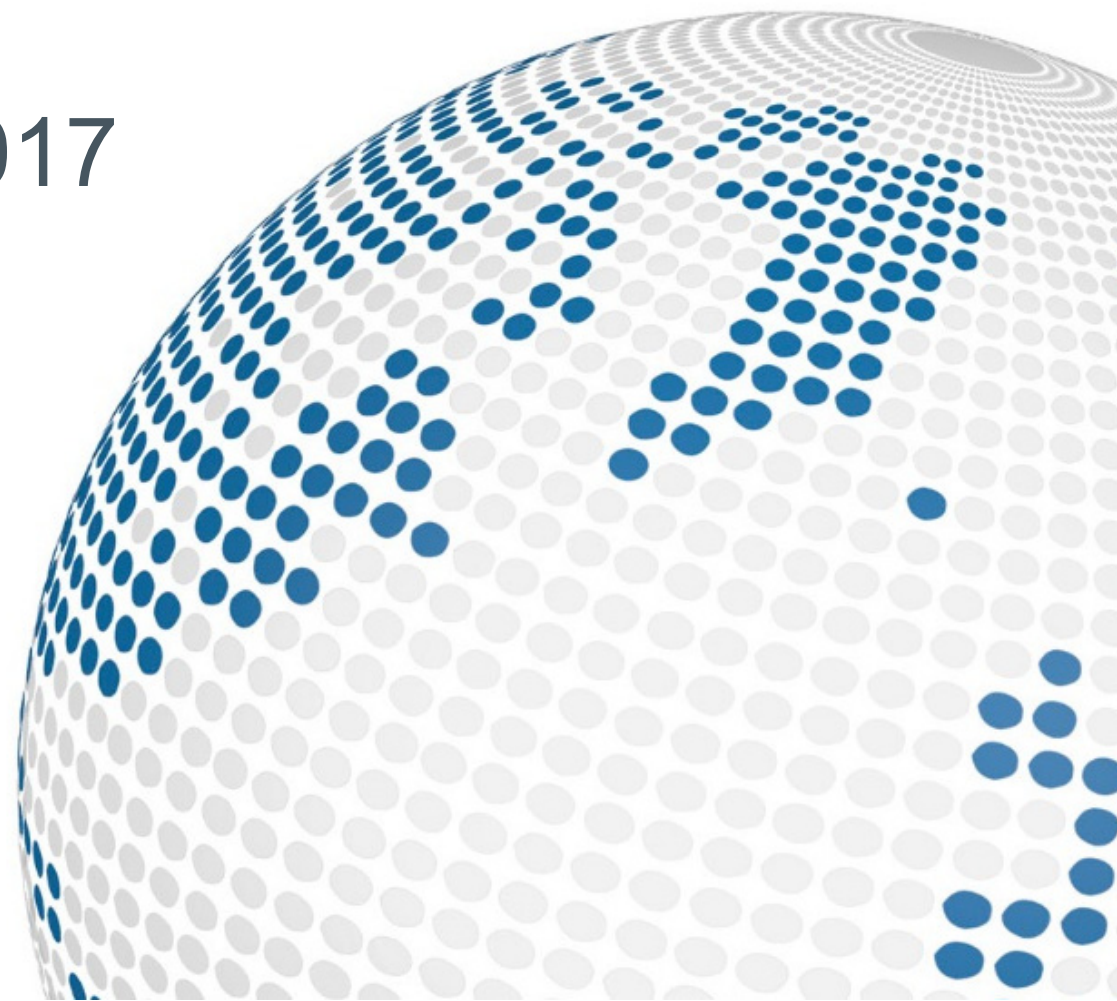


Environmental Performance 2017

Shaping the world with sensor solutions

Marlies Radl

03-2018



Environment Management

Annual Environmental Performance Statistics



- ams is committed to responsible, visionary environmental management with the aim to contribute to the conservation of an environment worth living in
- ams fully assesses the environmental impact of our business activities and operates in a manner that avoids or minimizes emissions of pollutants and reduces energy consumption
- ams recognizes that human activities are contributing to global climate change therefore we will pursue activities to lessen our company's impact on CO2 production

