of the corporate strategy. —

Interacting with One Another

Stakeholder Dialogue and Customer Satisfaction

Stakeholder

MAN Energy Solutions is actively working on global solutions for the future: We transform energy into sustainable progress and prosperity in order to set standards together with our partners on the way to a climate-neutral world. Our strategy focuses on total solutions rather than components. To this end, we make targeted use of the opportunities offered by digitization and develop sustainable solutions for the decarbonization of industry and society. We are in regular dialogue with our stakeholders on these issues. After all, the expectations of the economy, politics and society are of fundamental importance for our business success.

Memberships and Initiatives

We support dialogue and the exchange of interests between business, politics and society and are a member of various associations, organizations and initiatives – at federal and EU level, internationally and locally. MAN Energy Solutions also contributes its expertise and specialist knowledge to the respective technical and management committees.

Some of our most important memberships in associations and initiatives are:

- VDMA, Verband Deutscher Maschinen- und Anlagenbau e. V. (Mechanical Engineering Industry Association)
- BVES, Bundesverband Energiespeicher (German Energy Storage Association)
- VSM, Verband für Schiffbau und Meerestechnik (Association for Shipbuilding and Marine Technology)
- Maritime LNG Plattform e. V.
- Danske Maritime (Danish Maritime)
- CIMAC, International Council on Combustion Engines e. V.
- SEA/LNG
- Getting to Zero Coalition of the Global Maritime Forum

Our Code of Conduct

The principles of our lobbying activities are set out in a Code of Conduct that applies throughout the Group. In it, we expressly declare our commitment to political neutrality and the open presentation of our positions. The MAN Energy Solutions Group policy on handling donations and sponsoring measures excludes politically motivated contributions, such as donations to political parties, party-related institutions or politicians.

Customer Satisfaction

MAN Energy Solutions conducts a comprehensive Customer Satisfaction Monitoring survey every two years as part of an online survey. “In 2019, we interviewed 1 100 customers via anonymous questionnaire, 400 of whom were willing to have a personal conversation with one of our employees,” reports Jörg Schneider, Head of Marketing & Brand at MAN Energy Solutions. The newly installed Customer Relations Management System (CRM) provided the necessary database, in compliance with the relevant data protection regulations of course. The result on customer retention was very pleasing, rising by 3 % points from 2017 to 2019. Customers also appreciate the quality of the products, the high intercultural and technical skills of the employees and the company’s excellent service. About half of our customers are already aware of our new corporate strategy as a provider of complete solutions and rate the reorientation in the interview survey as “important/very important” for their business.



What Our Customers Are Saying

“Customer retention climbed 3 % points in 2019, an excellent result.”

Jörg Schneider, Head of Marketing & Brand

Customer Satisfaction Monitoring 2019

Product Quality	Excellent/very good
Quality of products	58 %
Product design	53 %
Quality of spare parts	57 %
Employees	
Friendliness/service	65 %
Intercultural skills	53 %
Technical know-how	
Sales department	53 %
Project teams	56 %

Our Contribution to the World

Corporate Citizenship

Social commitment and responsibility is an integral part of MAN Energy Solutions' corporate culture. We have been closely connected with various partners worldwide for a long time.

Together for Social Integration

— In the social sphere, MAN Energy Solutions has been supporting the international aid organization "Mercy Ships" since 2010, which brings free medical aid to the poorest of the poor. Mercy Ships operates the "Africa Mercy", the largest private hospital ship in the world. With a permanent crew of over 400 volunteers, Mercy Ships is funded by donations. Equipment from MAN Energy Solutions is being used for the power supply on board and the propulsion of the hospital ship: Four MAN 5L21/31 GenSets supply the entire ship and the operating rooms on board with electricity. Another four engines from MAN Energy Solutions drive the ship's propeller. By the end of 2019, we had supplied spare parts and technical service worth €875 000 free of charge. For 2020, we are making a further €375 000 available. Our cooperation is guided by the idea of "Powering hope & healing". For ten months at a time, "Mercy Ships" anchors at mission countries that are considered the poorest countries in the world according to the United Nations Human Development Index.

A full hospital on board the "Africa Mercy"

- 5 operating rooms
- 82 intensive care beds
- X-ray machines, computer tomograph
- Medical laboratory
- Pharmacy
- Remote diagnosis facility

Mercy Ships Onshore Facilities in 2019

- Dental Clinic: 8 858 patients; Ponseti treatments: Method for the non-invasive correction of clubfeet in 25 children
- 1 400 participants took part in advanced training courses for specialist staff such as surgeons, anesthesiologists, nurses etc.

Surgical interventions in 2019 on board the "Africa Mercy"

	Patients
Orthopedic surgery	83
Oral and maxillofacial surgery	386
Eye surgery	532
Plastic surgery	118
General surgery	468
Gynecological surgery	49

“People live on the margins of society because of their diseases. We want to contribute towards the integration of these people back into social life and towards positive health care developments.”

Melanie Perkl, Manager Sponsorships/Donations



**Helping people help themselves:
Mercy Ships takes a sustainable approach**

Medical personnel are trained and receive continuing education on site. Hospital areas are being renovated and equipped, the medical infrastructure is being improved. Farmers receive training in cultivation methods to improve nutrition and thus the health of the population in the long term. The Hospital Out Patient Extension Center (HOPE Center) ashore is another recovery center for before and after surgery on the ship. Here patients receive clean beds, meals, attentive care and, above all, hope for a new healthier stage of life. The goal of Mercy Ships' work is to bring about positive change for the people and medical infrastructure in the countries of operation.

Promotion of Education, Research and Innovative Capacity

MAN Energy Solutions cooperates with various universities around the world, particularly in the area of research & development or within the framework of scholarships. As a sponsor of the MINT performance competition “Jugend forscht”, MAN Energy Solutions also promotes imaginativeness, inventive talent and innovative capacity as building blocks of sustainable economic development and prosperity. Since the beginning of 2019, MAN Energy Solutions Oberhausen has been supporting the real learning laboratory “FabLab” as a partner of the Ruhr West University of Applied Sciences. In cooperation with schools and the diakonia, educational and research formats are developed for various target groups, such as school children, people with disabilities or refugees.

Unleashing (Cultural) Energy Together

Culture is creativity, the basis for lateral thinking, imaginativeness, innovative spirit – all that is needed for new approaches to solving current and future tasks of a company. Since 2012, MAN Energy Solutions has been the main sponsor of the Augsburg Philharmonic Orchestra, the orchestra of the Augsburg State Theater. As part of our partnership under the motto “Unleashing Energy Together”, we are developing new formats together with the musicians, such as concerts on the factory premises or a classical open-air concert, workshops on the topics of leadership with the General Music Director or on presence on the theater stage. In addition, a mixed ensemble, consisting of employees of MAN Energy Solutions and professional musicians, gave a concert for 400 enthusiastic listeners. The proceeds went to the Inclusion Orchestra of the Sing- und Musikschule Mozartstadt Augsburg.





Local Social Commitment in the Regions

Promoting Health and Strengthening Team Spirit

In a show of Olympic spirit, professionals and amateurs alike took part in the so-called Olympic Marathon in spring 2019, once again sponsored by MAN Energy Solutions Greece.

Diversity is Wealth for All

MAN Energy Solutions France is a partner of the swimming club “Handi’Nat Région Nazairienne” for athletes with physical disabilities and finances various competitions and their participants.

Against All Forms of Violence for a Secure Future

Catalyst India is a non-profit foundation for victims of human trafficking and sexual abuse. MAN Energy Solutions India is a partner of the non-governmental organization that provides those in difficult situations secure housing and legal assistance to those affected and helps them to build a safe future. —



People

What Makes an Attractive Company?

