



# Corporate Responsibility at MAN 2016

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## Production

Efficiency, resource conservation, and environmental protection are key pillars of our corporate responsibility activities in the production sector, which also includes the areas of transportation, logistics, and purchasing. We use the levers at our disposal to reduce CO<sub>2</sub> emissions and help mitigate climate change.

## An integrated approach

In the production sector, climate change, pollution, and resource scarcity are global challenges to which the MAN Group is responding. We use our integrated management systems and advanced technology to mitigate the negative impacts of our activities. In order to reduce our CO<sub>2</sub> emissions across the Group, in 2011 we drew up MAN's Climate Strategy, which included the binding goal of reducing CO<sub>2</sub> emissions from our production plants by 2020.



## Reduce CO<sub>2</sub> emissions

MAN is approaching the challenge of reducing energy consumption and CO<sub>2</sub> emissions from many different angles, including combined heat and power generation, LED lighting, and renewable energies. We cut our CO<sub>2</sub> emissions by around 108,000 tonnes from 2008 to 2016. Therefore we stabilized the emission reduction on the level of 2015, by implementing a range of different measures at the sites.



### Munich cogeneration plant

In 2016, construction work on the combined heat and power (CHP) plant in Munich was completed, allowing us to generate up to 20% of the plant's heat and power requirements on site. CHP uses the heat produced during electricity generation to achieve major energy and CO<sub>2</sub> savings. This measure alone has contributed around 40% to the Munich site's target for reducing CO<sub>2</sub> emissions.

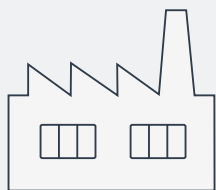


### Use of energy-efficient lighting

In 2016, MAN prioritized the conversion to energy-efficient lighting across the Group. Projects to install indoor and outdoor LED lighting were rolled out at more than 20 sites. As well as maximizing energy efficiency potential, this also led to optimized lighting. Modern lighting control systems help to ensure the efficient and targeted use of lighting.

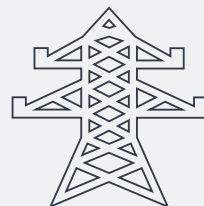
## Focus on energy consumption

In 2016, energy consumption at MAN showed only a minimal change against the previous year, at 1.37 million MWh.