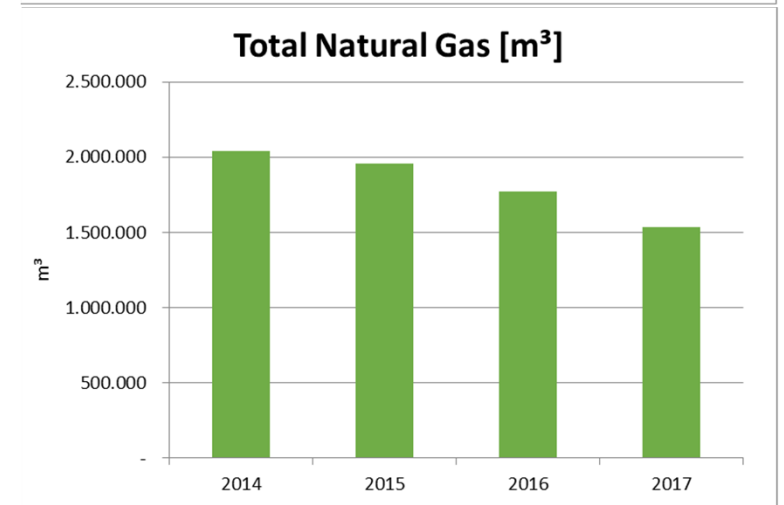
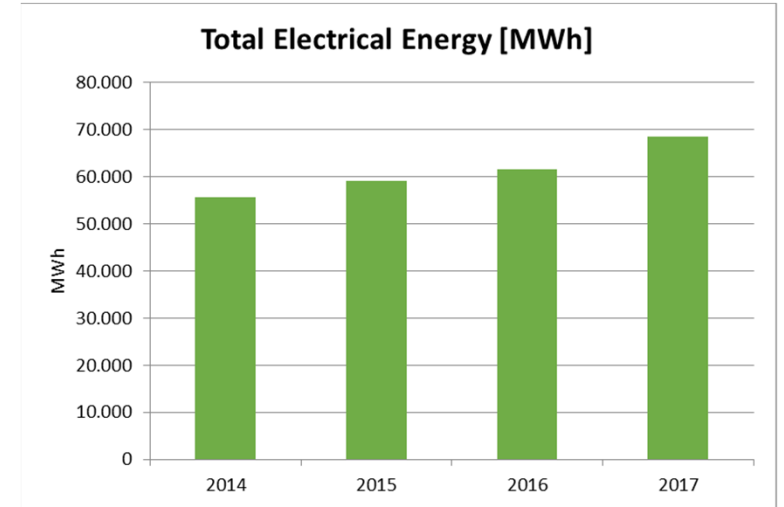
The scope of the report in hand is focusing the assessment of environmental impact of the manufacturing site in Premstaetten, Austria.

ams also acquired the Heptagon Group located in Singapore in 2017 and subsequently expanded its manufacturing capacities in Singapore. These new manufacturing sites are not included in the reporting yet, as the integration into the ams group's environmental management is still ongoing.

Environmental Performance, Austria

Electrical Energy, Natural Gas in 2017

- **68 529 MWh electrical energy** – increase by 11.4% due to drastically expansion of the ams wafer production in Austria, including increased headcount
 - The total energy is encompassing the energy needed for administration and offices, the energy required for manufacturing of CMOS and TSV wafer, plus the manufacturing in the filter line. In addition the heat pump (consuming electrical energy), which utilizes heat load of equipment to produce warm water, was fully running operational.
 - 100% renewable electricity, hydropower since 2011.
-
- **1 535 178 m³ natural gas** - decrease by 13.2% due to the change of the abatements and the full operation of the heat pump.