Many facets contribute to how attractive an employer is to work for. In addition to an appropriate salary and a good working atmosphere, there is something else that is very important for Jörg Widemann, Head of Human Resources Innovation & Projects: “a meaningful corporate purpose.” MAN Energy Solutions’ mission and strategy offer this. Being a force on the road towards a carbon-free global economy is of the highest social relevance. “Our HR strategy aims to accompany this transformation process. We are looking for people who are willing to work on this with conviction and enthusiasm.”

A number of other factors make MAN Energy Solutions a top employer: exemplary education and training, individual development paths and programs, new forms of cooperation, a comprehensive health program and attractive social benefits.

Employee Structure¹

	<input checked="" type="checkbox"/> 2019	2018	2017
Permanent staff	14 441	14 029	13 650
of which female	2 158	2 070	2 028
of which male	12 283	11 959	11 622
of which part-time staff	508	465	437
of which female	330	307	288
of which male	178	158	149
of which temporary staff	533	506	342
of which female	86	83	58
of which male	447	423	284
Apprentices	569	542	541
of which female	94	94	100
of which male	475	448	441
of which in Germany	355	346	354
Staff in partial retirement passive phase	188	156	127
Staff	15 198	14 727	14 318
Temporary workers	491	494	381

¹ Number at the end of each year

Employer Attractiveness

Internationality

As a global player with locations in some 120 countries, we offer unique development opportunities around the globe. Intercultural training is essential to get in shape for cross-national cooperation.

Employees of MAN Energy Solutions

Value-adding workforce	<input checked="" type="checkbox"/>	2019	2018	2017
Total		14 932	14 523	14 031
Domestic		7 526	7 328	7 119
Foreign		7 406	7 195	6 912
Foreign share in %		49.6	49.5	49.3

The MAN Energy Solutions “Family”

Despite our international orientation, we are characterized by a family character, which is reflected in more than just the long-standing loyalty of many employees. Some of our employees are second or even third generation and thus combine tradition and progress across generations.

Active Participation

We encourage employees to actively shape their work by promoting new ways of working and forms of cooperation. Since 2017, some 800 participants have taken advantage of our agile qualification portfolio. The idea of “Agile Working” was further promoted by the publication of a corresponding guide in 2019. However, employees can also make their own project proposals and take responsibility for them – even outside their own area of activity. In 2019, in cooperation with the Fabrikations-Labor (FabLab) at the Ruhr West University of Applied Sciences, 23 apprentices were able to implement an exciting practical project outside the curriculum under the motto “Digitization in Education”.

Promoting Young Talent

In cooperation with universities, we offer a total of six German scholarships in Deggendorf, Berlin and Mülheim/Ruhr. MAN Energy Solutions Oberhausen has been a sponsor of the Ruhr West University of Applied Sciences (HRW) since the beginning of 2019 and has been a member of the board of the sponsor-

ship association since November 2019. In 2019, the €60 000 subsidy was used mainly for the planned relocation, expansion and operation of the new FabLab at the Prosper Haniel site. The prototype workshop, which will then cover more than 600 m², is scheduled to open in mid-2020 and will be available to everyone in the Ruhr valley as a real-world laboratory and learning environment. MAN employees can use the laboratory both professionally and privately – with their children, for example.

Compatibility of Work and Family Life

The fact that parental leave is also taken by men is part of the norm at MAN Energy Solutions, as is the offer to work at various part-time levels and to structure working hours flexibly. Employees also have the option of working from their home office. Rest days set by the company ensure that employees can balance so called “time accounts” that have built up.

In Augsburg, 90 % of a day-care center close to the company is reserved for employees’ children. We also provide childcare for the children during the summer holidays.

Employee Survey

In 2019, employees filled out an anonymous survey that covered a wide range of areas, further involving them in the development of the company. 84 % of our world-wide employees took part in the “mood barometer” in 2019 (2018: 83 %). That amounts to over 11 000 employees. The topics “Attractive Employer”, “Integrity”, “Openness”, “Personal Fitness” and “Enjoyable Work” – with a score of over 80 on a scale of 0 to 100 – received the best ratings.

Health Program

MAN Energy Solutions promotes the health of its employees through regular programs, offers and special campaigns. These include sports and relaxation courses, a comprehensive check-up, flu and travel vaccinations, non-smoking seminars and bonus programs that promote health-conscious behavior. Free fitness rooms are available to employees at the Augsburg, Oberhausen and Copenhagen locations, for example.



“We’re looking for people who are attracted to our mission: Being a force on the road towards a carbon-free world.”

Jörg Widemann, Head of Human Resources Innovation & Projects

Company Pension Scheme

As a socially responsible employer, MAN Energy Solutions supports its domestic employees in Germany in building up a supplementary pension plan for retirement by offering an attractive company pension scheme that also provides risk protection in the event of disability or death during active employment. Employees can supplement remuneration-dependent basic contributions through deferred compensation, which are again subsidized by the employer according to the collective bargaining agreement. Employees at foreign locations receive similar benefits from pension plans or contributions to external pension funds, depending on the specifics of the country.

Age Structure¹

	<input checked="" type="checkbox"/>	2019	2018	2017
Total		14 441	14 029	13 650
<= 30		2 032	1 633	1 226
31–40		4 505	4 347	4 133
41–50		3 743	3 687	3 662
51–60		3 247	3 231	3 241
> 60		914	1 131	1 388

¹ only permanent staff

Responsibility / Secure Jobs

With the strategic development of our company into a provider of CO₂-optimized products and energy solutions, we are assuming responsibility for the environmentally friendly use of resources and thus for sustainable jobs. Above-average investments in product development and continuously higher productivity ensure the company’s competitiveness. The necessary implementation measures are always taken in consultation with the relevant employee representatives, thus achieving a balance between economic efficiency and job security.

Employee Structure

The total workforce is comprised of active employees (permanent staff), employees in the partial retirement phase and apprentices, but not temporary workers. As of December 31, 2019, MAN Energy Solutions employed 15 198 employees (2018: 14 727) in around 120 countries. The number of employees thus increased by 471 within the past year. The ratio of staff employed in Germany and abroad changed only marginally in the year under review. —

— No one should be discriminated against on the basis of their age, gender, cultural background, health condition or sexual orientation – that we promise. “However, we don’t just foster a deliberate attitude towards diversity out of a moral and ethical responsibility”, says Jörg Widemann, Head of Human Resources Innovation & Projects. “Rather, we see diversity as a valuable opportunity: Diversity in ways of thinking, skills and personal experience promotes creativity and innovation”. We therefore see it as our task to ensure equal opportunities and to create an environment that promotes the individuality of each person in the interests of the company.

Training for Managers

At MAN Energy Solutions, the issue of diversity is anchored both in our internal guidelines, such as in the Code of Conduct and in the Group Policies as the normative framework for our actions. It is the responsibility of each and every one of us to really live the diversity we seek. However, this task especially falls on management. That is why, in early 2020, we started, initially in Germany and Denmark, with mandatory training for all managers.

We Promote Individuality – Regardless of...

... Nationality and Cultural Identity

As an internationally oriented company, cooperation between people of different nationalities and cultures is normal for us. We use a wide variety of formats to leverage the associated potential. Intercultural training and language instruction are an integral part of what our seminars offer.

... Health Condition

The company’s management, joint works council and representative body for severely disabled employees all see inclusion as a systematic approach for promoting diversity and equal opportunities. Inclusion at the Augsburg site can be experienced and demonstrated, for example, through workplace redesign, barrier-free communication with deaf employees or mobility aids.