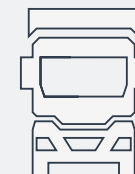
**647,206 MWh**

direct energy consumption in 2016



**719,905 MWh**

indirect energy consumption in 2016



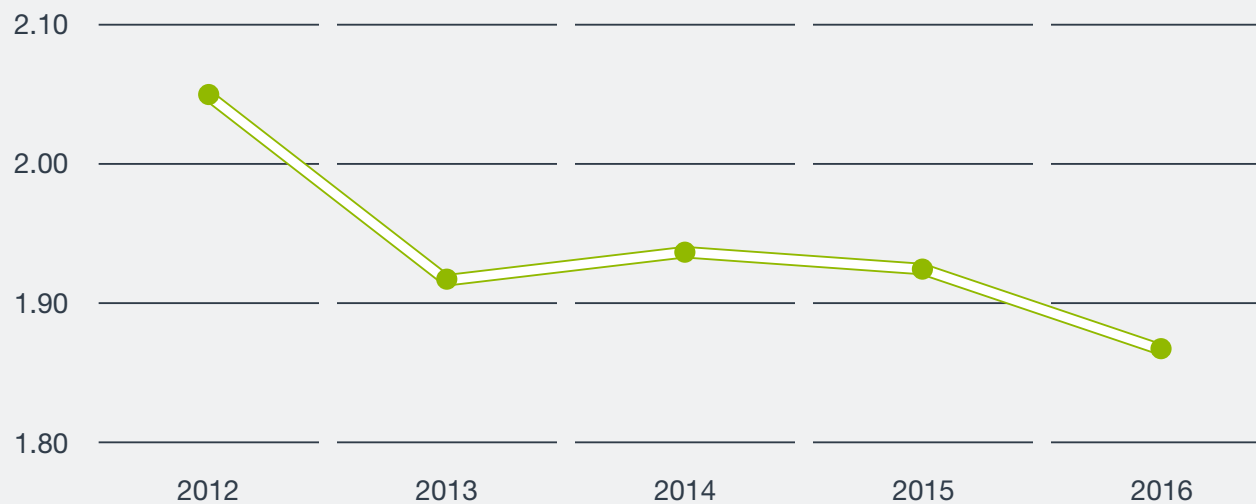
**8.8 MWh**

per vehicle produced in 2016

## Making our logistics more efficient

In the year under review, MAN Truck & Bus caused the release of 77,070 tonnes of CO<sub>2</sub> for incoming supplies and 84,768 tonnes of CO<sub>2</sub> in delivering its products. This equates to an increase of around 2.8% compared to the previous year due to an extended production range. CO<sub>2</sub> emissions per vehicle produced continued to decrease, thanks to a range of optimization measures in logistics. In 2016, emissions totaled approximately 1.9 tonnes of CO<sub>2</sub> per vehicle.

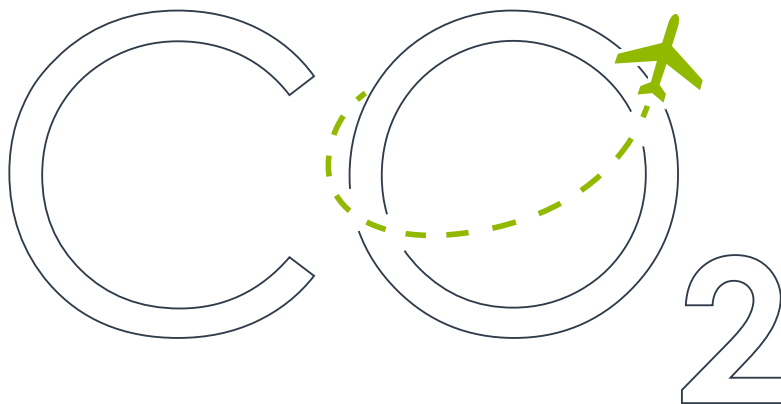
### Logistics-related CO<sub>2</sub> emissions per vehicle produced, in tonnes



## Employee mobility

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In the year under review, business travel by our employees caused around 15,000 tonnes of CO<sub>2</sub> emissions. This figure relates to business travel booked through the central travel service in Germany. Around 87% of this was for flights. Since 2013, the central Environment & Safety function at MAN Truck & Bus has been offsetting the carbon emissions from employees' international meetings and business trips to make them carbon-neutral.



## A systematic approach to environmental protection

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All MAN production sites have implemented the requisite organizational and technical measures to ensure compliance with environmental standards. All MAN production sites are certified to a quality standard (the majority to ISO 9001). We have set ourselves the target of certifying these sites to the ISO 14001 environmental management standard as well.

**25 of 30**

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MAN production sites are certified to ISO 14001.

## Careful use of resources

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To minimize our consumption of resources in a responsible fashion, we systematically and continuously record consumption figures at our production sites.



**104,956 t**

tonnes of total waste in 2016  
with a recycling rate

**92%**



**16,287,153 m<sup>3</sup>**

of water MAN used in 2016,

**5%**

of which was drinking water.



**1,307,620 m<sup>3</sup>**

wastewater volume in 2016



## Sustainability along the supply chain

The MAN Group's procurement policy aims to reduce environmental and social risks in the supply chain while simultaneously optimizing material costs. The concept of sustainability along the supply chain is based on three main pillars: **requirements, monitoring, and development**, with the aim of minimizing and preventing negative social, environmental, and financial impacts in our supply chain.

- The Volkswagen Group's requirements vis-à-vis sustainability in supplier relations span a range of issues, including environmental protection, employee rights, fair market conduct, and transparent business relations, and have been a mandatory element of all contracts since 2015.
- We use the [Self-Assessment Questionnaire \(SAQ\)](#) to help us identify risks early on. This sustainability questionnaire was jointly developed by ten OEMs within the European Automotive Working Group on Supply Chain Sustainability, and is continuously updated. We also commission independent auditors to conduct **sustainability audits**, which scrutinize our suppliers for **compliance with environmental, social, and human rights standards**.
- This monitoring enables us to identify areas for improvement and guide our suppliers towards development opportunities, including an e-learning course offered by the VW Group.



## Supporting the local region

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By purchasing raw materials, goods, and services close to our production operations, we support local economic and social development. Growth potential leveraged by demand for goods and services by MAN has a positive impact on infrastructure: jobs are created and local incomes rise. Regional suppliers are also preferable from an environmental perspective, since transportation-related emissions are lower.

# 98%

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of suppliers to MAN Truck & Bus have their registered offices in Europe and Turkey.