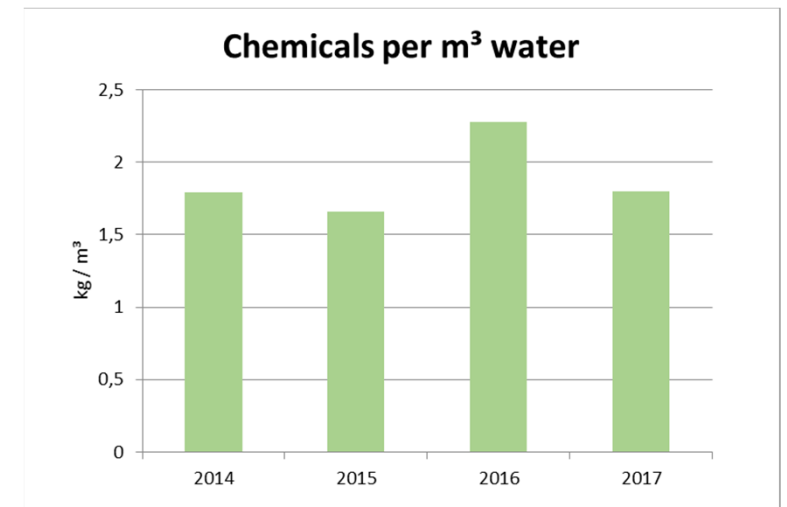
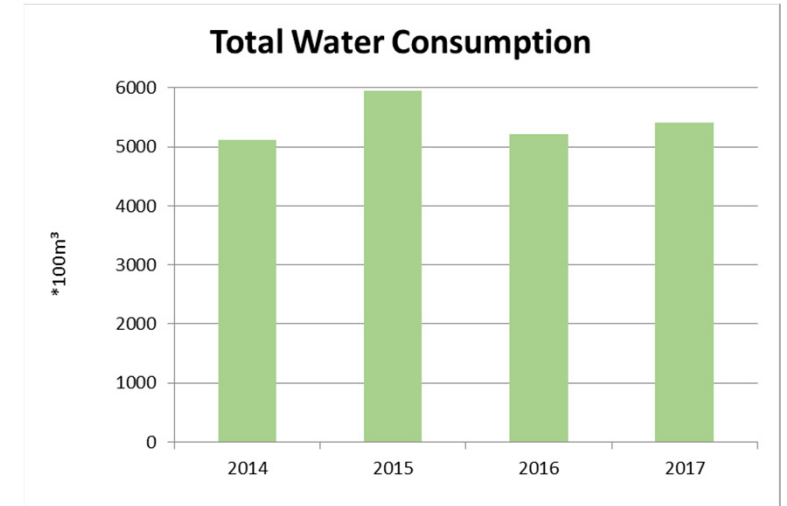


Environmental Performance, Austria

Water, Industrial Grade Chemicals in 2017

- **540 600 m³ water** – increase by 3.5% due to changes of product mix.
- Water is used for production of ultrapure water, softened cooling water, and as boiler feed water.

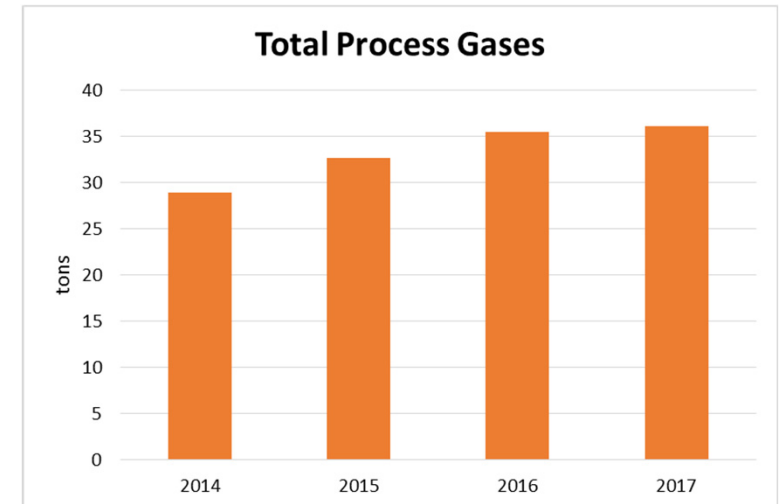
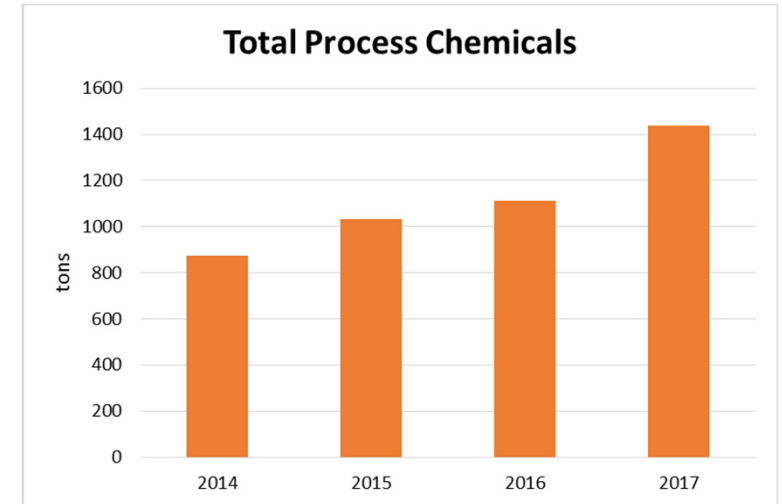
- **1.8 kg/m³ industrial grade chemicals for water** on average – decrease of 21% due to load of wafer production and usage of the water reclaim system.
- Chemicals for preparation of ultrapure water, for wastewater treatment and exhaust air purification.