... Gender

When filling vacancies, we pay particular attention to the fair inclusion of women, among other things. Our participation in the HerCareer 2019 trade fair for the first time and our regular participation in Girls’ Day are aimed at attracting potential female employees and at inspiring girls to take up occupa-



Diversity Opens up Opportunities

Promoting Diversity

tions that are considered typically male. This is also reflected in our HR marketing campaigns and social media activities. For example, female apprentices share their experiences from their job as a machinist.

Women in Management Positions in %

	<input checked="" type="checkbox"/> 2019	2018	2017
Proportion of women as permanent staff	14.9	14.8	14.9
Proportion of women at the management level	10.6	10.8	10.6
Proportion of women in upper-level management	4.6	4.2	3.7
Proportion of women in top-level management	0	0	0

While worldwide the ratio of women at the 2nd reporting level (management level) has remained relatively constant, the ratio at the 1st reporting level (upper-level management) has increased. In Germany, on the other hand, the ratio at the 1st reporting level has decreased. With a ratio of 3.9 % in 2019, we are below our self-imposed target quota of 7.5 % for 2021. However, at the 2nd reporting level, Germany currently (as of 12/2019) has a ratio of 12.7 %, which is above the target quota of 11.6 % in 2021.

... Sexual Orientation

In the area of sexual orientation, we have decided to send a clear signal by sponsoring the next Christopher Street Day in Augsburg.

On the basis of the experience gained from the management training courses, we will continue to develop diversity and all its facets, both conceptually and strategically, in order to leverage the associated potential. —

Safety First

Health and Safety at Work



As a company and as part of society, MAN Energy Solutions faces up to global challenges that have a significant impact on our sustainability. Occupational safety, health, climate and environmental protection, resource conservation, demographic change, globalization, urbanization, energy supply and transport were identified as trends.

— “They all influence our business areas to a particularly high degree,” says Dietmar Pinkernell, Head of Integrated Management System. By doing business responsibly in a changing world, MAN Energy Solutions makes an important contribution to the sustainable development of society and the environment.

HSE Responsibility

Our headquarters in Augsburg assumes the staff function for Health, Safety & Environment (HSE), regulates framework conditions and defines relevant role-specific guidelines for the respective areas of responsibility of our company. In addition, site-related HSE processes are audited, work areas and facilities are inspected and evaluated, and work accidents or environmental incidents are analyzed using suitable parameters. By consistently eliminating deficits and tracking improvement measures, including effectiveness monitoring, we are able to continuously optimize the protection of employees and the environment. We avoid accidents at work, occupational illnesses and environmental incidents by acting in a safe and environmentally friendly manner with the aim of increasing customer satisfaction in the long term. In the area of occupational safety and environmental protection, we successfully implement programs for resource efficiency and risk and pollution reduction.

Guidelines on Occupational Health and Safety

Our employees make an important contribution to the success of the company. Therefore, occupational health and safety are of the utmost importance and part of our corporate responsibility, laid down in seven guidelines. At all company locations, occupational medical examinations are part of the HSE program to prevent employee illness.

“PrimeServ” Certification

At MAN Energy Solutions, certification of the “PrimeServ” service in accordance with SCC (Safety Certification Contractors) plays an important role. This certification of individuals and specific organizational units is the basic prerequisite for contract fulfillment at the customer’s site, especially in the oil and gas industry.

are available to all employees free of charge and almost continuously during working hours. All measures are routinely evaluated and optimized for effectiveness. Our offer is especially focused on apprentices and older employees. International business travelers are also closely supported within a comprehensive examination and consultation program. In addition to pension insurance institutions and health insurance companies, we also cooperate closely with external service providers to ensure the high quality standards. —

“Safety and environmental protection concerns us all!”

Dietmar Pinkernell, Head of Integrated Management System

Training

We ensure the qualification of our employees through training instruction and initiatives that are oriented towards needs, safety and environmental protection. In addition to workplace-oriented training at individual locations, we offer e-learning across locations to raise awareness of occupational safety. We also inform the employees about the importance of safety-oriented work. Dietmar Pinkernell says: “Cooperation across locations and departments is the basis for occupational and environmental protection and a fundamental part of our daily business. In other words: This affects us all!”

Health Program

In addition to full occupational health care for each employee, there is a wide range of measures for workplace health promotion, with a focus on exercise, mental health and addiction prevention. There are also individual comprehensive health checks, the so-called MAN check-ups. These offers

HSE Core Messages

“Safety First”, “Zero Accident”,
“Zero Incident”, “Zero Harm”,
“Zero Impact”

Fit for Life – Health Program 2019

- Health protection
- Movement
- Healthy body, healthy skin
- Seminars
- Nutrition

Work Accidents

	<input checked="" type="checkbox"/>	2019	2018	2017
Work accident resulting in a leave of ≥1 day		147	138	127
Days lost due to accident		1 877	1 525	1 745
Fatal work accident		0	0	0
Accident frequency index – RIF (Recordable Injury Frequency) ^{1 2}		12.4	11.3	12.8

¹ Number of reportable work accidents requiring medical care x 1 million /hours worked

² Figures not audited by PwC

We Are Making the World of Tomorrow

Vocational Training and Qualification

MAN Energy Solutions trains and supports young people in their professional development. Because youth is the future, we are ready for tomorrow today.

Training und Work-Study Program

— We secure outstanding young technical and commercial talent through qualified vocational training anchored in the training centers of MAN Energy Solutions. The largest training location is Augsburg; in 2019, 347 (94 from associated companies) apprentices and work-study students were supervised here by 14 full-time trainers. The other German training locations are Berlin, Hamburg, Oberhausen and Deggendorf. We also provide training at our locations in Denmark, France and Switzerland. At our German training locations, we employed 521 (175 from associated companies) apprentices and work-study students in 2019.

Successfully Shaping the Future

Vocational training at MAN Energy Solutions is a stable foundation on which young people can build a successful career. A skilled team of trainers accompanies the young people as they start their careers. In order to prepare MAN Energy Solutions for the digital future of the working world and to familiarize apprentices and work-study students with the challenges of Industry 4.0, we ensure that they are introduced to relevant content during their training or studies. This is why we consistently invest in new technologies during vocational training.

Social and Intercultural Skills

In addition to technical training, the promotion of social skills through seminars, social cooperation and projects is of great importance. Apprentice exchange programs have been set up to provide intercultural education. "The aim of our work is to train young, talented people who are open-minded and dedicated", says Herbert Huttner, Head of the MAN Energy Solutions Training Center, Augsburg.

Campaigns and Awards

We regularly present our broad and wide range of training opportunities to the public, including at career information fairs, school career information days or at an "open training workshop" such as on Girls' Day. We are a long-standing and valued training partner of the Chambers of Industry and Commerce. In tests we achieve top results in the VW Group, at federal and state levels as well as at the regional level: Two apprentices from MAN Energy Solutions received the VW – Best Apprentice Award for outstanding performance in 2019. Since 2010, we have had six national winners, ten state winners and 116 winners in the Chambers of Industry and Commerce. For the fifth year in 2019, we offered a qualification and entry program for young refugees from regions affected by civil war. This is a way for us to show how important social responsibility is for us.

“The training and promotion of highly qualified junior staff with know-how and fresh ideas is an important corporate strategy for us.”

Herbert Huttner, Head of MAN Energy Solutions Training Center, Augsburg

Training / Work-Study Program

Apprenticeship professions	14
Study programs (part-time with work)	5
Adoption rate	almost 100 %
Ratio of women	12 %
Apprenticeship ratio (Proportion of apprentices/ work-study students to permanent staff)	5 %

Continued Training and Qualification

With digitalization, new generations of employees are moving into the company and changing the requirements for working methods and forms, the working environment and, associated with this, the forms of collaboration, communication and leadership behavior. Therefore, we have developed targeted measures for continued training and qualification.

