

## **Explanatory notes for GEA's environmental key performance indicators for financial year 2018**

These explanatory notes refer to the environmental performance indicators released by GEA. They include information on energy consumption converted into CO<sub>2</sub> emissions.

The data on direct CO<sub>2</sub> emissions (Scope 1), indirect CO<sub>2</sub> emissions (Scope 2) as well as selected other CO<sub>2</sub> emissions (Scope 3) for the 2018 financial year were audited by KPMG AG Wirtschaftsprüfungsgesellschaft within the framework of a limited assurance engagement performed in accordance with International Standard on Assurance Engagements ISAE 3000 (revised), which constitutes the relevant standard for such audits.

### **Reporting standards**

When determining its environmental performance indicators, GEA refers to the criteria and definitions set forth in the Sustainability Reporting Standards of the Global Reporting Initiative (GRI). The data is collected on the basis of internal guidelines for environmental reporting on a group level.

### **Reporting boundaries in relation to environmental performance indicators**

All of the company's own production sites and repair workshops as well as GEA Group Aktiengesellschaft are included in its reporting on environmental performance indicators. For defining reporting boundaries, GEA strictly adheres to the principle of operational control. Operational control exists when GEA holds a majority interest of more than 50 percent in a company or if GEA, otherwise, has full operational decision-making powers through contractual agreements.

As to the time of site inclusion, the following rule applies: at the latest, new locations built or acquired by the company must be included in the data collection process for the period under review in which they first started production.

Based on materiality considerations, the following entities are currently not included in the data collected for determining the environmental performance indicators:

- Non-producing sites with the exception of GEA Group Aktiengesellschaft.

### **Determination of environmental performance indicators**

#### **a. Direct energy consumption**

Direct energy consumption includes the annual consumption levels of fuel gases, heating oils as well as petrol and diesel.

#### **b. Indirect energy consumption**

Indirect energy consumption includes the annual consumption levels of purchased heat and electricity, as well as the electricity equivalent for steam and cooling.

#### **c. CO<sub>2</sub> emissions**

The CO<sub>2</sub> emissions inventory is based on CO<sub>2</sub> equivalents and takes into account all greenhouse gases under the Kyoto Protocol established on the basis of a greenhouse gas potential of 100 years.

For the purpose of external reporting, emissions are categorized into the following three clusters, so-called "Scopes":

Scope 1 (direct CO<sub>2</sub> emissions): Emissions from sources that are owned or controlled by GEA, including:

- the company's own energy production facilities,
  - fuel consumption of vehicles.
- Scope 2 (indirect CO<sub>2</sub> emissions): Emissions from the consumption of purchased energy, including:
- electricity,
  - steam and heat,
  - district heat.
- Scope 3 (CO<sub>2</sub> emissions from upstream and downstream activities in the value chain): for the 2018 fiscal year, the following categories of Scope 3 emissions were determined in accordance with the WRI/WBCSD Corporate Value Chain Accounting and Reporting Protocol:
- Currently, this performance indicator merely subsumes reporting on business travel.
  - In this context, GEA differentiates between air travel (global recording by GEA's travel agency), car rentals (rentals in Germany) as well as travel with Deutsche Bahn (bookings in Germany).

GEA is continuously seeking to integrate all sources of greenhouse gases when compiling its data; moreover, it aims at employing specific emission factors provided by the respective power company to enhance the accuracy of the CO<sub>2</sub> emissions reported by the company.

Direct CO<sub>2</sub> emissions (Scope 1) are ascertained on the basis of generally accepted emission factors published by renowned organizations, while indirect CO<sub>2</sub> emissions (Scope 2) are determined by referring to generally accepted, country-specific power grid emission factors released by renowned organizations. Other indirect CO<sub>2</sub> emissions (Scope 3) under the category "Fuels and energy-related activities not included in Scope 1 and 2" are based on the values and consumption levels reported by the individual sites as well as public standard emission factors provided by recognized organizations.

### **Calculation of CO<sub>2</sub> emissions for 2018**

For the calculation of CO<sub>2</sub> emissions in 2018, very small individual data for GEA sites were extrapolated. This procedure was agreed with KPMG.

### **Calculation of emissions – emission factors by source**

- We report direct and indirect emissions (Scope 1/2) in accordance with the specifications of the Greenhouse Gas Protocol (GHG Protocol/IEA, 05/2018).
- We use the Global Warming Potentials (GWP global warming potential on a 100-year time horizon) as another source.
- Energy consumption levels are computed by referring to local and/or country-specific conversion factors. The relevant data is taken from the following sources: IEA (International Energy Agency) and DEFRA (Department for Environmental and Rural Affairs, 05/2018).

## **Quality and comparability**

The company is permanently striving to enhance the quality of environmental performance data on all levels of the organization. This allows GEA to monitor its environmental performance on various levels, enabling the company to engage in internal and department-specific benchmarking.

To ensure the comparability of GEA's environmental performance indicators, the company has defined group-wide guidelines for the prospective and retrospective adjustment of data. In the event of structural changes, retrospective adjustments are made and explained if such effects materially impact the comparability of the reported performance indicators.

Since 2018, GEA has determined the specific key figures for environmental performance in relation to sales and reports according to the group's seven regions.