Environmental Performance, Austria

Process Chemicals, Process Gases in 2017

- **1 437 tons process chemicals** – increase by 29.3% due to a manufacturing capacity increase.
- **36.1 tons process gases** – increase by 1.6% due to a manufacturing capacity increase. The consumption of process gases is depending on the production mix in the fab, where additional technologies are introduced.
- All gases which are consumed for the manufacturing of wafers are considered.

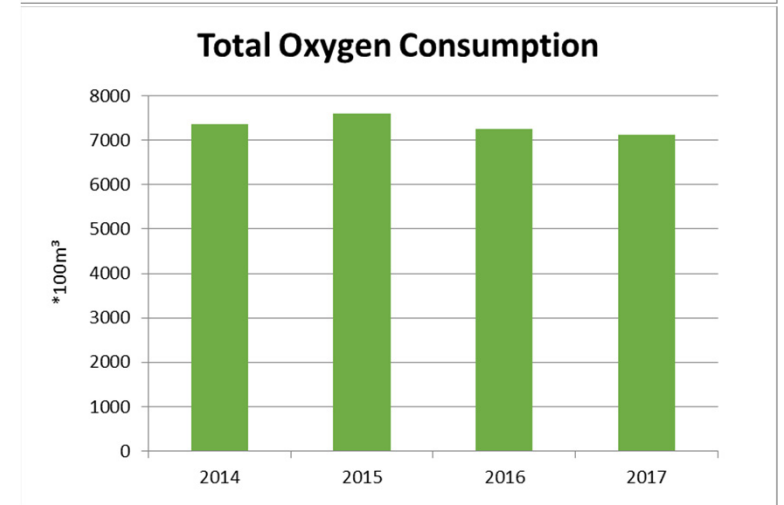
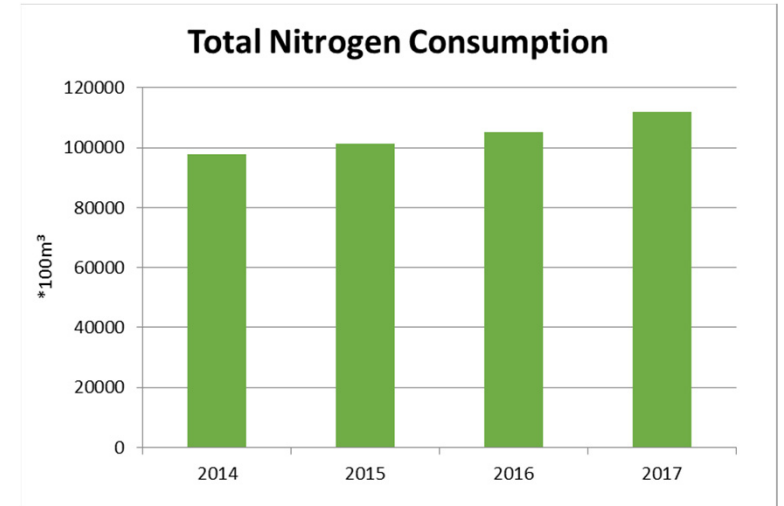


Environmental Performance, Austria

Nitrogen, Oxygen Consumption in 2017

- **11 206 400 m³ nitrogen**– increase of 6.6% due to changes of product mix.
- Liquid Nitrogen is not only used for production equipment, it is also used for maintaining the storage conditions.