Strategic and technological innovations and the upheaval in the world of work, driven by digitalization and Industry 4.0, require targeted qualifications. With a focus on future competencies and new requirements, we have optimized our range of qualifications in 2019. The eAcademy, a learning platform for web-based training with over 100 courses, was further expanded. The “New Career@MAN Energy Solutions” program offers specific career opportunities in management, specialist and project management careers. In 2019, the training program for “Agile Working” was newly introduced to support solution-oriented processes.

- Financial investment for qualification, “Continued Training and Supporting Processes” segment: Increase in 2019 of 14.5 % compared to 2018.
- Participation in continued training measures: Increase in 2019 of 55.2 % compared to 2018; highest growth in the “E-Learning” segment.
- Continued training/hours: Increase in 2019 of 30.3 % compared to 2018.



Vocational Training/Qualification

	2019	2018	2017
Number of apprentices MAN Energy Solutions Germany	346	345	354
MAN Energy Solutions, Training Center, Augsburg			
Number of apprentices ¹ new hires	65	55	37
Number of apprentice applications	931	721	613
Ratio of women in %	11	12	15
Adoption rate in %	98	100	98

¹ 63 apprentices are planned for 2020

Qualification Measures

	2019	2018	2017
Measures implemented	3 854	2 858	3 117
Participants	31 745	20 449	27 033
Qualification hours	298 492	229 095	228 976
E-learning/people	9 304	1 688	7 830
E-learning/hours	17 083	3 606	2 678
Average qualification hours per employee	2.83	2.30	2.30

Production Responsibility in the Supply Chain



“Our Code of Conduct is mandatory and binding for suppliers.”

Martin Vörtmann, Head of Procurement General & Strategy, Processes, Systems

Supplier Structure

The necessary raw materials, goods and services for our products and services are generally procured worldwide under competitive conditions. In global customer projects and at our international production sites, however, we aim to purchase goods and services predominantly on a regional basis, that is, in the area where our company produces. “This allows us to contribute to local economic and social development, taking into account economic transport routes,” says Martin Vörtmann, Head of Procurement General & Strategy, Processes, Systems at MAN Energy Solutions.

The aim of our procurement is to optimize material costs, ensure security of supply and reduce ecological and social risks in supplier relationships. In this way, MAN Energy Solutions aims to achieve increased efficiency in the supply chain while taking sustainability aspects into account.

Concept and Organization

The central instrument for supplier relations is the Code of Conduct for Suppliers and Business Partners (CoC) of MAN Energy Solutions. This is where our ideas and rules regarding sustainable, fair and transparent market behavior are passed on to suppliers. Against this background, a restructuring of the allocation process is currently taking place, taking into account a future sustainability rating. Our procurement process should also take into account the duty of care in the supply chain by establishing a process that is effective in the future in order to avoid possible conflicts or their negative effects through the procurement of so-called conflict minerals. As a matter of principle, fair dialogue based on partnership and supplier development are at the forefront of all process steps and measures. The central goal is a continuous, sustainable cooperation.

Requirements for Suppliers

The Code of Conduct is an integral part of the supplier relationship and must be accepted by every supplier before the contract is concluded. The requirements apply to all goods and services procured worldwide. Our direct suppliers are obliged to pass on the requirements to their suppliers. This can help to avoid potential delivery failures and reputation risks and ensure consistent quality of the goods and services purchased.

The CoC requirements include the topics of corporate responsibility, environmental and climate protection, transparent business relationships, fair market conduct, data protection and the legal consequences of violations. It is based on the principles of the UN Global Compact, the Charter of the International Chamber of Commerce for long-term sustainable development and the relevant conventions of the International Labour Organization. The observance of human rights forms another central point. These include the prohibition of child labor, forced and compulsory labor and compliance with all other regulations on worker protection. These requirements are supplemented by environmental protection targets, environmental and quality specifications and the declaration of social rights of MAN Energy Solutions.

Monitoring of Suppliers

We want our main suppliers to have a certified environmental management system according to ISO 14001 and/or EMAS. The use of certified management systems for occupational health and safety according to OHSAS 18001 and/or SA8000 is also seen positively. Ad hoc cases are another central component of the supplier evaluation. This refers to sudden suspicions of a breach of sustainability requirements by a supplier. A clearly defined Ad Hoc Process governs the assessment and clarification of the situation. —

Ad Hoc Team Departments

- Risk Management
- Purchasing
- Safety and Environment
- Human Resources
- Medical Service
- Compliance
- Quality
- External Relations
- Legal
- Corporate Responsibility

Efficiency in Transport and Logistics

Intelligent Mobility

“Decarbonization =
CO₂ Reduction.”

Michael Singer, Head of Logistics Engines & Marine Systems



Self-Propelled for Internal Heavy Transport

The new Self-Propelled Modular Transporter (SPMT) with 10 axle lines is ready for internal heavy transport. The self-propelled unit, consisting of two coupleable modules, is controlled by remote control. For environmentally friendly operation, MAN Energy Solutions opted for a hybrid drive (electric/diesel).

Percentage increase of external logistics rail versus road

74 %

2019

2018 51 %
2017 17 %

The reduction of environmental impacts from transport and logistics is part of the integrated environmental management system at MAN Energy Solutions. Therefore, goals are defined, for example for the internal and external optimization of transport structures and processes.

— Since autumn 2018, we have been able to transfer more and more large engine transports from road to rail thanks to the commissioning of the heavy-duty center for loading engines in Augsburg and the joint development of a special 24-axle transport carriage with a framework agreement partner for special transports. “In the future, we will systematically increase our share of engines delivered by rail and thus save up to 450 tonnes of CO₂ per year”, says Michael Singer, Head of Logistics Engines & Marine Systems. This method additionally reduces pollution from exhaust fumes, noise and road closures. Strengthening rail transport and decarbonizing transport are our guidelines for climate-friendly transport.

Electric Forklifts for Plant Logistics in Augsburg

In the course of our decarbonization, we are converting diesel forklifts for in-house transport into electric forklifts – where possible and necessary. As an environmentally friendly logistics provider, we pay attention to compliance with guidelines and standards as a matter of course.

Resources: Packaging and Containers

There is a huge potential for saving resources in packaging material. In working groups and initiatives,

we discuss topics relating to “Innovative Packaging”, such as reusable instead of disposable packaging or the implementation of targeted measures for reduced packaging material consumption. In order to work together in a sustainable and resource-saving manner in all logistics processes, we use circulation containers instead of disposable containers – both together with our suppliers and in the production network.

Staff Mobility

Sustainable mobility for our employees is also important to us: Business trips should only be undertaken if they cannot be avoided. If economically viable, the most environmentally friendly means of transport should be used. Alternatives such as video or telephone conferences should always be considered in advance. For internal arrangements and workshops, spaces at MAN Energy Solutions locations must be used for sustainability reasons. By offering our employees the use of a home office, we reduce commuting. For example, at our German locations, we offer reduced rates for the use of public transport, thus helping to reduce individual traffic. —

On the Way to Sustainable Processes

— Of course, the efforts are ongoing. “As a company that sees itself as a pioneer on the way to a decarbonized world, we must set an example in the protection of the environment and resources”, says Richard Gilgenrainer, responsible for Central Environmental and Energy Management. “This requires new thinking that takes into account the entire product life cycle from development to disposal.”

MAN Energy Solutions is in the process of steadily reducing the environmental impact of production. What issues is responsible production grappling with today? The following trends can be identified on the way to sustainable processes:

- The use of technical progress not only enables better protection of the environment and resources, but also means cost savings. Less expensive technologies make the measures meaningful and profitable (e.g. LED light sources).
- The application of a uniform system of energy measures and target management for all production sites permits comparable evaluations. It enables both the identification of trends and timely countermeasures as well as a goal-oriented prioritization of measures.
- Within the Volkswagen Group, we are also very well networked and exchange information with our Energy & Climate Working Group. Since many processes and plants are similar in nature, we can benefit from the Group's experience.
- We carry out the most targeted energy-saving measures as possible after analyzing facts, figures and data. Increasingly precise measurement technology shows us where consumption is occurring and where we can target for savings.
- Compliance with regulatory requirements necessitates efficiency-improving measures in

“We must be an example for the protection of the environment and resources.”

Richard Gilgenrainer, responsible for Central Environmental and Energy Management

MAN Energy Solutions has already achieved a great deal in the areas of climate protection and energy efficiency at all production sites. Numerous measures have led to the reduction of 26 000 tonnes of climate-damaging CO₂ in 2019 compared to the previous year – this equates to the annual CO₂ emissions of around 14 500 medium-sized cars.

production: climate targets defined by policies, energy efficiency specifications, standard requirements, to name just a few examples. Predominantly product-related directives such as RoHS (hazardous substances in electrical and electronic equipment) or the REACH Regulation (EU chemicals regulation) are also being continuously tightened, which, in addition to reducing hazardous substances in the product, also has a positive effect on operating environmental protection.

- Last but not least, customer requirements regarding sustainable production are becoming stricter in all business areas. This is already noticeable in the tendering process and continues in the contract design.

In 2019, we addressed these trends and started to work intensively on them and develop appropriate packages of measures.

More Biodiversity!

Because we want to set a good example as a pioneer in the field of climate-friendly technologies, we are committed to nature and biodiversity at our sites. A first project, to be followed by others: On selected green spaces on our company premises in Augsburg, Oberhausen and Frederikshavn (Denmark), flowering meadows will be replanted to provide a home for plants and insects. In addition, MAN employee and hobby beekeeper Christoph Mayer looks after five bee colonies on the Augsburg plant site – in the direct vicinity of the new wildflower meadows. The employees in the company restaurant are happy about the harvested honey. Employees' ideas on biodiversity are also sought!

Energy, Climate, Environment & Resources

Energy and Environmental Management

All 14 reportable production sites and a large number of MAN Energy Solutions' service locations operate a certified environmental management system in accordance with ISO 14001:2015. They are constantly developing it to improve environmental performance and contribute to sustainable corporate development. The environmental management systems are organized on the level of the sites and Strategic Business Units. Targets such as overarching goals, various methods and tools are set centrally. For example, a new integrated software solution is currently being introduced jointly with the site managers by the Central Department for Environmental Protection and Occupational Safety. It aims to create added value for all parties involved, including through work simplification, quality improvement and extended functionalities. Regular meetings and working meetings enable the exchange of information and experience between the responsible persons on-site and with the central sector.

Our Goals

The former MAN Group had already achieved its goal of reducing CO₂ emissions by 25 % between 2008 and 2020 by 2018. Instead, by 2019, CO₂ emissions at the relevant MAN Energy Solutions locations were already reduced by 33 % compared with the 2008 base year. The long-term CO₂ target is still being pursued until the end of 2020. In all environmental fields of action, short-term targets were defined for the production sites in 2019. New long-term objectives are to be drawn up in the course of 2020. In order to achieve the energy and climate targets, measures are being developed at the sites. The production sites report measures and target achievement to the central offices for corporate responsibility and for environmental protection and occupational safety. They evaluate the information and develop strategic approaches for further sustainable development together with those responsible for the site and the management.

Violations of Environmental Law

In 2019, there were no accidents with significant environmental effects that were subject to fines or penalties.

Scope of the Key Figures

The following figures relate to the 14 MAN Energy Solutions locations subject to reporting requirements.

Energy Consumption

MAN Energy Solutions has already been able to reduce its total energy consumption by around 0.9 %. The consumption of electrical energy decreased by 1.8 % compared to the previous year, whereas fossil energy sources were partly replaced by renewable energy sources. In the year under review, the share of renewable energies was 19.2 % (previous year 7.7 %). Heat consumption has increased by 7 %. It was almost exclusively fed by fossil fuels.

Energy Consumption in MWh

	<input checked="" type="checkbox"/>	2019	2018	2017
Total energy consumption / (electrical energy, thermal energy, fuels, gaseous fuel)		357 458.49	360 530.85	364 507.19
Electrical energy consumption		107 142.92	109 090.88	104 813.46
Thermal energy		48 757.42	45 559.48	44 223.23
Fuel usage of the site		198 355.97	203 568.53	212 970.50
Fuel usage of the site – main sources		197 939.17	202 860.33	211 758.20
Fuel oil		890.07	583.31	1 258.58
Natural gas		131 925.80	108 641.18	121 973.51
Diesel		65 123.30	93 635.84	88 526.10
Use of gasoline as fuel at the site – secondary source		416.80	708.20	1 212.30
Fuel gases for manufacturing processes		3 202.18	2 311.96	2 500.01

CO₂ Emissions

Having already succeeded in continuously reducing CO₂ emissions since 2008, MAN Energy Solutions can again report encouraging figures: Absolute CO₂ emissions have fallen by around 24 % in 2019.

CO₂ Emissions in t

	☑	2019	2018	2017
Total emitted carbon dioxide (CO₂)		82 551.66	108 560.25	107 065.87
Directly emitted carbon dioxide (CO₂)		44 347.58	47 406.86	49 235.16
Indirectly emitted carbon dioxide (CO₂)		38 204.08	61 153.39	57 830.71

Recycling and Waste

We were able to reduce the total amount of waste by 17.9 % in 2019. 59.8 % of the total waste was recycled.

Recycling and Waste in t

	☑	2019	2018	2017
Total amount of waste		37 128.19	45 202.55	47 884.19
Total amount of waste for recycling		22 214.15	28 381.55	36 038.46
Hazardous waste for recycling		2 707.03	3 069.47	3 942.49
Non-hazardous waste for recycling		19 507.12	25 312.09	32 095.98
Total quantity of waste for disposal		4 517.92	6 401.84	2 123.35
Hazardous waste for disposal		899.24	894.98	1 240.77
Non-hazardous waste for disposal		3 618.68	5 506.86	882.58
Metallic waste		10 396.12	10 419.15	9 722.37

Water and Wastewater

In the year under review, we covered the majority of our water requirements from our own wells and from surface water from lakes, rivers and oceans.

Water and wastewater in m³

	☑	2019	2018	2017
Total fresh water quantity		3 567 371.05	3 655 663.60	3 479 775.87
Fresh water quantity from external supply incl. drinking water		143 678.05	139 894.60	142 877.87
Fresh water quantity from own production (well water)		3 423 693.00	3 515 769.00	3 336 898.00
Surface water from lakes, rivers, seas		8 178 021.00	7 932 108.00	6 213 726.00
Wastewater quantity		463 926.53	388 775.29	405 414.18

Air Pollutant Emissions

Air pollutants from production were reduced in all areas in the year under review.