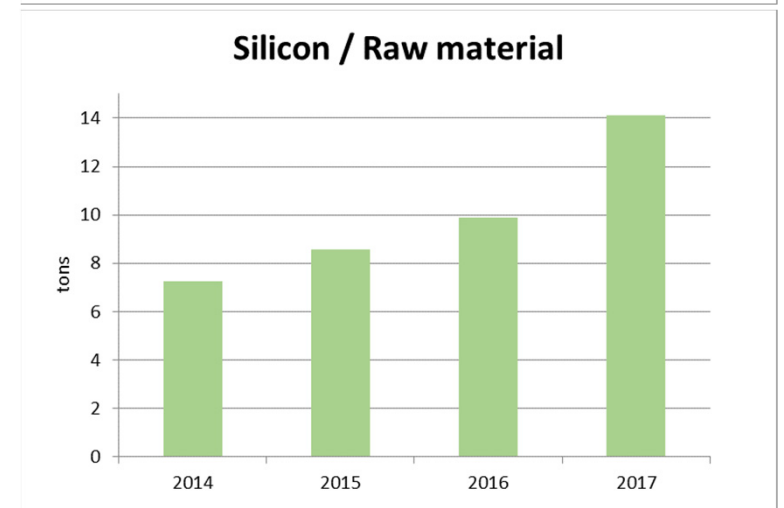
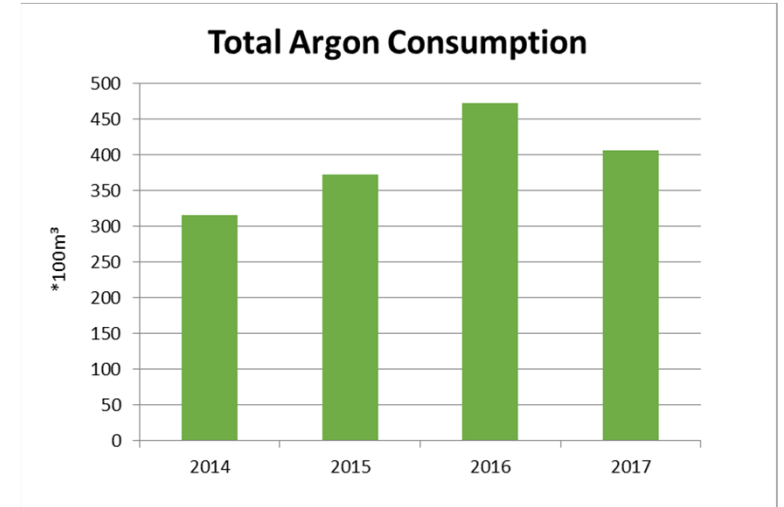
- **713 100 m³ oxygen** - decrease by 1.7% due to changes of product mix.



Environmental Performance, Austria

Argon, Silicon Consumption in 2017

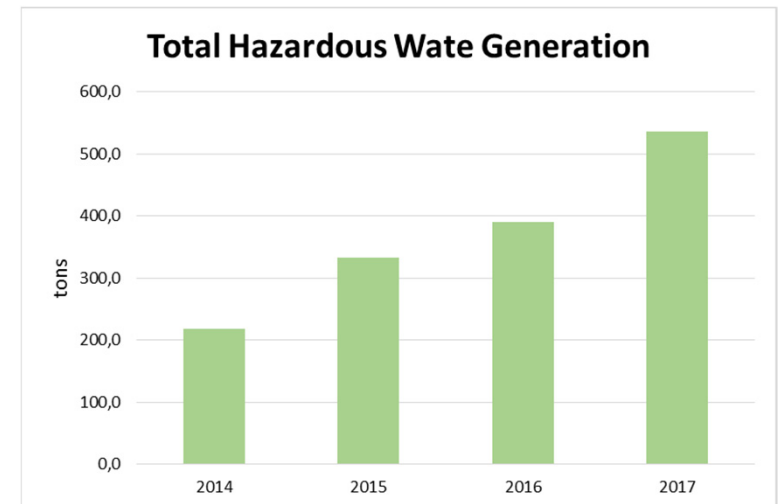
- **40 600 m³ argon** – decrease by 14.2% due to changes of product mix.
- **14.1 t silicon** was consumed – increase by 42.6%, which reflects the much higher production volume.
- Partially, the consumed silicon is from purchased consigned material – already processed wafers from outsourced foundries are purchased, and continued to be processed in ams wafer fab.