Air Pollutant Emissions in t

	☑	2019	2018	2017
Sulfur dioxide (SO₂)		0.25	0.31	0.32
Nitrogen oxides (NO_x and NO₂)		92.99	127.95	123.41
Total dust		0.30	0.36	0.34
Emissions of volatile organic compounds (VOC)		44.31	47.90	49.06

Environmental Protection Investments

In the year under review, the production sites reported investments of around €2.3 million in environmental protection measures (2018: €0.8 million). MAN Energy Solutions invests beyond the legal requirements in measures to reduce negative environmental impacts. One example is the implementation of a water recirculation system in the pressure testing process at the Changzhou site (China). This reduces the amount of fresh water used, the amount of hazardous process wastewater and the amount of chemicals required in the testing process. —

In 2019, MAN Energy Solutions invested around €2.3 million in environmental protection.

Product

Accountability

“Our products are paving the way to a climate-neutral future”

The foundation of our product responsibility is our strategic orientation. With our products, we are paving the way to a climate-neutral future: in the maritime sector, in the energy industry and in industrial production. In terms of a holistic approach to the product life cycle, we are striving for climate and environmentally friendly solutions at all levels – and thus also ensuring the sustainable added value of our customers.



“Regarding our products, there are three criteria we focus on: Safety, emissions and field observation and the resulting continuous improvements.”

Dr. Gunnar Stiesch, Head of Engine Development and
Dr.-Ing. Harald Stricker, Head of Group Innovation Management

Safety

— We ensure the safe application and handling of our products with appropriate design as well as with detailed installation and operating instructions. Strict safety requirements are already in place during production in our plants and in the plants of our licensees, as well as during assembly, commissioning and maintenance work. European standards are the minimum standards for all markets and regions to which we supply. In addition, we also meet specific country or application standards as well as customer requirements.

Reduction of Emissions

Products from MAN Energy Solutions usually have a long life. Engines, compressors, gas and steam turbines often run for 25 years or more, up to 8 000 hours per year, that is, with long periods without being switched off. Therefore, we attach an even greater importance to emissions. Internal combustion engines and gas turbines, for example, due to their comparatively high power output and long operating time, produce by far the highest proportion of emissions not during manufacture but during operation. That's why we invest heavily in research and development to continuously improve fuel consumption, pollutant emissions and our greenhouse gas footprint. The same applies analogously to the development of compressors and steam turbines: Here, too, the continuous increase in the efficiency of the machines leads to less use of primary energy and is thus able to

contribute to decarbonization. Due to our decarbonization know-how, our active advice and cooperation is also in demand among legislative bodies in order to jointly develop ambitious, technically feasible emission targets. Emissions during production are also continuously being reduced. Legal requirements are of course complied with.

Field Observation and Continuous Improvement

In order to ensure the continuous improvement of our products, active field observation is necessary – how do they behave in terms of safety and emissions? From these evaluations we are consistently able to derive measures for further development. High investment in research and development is a prerequisite for establishing ourselves as the driving force behind decarbonization in our market segments. —

Along the Value Chain

Product Safety

“Our orientation towards a value-added implementation of product safety is rarely found on the international market in this systematic form.”

Dietmar Pinkernell, Head of Integrated Management System

All MAN Energy Solutions products are continuously checked and monitored for safety aspects. Product safety is defined in the Code of Conduct for us and our suppliers as well as for business partners.

— The aspects of product safety are specified as a mandatory basis in the guidelines signed by the Executive Board of MAN Energy Solutions. The “Management of Product Safety and Conformity” guideline regulates all corporate obligations with regard to the development, production and distribution of safe products as a central requirement. The guideline applies to all MAN Energy Solutions companies worldwide and is mandatory for all employees. “This is how we integrate product safety as a key criterion into our management, performance and support processes right from the beginning,” says Dietmar Pinkernell, Head of Integrated

Management System. The responsibility for bringing only safe products to market lies with the Strategic Business Units and the centrally responsible Product Safety Office.

Value Chain

Product safety is an integral part of the entire value chain at MAN Energy Solutions. This begins at the engineering stage with corresponding risk assessments and continues through production, delivery and assembly as well as installation and commissioning. Of course, sales, logistics, maintenance and licenses are also included. The primary goal is to minimize risks when handling our products. Our processes and measures are continuously optimized through consistent monitoring. To this end, we carry out regular product safety audits at all locations.

Training Concept and Product Safety Instruction

The safety of our products is the responsibility of every employee. We sensitize our teams to the topic

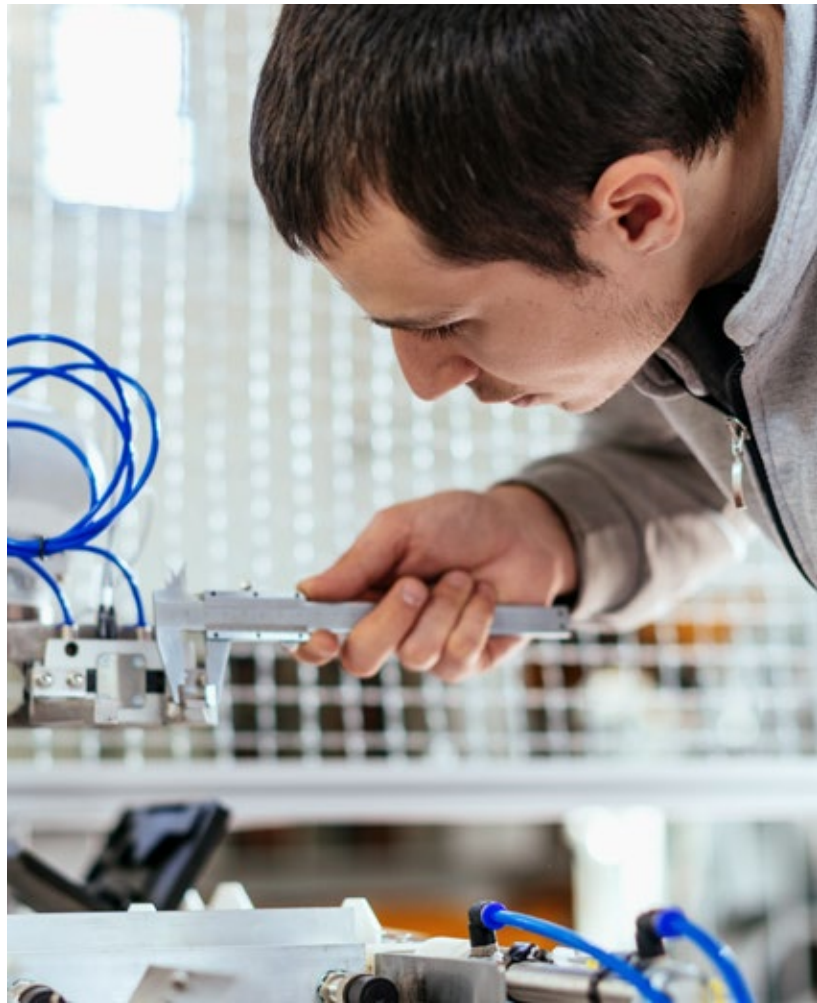
of product safety through continuous training. The basis is provided by special awareness seminars in the form of e-learning modules, “which all new employees go through,” confirms Dietmar Pinkernell. Further Level I and Level II training courses provide more in-depth content with face-to-face training. For the higher level, a final test is carried out as a learning assessment of the Level II training courses.

Product Safety Action Group

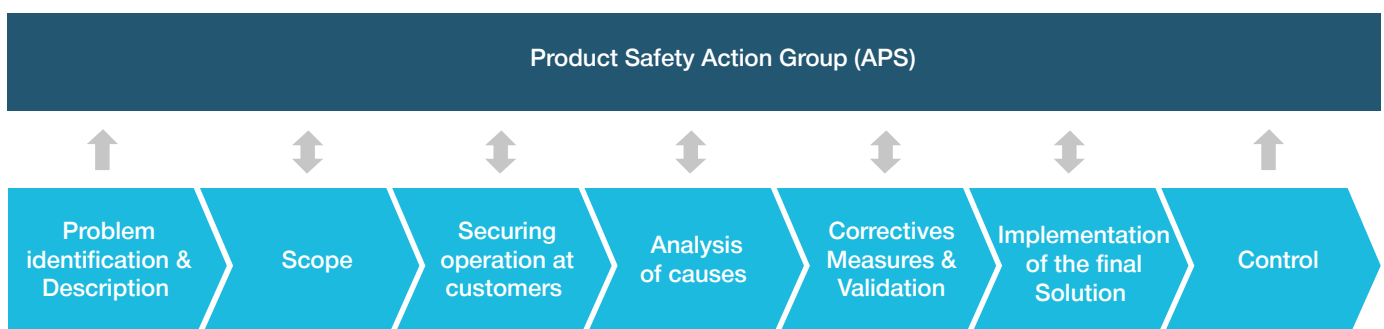
The Product Safety Action Group (APS; Aktionskreis Produktsicherheit) was set up to meet our own high standards. APS is the supreme body when it comes to safety aspects of products that customers have. The special requirements for the organization to “monitor product safety and the handling of defective or faulty products” are laid down in a separate directive. The committee, consisting of high-caliber representatives from the legal department, the various quality departments as well as engineering and service departments, meets regularly to assess the current status of product safety.

Customer Satisfaction and Information

MAN Energy Solutions conducts a comprehensive Customer Satisfaction Monitoring survey every two years as part of an online survey. In 2019, 1 100 customers were interviewed, 58 % rated our product quality as “excellent/very good”, certainly due in part to the high level of safety. —



7-Step Solution Process



If it is Good for the Climate, it is Also Good for the Customer

Efficient Products and Services

Maritime Energy Transition

— The success we achieved in 2017 with the “Wes Amelie”, the world’s first container ship to be converted to dual-fuel operation (i.e. liquid/gaseous dual-fuel operation), was followed up in subsequent years. We were also able to expand our business in 2019 as a driver of the maritime energy transition. We are currently implementing a pioneering project for the decarbonization of shipping for the shipping line Hapag Lloyd: the world’s first retrofit of a large container ship into dual-fuel operation. If the converted two-stroke engine is operated with liquefied natural gas (LNG) instead of heavy fuel oil in the future, this will reduce CO₂ emissions by 15 to 20 % and sulfur dioxide and particulate emissions by more than 90 %. The “Wes Amelie” example illustrates what is already technologically feasible today. As part of a technical

demonstration in spring 2020, 20 of the total of 120 tonnes of LNG that the ship normally consumes per mission are to be replaced by SNG (synthetic methane) obtained from renewable energies. The use of this climate-neutral drop-in fuel will reduce the CO₂ emissions released during the journey by 56 tonnes. Fully integrated complete solutions, such as those offered by MAN Energy Solutions, are becoming increasingly important, for example with systems for gas supply by our product brand MAN Cryo. An integrated solution was also chosen by the Canadian ferry operator Seaspan, which commissioned us to develop a battery hybrid dual-fuel system (a cooperation project with the Canadian company Aspin Kemp & Associates Inc. in which MAN Energy Solutions holds a 40 % stake). A first order was received in 2019 for our new compact high-pressure SCR system for two-stroke engines. It reduces NO_x exhaust emissions to the limits set by IMO Tier III through an internal catalytic reaction.

Maritime Energy Transition

MAN Energy Solutions coined this term as early as 2016. Since then, we have been campaigning for a globally applicable regulation of emissions in shipping. By switching to alternative fuels, CO₂ emissions and harmful nitrogen oxide and sulfur emissions can be significantly reduced or almost completely eliminated.

Power Plants

Gas is also becoming increasingly important as a fuel in the power plant sector. As the leading supplier of gas-engine power plants in Germany, we have been working for many years to establish large-scale combined heat and power. In 2019, public utilities commissioned us with the construction of new combined heat and power plants, for example in Chemnitz, in Jena and in Frankfurt (Oder), to ensure the environmentally friendly and economical supply of heat and electricity. An order for the supply and



Our high quality standards drive us forward: As part of our commitment to act responsibly towards the environment and climate on the one hand and our customers on the other, we are continuously working to increase the efficiency of our products and reduce their emissions. The development of alternative drive concepts and the use of alternative fuels play a prominent role in this. Our success in doing so is demonstrated by major orders that we were able to win in the 2019 reporting year, as well as by some examples from our development departments.

commissioning of eleven 51/60 dual-fuel engines was placed for a new large power plant in the Cambodian capital of Phnom Penh. And a further step into the future, the entry into the hydrogen economy, was marked by the acquisition of a 40 % stake in the electrolysis technology company H-TEC SYSTEMS. Hydrogen can be produced from renewable energy in a climate-neutral way – the basis for the production of synthetic fuels and combustibles by the Power-to-X process. In this sector there is also increasing demand for complete solutions that incorporate renewable energy and storage solutions and integrate components into an intelligent energy management system.

Gas Turbines

We are constantly working on reducing emissions from our gas turbines by optimizing combustion technology. Higher hydrogen contents can already be added to natural gas fuel for gas turbines – the big goal in focus: Together with the other European gas turbine manufacturers, we have made a commitment to the EU that gas turbines will be able to be fired with 100 % climate-neutral hydrogen from 2030.

Energy storage

With the development and market launch of ETES – Elektrothermischer Energiespeicher (Electrothermal Energy Storage System) – MAN Energy Solutions can offer a system for different needs: for environmentally friendly climate control

(heating and/or cooling) of buildings and plants; for the management of renewable energy – excess electricity can be stored and fed back into the grid when needed; or to provide heat for 20 000 households. ETES targets around 50 % of the energy market for heating/cooling, which is currently 75 % dependent on fossil fuels.

Compressor Solutions

In 2019, we will continue to increase the efficiency of our compressor solutions: Our reliable axial, centrifugal and geared compressors are characterized by comparatively high efficiencies – operating power is thus better utilized and we indirectly contribute to the decarbonization of our customers' industrial processes. By using our hermetically-sealed HOFIM™ and MOPICO® compressors, the operational leakage of hydrocarbons averaging 85 tonnes per year can be eliminated in the target market of oil & gas. In 2019, we also received another engineering contract for compressors installed on the seabed. As a result, CO₂ emissions from oil and gas production per field can be reduced in the order of 53 % (measured over the entire lifetime). —