Environmental Performance, Austria

Non-hazardous Waste, Hazardous Waste in 2017

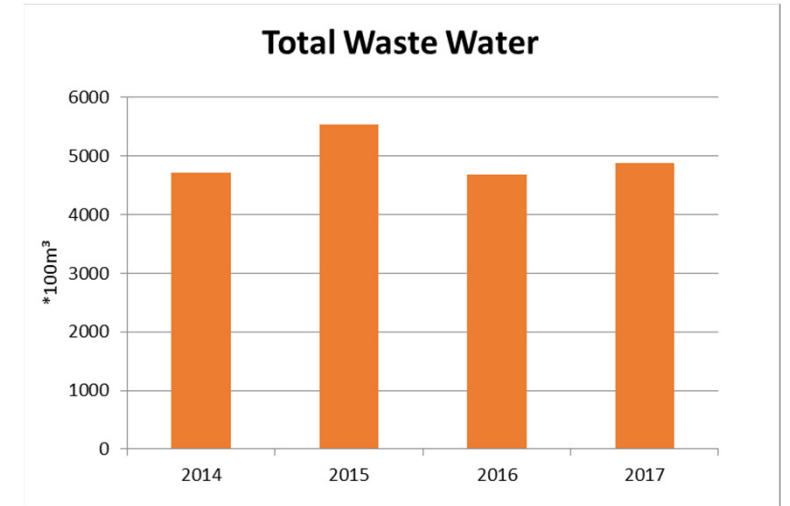
- **581.4 tons non-hazardous waste** was generated – increased by 14.6% due to increase of packaging materials from new equipment (79), construction activities, and increase of headcount (details in the waste management statistics).
- **535.2 tons hazardous waste** is generated – increase by 37.1% due to the ramp-up of a production line with a new process technology and a change of product mix.



Environmental Performance, Austria

Waste Water in 2017

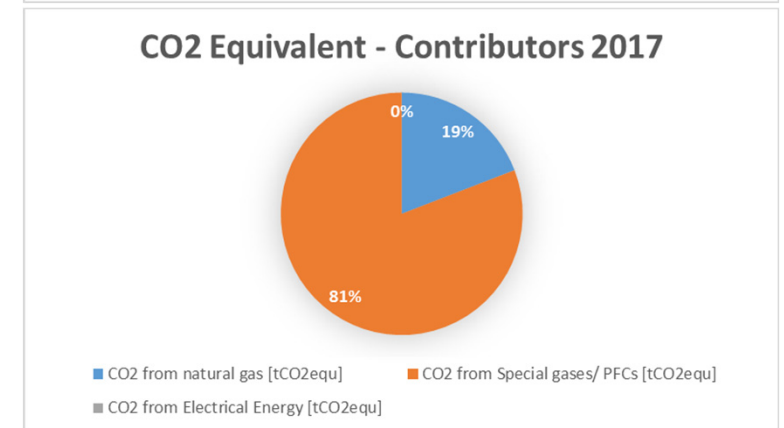
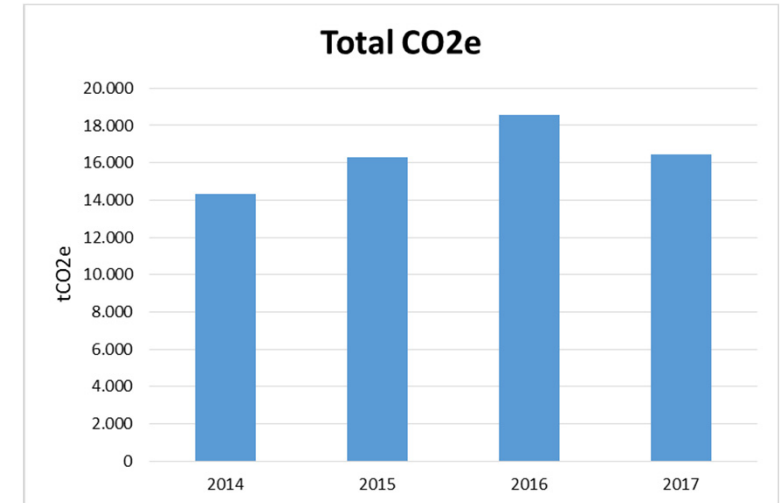
- **487 661 m³ waste water** is generated – increase by 4.1% due to the change of product mix.



Environmental Performance, Austria

Greenhouse Gas Emissions in 2017

- **16 439 tCO₂e** are generated for the site in Austria – total decrease by 11.4%. The decrease is achieved due to full operation of two heat pump systems and a decrease of 11% CO₂e caused from special (production) gases (compared to special gas consumption in 2016) that are identified as GHG potential.
- The CO₂ calculation is considering the usage of special (production) gases (PFCs, HFCs, SF₆, etc) and natural gas.
- 100% renewable electricity, hydropower since 2011 – therefore no CO₂e caused.





Thank you!

Please visit our website
www.ams.com