Key Figures at a Glance

	2019	2018	2017
Energy and Fuel Consumption in MWh			
Total energy consumption	357 458.49	360 530.85	364 507.19
Electrical energy consumption	107 142.92	109 090.88	104 813.46
Elec. energy use from renew. energy sources – own production	0.00	0.00	0.00
Elec. energy use from renew. energy sources – external production	20 600.88	8 429.44	8 198.70
Elec. energy use from foss. energy sources – external production	86 542.04	100 661.44	96 614.76
District heat/heating consumption	48 757.42	45 559.48	44 223.23
Heat consumption from renew. energy sources – own production	0.00	0.00	0.00
District heating consumption from renew. energy sources – external production	412.48	410.00	400.00
District heating consumption from foss. energy sources – external production	48 344.94	45 149.48	43 823.23
Fuel usage of the site	198 355.97	203 568.53	212 970.50
Fuel usage of the site – main sources	197 939.17	202 860.33	211 758.20
Fuel oil	890.07	583.31	1 258.58
Natural gas	131 925.80	108 641.18	121 973.51
Diesel	65 123.30	93 635.84	88 526.10
Use of gasoline as fuel at the site – secondary source	416.80	708.20	1 212.30
Fuel gases for manufacturing processes	3 202.18	2 311.96	2 500.01
Acetylene (ethyne, C ₂ H ₂)	1 180.60	868.98	850.26
Propane	1 960.73	1 402.06	1 619.70
Hydrogen	60.86	40.92	30.05
CO₂ Emissions in t			
Total emitted carbon dioxide (CO ₂)	82 551.66	108 560.25	107 065.87
Directly emitted carbon dioxide (CO ₂)	44 347.58	47 406.86	49 235.16
Indirectly emitted carbon dioxide (CO ₂)	38 204.08	61 153.39	57 830.71
Recycling and Waste – Quantities in t			
Total amount of waste	37 128.19	45 202.55	47 884.19
Total amount of waste for recycling	22 214.15	28 381.55	36 038.46
Hazardous waste for recycling	2 707.03	3 069.47	3 942.49
Hazardous construction waste for recycling	136.22	388.86	1 362.42
Other hazardous waste for recycling	2 570.81	2 680.61	2 580.07
Non-hazardous waste for recycling	19 507.12	25 312.09	32 095.98
Non-hazardous construction waste for recycling	7 601.33	14 323.89	23 508.59
Other non-hazardous waste for recycling	11 905.79	10 988.20	8 587.39
Total quantity of waste for disposal	4 517.92	6 401.84	2 123.35
Hazardous waste for disposal	899.24	894.98	1 240.77
Hazardous construction waste for disposal	11.28	0.00	281.88
Other hazardous waste for disposal	887.96	894.98	958.89
Non-hazardous waste for disposal	3 618.68	5 506.86	882.58
Non-hazardous construction waste for disposal	3 005.75	4 746.64	13.11
Other non-hazardous waste for disposal	612.93	760.22	869.47
Metallic waste	10 396.12	10 419.15	9 722.37
Water and wastewater in m³			
Total fresh water quantity	3 567 371.05	3 655 663.60	3 479 775.87
Fresh water quantity from external supply incl. drinking water	143 678.05	139 894.60	142 877.87
Fresh water quantity from own production (well water)	3 423 693.00	3 515 769.00	3 336 898.00
Surface water from lakes, rivers, seas	8 178 021.00	7 932 108.00	6 213 726.00
Wastewater quantity	463 926.53	388 775.29	405 414.18
Air Pollutant Emissions in t			
Sulfur dioxide (SO ₂)	0.25	0.31	0.32
Nitrogen oxides (NO _x and NO ₂)	92.99	127.95	123.41
Total dust	0.30	0.36	0.34
Emissions of volatile organic compounds (VOC)	44.31	47.90	49.06

	2019	2018	2017
Location Certificates	<input checked="" type="checkbox"/>		
Site with ISO 14001	14	14	14
Site with ISO 9001	14	14	14
Site with OHSAS 18001	13	14	14
Site with ISO 45001	1	0	0
Employee Structure¹	<input checked="" type="checkbox"/>		
Permanent staff	14 441	14 029	13 650
of which female	2 158	2 070	2 028
of which male	12 283	11 959	11 622
of which part-time staff	508	465	437
of which female	330	307	288
of which male	178	158	149
of which temporary staff	533	506	342
of which female	86	83	58
of which male	447	423	284
Apprentices	569	542	541
of which female	94	94	100
of which male	475	448	441
of which in Germany	355	346	354
Staff in partial retirement passive phase	188	156	127
Staff	15 198	14 727	14 318
Temporary workers	491	494	381
Women in Management Positions in %	<input checked="" type="checkbox"/>		
Proportion of women as permanent staff	14.9	14.8	14.9
Proportion of women at the management level	10.6	10.8	10.6
Proportion of women in upper-level management	4.6	4.2	3.7
Proportion of women in top-level management	0.0	0.0	0.0

¹ Number at the end of each year

Issuer

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Copy Deadline

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Concept, Design

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Independent auditor's opinion on a limited assurance engagement on sustainability information

To MAN Energy Solutions, Augsburg

— We have subjected the information marked with a “” in the CR Report 2019 of MAN Energy Solutions SE, Augsburg (hereinafter referred to as the “Company”) for the period from January 1 to December 31, 2019, (hereinafter referred to as the “Report”) to a limited assurance engagement. Our contract relates exclusively to the information marked with the symbol “”.

Responsibility of the Legal Representatives

The legal representatives of the company are responsible for preparing the Report in accordance with the principles set out in the Sustainability Reporting Standards of the Global Reporting Initiative (hereinafter: “GRI Criteria”) and for selecting the information to be evaluated.


This responsibility of the Company's legal representatives includes selecting and applying appropriate sustainability reporting methods and making assumptions and estimates for individual sustainability disclosures that are reasonable in the circumstances. Furthermore, the legal representatives are responsible for the internal controls that they have determined to be necessary to enable the preparation of a report that is free from material misstatement – intentional or unintentional.


Independence and Quality Assurance of the Auditing Firm

We have complied with the German professional regulations on independence and other professional conduct requirements. Our auditing firm applies the national legal regulations and professional pronouncements – in particular the professional statutes for auditors and certified public auditors (BS WP/vBP) and the IDW Quality Assurance Standard 1 “Requirements for Quality Assurance in the Practice of Public Auditors” (IDW QS 1) published by the Institute of Public Auditors in Germany (IDW; Institut der Wirtschaftsprüfer) – and accordingly maintains a comprehensive quality assurance

system which includes documented regulations and measures relating to compliance with professional conduct requirements, professional standards and relevant legal and other legal requirements.

Responsibility of the Auditor

Our responsibility is to express an opinion with limited assurance on the information in the Report marked with a “” based on our audit.


We conducted our audit in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): “Assurance Engagements other than Audits or Reviews of Historical Financial Information”, issued by the IAASB. Those standards require that we plan and perform the audit to obtain limited assurance whether we have become aware of any matters that cause us to believe that the information marked “” in the Company's Report for the period from January 1 to December 31, 2019, has not been prepared, in all material respects, in accordance with the relevant GRI Criteria. In a limited assurance engagement, the evidence-gathering procedures are less comprehensive than in a reasonable assurance engagement, and consequently less assurance is obtained than in a reasonable assurance engagement. The choice of audit procedures is at the discretion of the auditor.

In the course of our audit, we performed the following audit procedures and other activities, among others:

- Inquiries of employees involved in the preparation of the CR Report about the preparation process, the internal control system related to this process and selected information in the CR Report
- Inspection of supplementary documents and supporting systems
- Identification of probable risks of material misstatements in the CR Report based on GRI Criteria
- Conducting on-site visits to assess processes and internal control procedures at site level:

- Analytical assessment of selected information in the CR Report
- Assessment of the presentation of the selected sustainability performance data
- Comparison of information with the corresponding data in the consolidated financial statements and Group management report

Audit Opinion

Based on the audit procedures performed and the audit evidence obtained, nothing has come to our attention that causes us to believe that the information marked “” in the Company’s report for the period from January 1 to December 31, 2019, has not been prepared, in all material respects, in accordance with the relevant GRI Criteria.

Purpose of the Opinion

We issue this opinion on the basis of the contract concluded with the Company. The audit was carried out for the purposes of the Company and the opinion is intended only to inform the Company of the result of the audit. The opinion is not intended for third parties to make (financial) decisions based on it. Our responsibility is solely towards the Company. We assume no responsibility towards third parties.

Munich, May 15th, 2020

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Hendrik Fink
Auditor

ppa. Nico Irrgang



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