Explanatory notes to the information reported in the report “Sustainability at Infineon” – supplementing the Annual Report 2017

These explanatory notes refer to the sustainability information and data published in the report “Sustainability at Infineon” (hereinafter called Report). KPMG AG Wirtschaftsprüfungsgesellschaft has provided independent limited assurance on this information in accordance with the International Standards on Assurance Engagements 3000 and International Standard on Assurance Engagements 3410. The independent assurance report can be found here (www.infineon.com/CSR_reporting)[1].

Reporting standards

Infineon Technologies (hereinafter called Infineon) applies the Sustainability Reporting Guidelines (G4) of the Global Reporting Initiative, according to the “Core” option and as reporting criteria for the sustainability information published in the Report. This reporting standard is supported by internal guidelines too.

For the determination of the Infineon CO_2 footprint we have developed an own approach which became further refined during the 2017 fiscal year. This approach is generally oriented towards ISO 14000 and substantiated by PAS (Publicly Available Specification) 2050:2008, a guideline for product carbon footprints, issued by the BSI (British Standards Institution).

For external reporting we follow the “Greenhouse Gas Protocol” classification of Scope 1, Scope 2 and Scope 3 emissions. The Scope 2 Protocol has been considered too.

For the determination of the indicator “CO_2 savings enabled through our products” we have used internal criteria.

Organizational boundaries

Our reporting includes all our own production sites and corporate headquarters, R&D sites, sites for service functions, sales centers and small production sites.

The information reported on the chapters “Responsibility for our employees” and “Environmental sustainability” as well as on the section “The Infineon CO_2 footprint” of the chapter “Contribution through sustainable products” includes all our own production sites and corporate headquarters, which are part of our certified IMPRES[2] management system. This scope was selected based on the impact of the activities performed on those sites and comprises 97% of the total Infineon employees worldwide.

External companies operating at some of our sites, in which Infineon has no operational control, and which have no influence in Infineon’s production, are not included in the reported KPIs data.

Determination of the Key Performance Indicators (KPIs)

We continually strive to improve the data quality of our KPIs.

1 Selected information and key data in the chapter “Human resources management” are also part of the Combined Management Report as of 30 September 2017 of Infineon Technologies AG.

2 Infineon Integrated Management Program for Environment, Energy, Safety and Health

a. Energy

Infineon gives electricity and district heating to external consumers.

Energy consumption per revenue:

As a reference for the calculation of this KPI we have used the GRI G4 definitions. We have taken into account the following energy sources: Electricity, district heating, firewood, natural gas, LPG, gasoline/petrol, diesel and heating oil. The revenue figures used for the calculation are taken from the respective annual reports of the last years.

Total energy consumption:

As a reference for the calculation of this KPI we have used the GRI G4 definitions. We have taken into account all our energy sources:

- Infineon's energy consumption is made of electricity, district heating, firewood, natural gas, LPG, gasoline/petrol, diesel and heating oil.
- The individual energy consumption of our production sites is included in our reporting tool quarterly and automatically converted into the energy reference unit by the tool itself. The conversion factors included in our reporting tool in order to calculate the final energy consumption originate from the following sources:
    - UK Carbon Trust
    - National Energy Board, Government of Canada
    - Claverton Energy Research Group
    - FNR (Fachagentur Nachwachsende Rohstoffe) - German central coordinating institution for research, development and demonstration projects in the field of renewable resources.
    - UK Ministry - Department for Environment, Food & Rural Affairs (Defra)

Specific energy consumption:

Based on the normalization factor "cm^2 manufactured wafer", the electricity consumption's benchmark reported by the World Semiconductor Council (WSC) includes only the data of the worldwide Frontend sites included in IMPRES.

Energy consumption outside the organization:

Information is reported in CO_2-equivalents. The reporting was based on the definitions of the indicator G4-EN4:

- Upstream emissions are the ones incurred in connection with the provision of materials.
- Downstream emissions are the ones directly derived from production processes as well as and from internal and external transport.

b. Water

Water consumption:

In the water consumption are taken into consideration the reporting of both; water sourced by Infineon and water provided by third-parties (e.g. municipal water). Water which is used as cooling water or process water is included, too.

Specific water consumption:

In the water consumption benchmark reported by the World Semiconductor Council (WSC), cooling water is not considered. Based on to the normalization factor "cm^2 manufactured wafer", such benchmark includes only the data of the worldwide Frontend sites included in IMPRES.

Water reused and recycled:

Infineon defines water reused or recycled as the water which is used either without or with further treatment and which can be used in order to meet the water demand without using fresh water:

- Following water types are considered within reused wastewater:
    - Recovered wastewater for recycling in the same process
    - Recovered wastewater from a different process, but within the same facility
    - Wastewater, which is reused in another Infineon site

- Following water types are considered within reused ultrapure water:
    - Recovered ultrapure water for recycling in the same process
    - Recovered ultrapure water from a different process, but within the same facility
    - Ultrapure water, which is reused in another Infineon site

Water discharge:

The KPIs and targets related to water discharge include wastewater and other water discharges. Municipal wastewater and evaporated water are excluded.

Wastewater is classified as follows:
- Direct discharge: effluent discharged by the site without the need of prior-external treatment.
- Indirect discharge: water which is not allowed to be directly discharged or which needs prior treatment.

Water-stressed areas:

The determination of which sites are place in water-stressed areas was made by using the definition according to the WBCSD (World Business Council for Sustainable Development): "a water shortage exists when the total volume of renewable water resources available in a given area per capita is lower than 1,700 cubic meters per year". We performed a country-based analysis in February 2017 based on the so-called „Global Water Tool 2015" of the WBCSD[3].

c. PFCs[4]

PFCs are essential for the production of semiconductors in the Frontend sites. These are used in wafer-etching processes for structuring wafers as well as for cleaning production equipment. This includes Perfluorinated Compounds (PFCs), namely fluorinated and polyfluorinated carbon compounds, sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3). These greenhouse gases cannot be replaced by another class of substances and account for around 86 percent of Scope 1 emissions.

The reported PFCs figures refer to the amounts consumed during the respective fiscal year by Infineon.

The conversion of PFCs in CO_2 equivalents is based on a worldwide predetermined algorithm which must be used within the semiconductor industry. The conversion to CO_2-equivalents is based on a globally predetermined algorithm that must be applied within the semiconductor industry. Its calculation methodology is based on the scientific assessments of the IPCC[5] and the calculations for GWP[6]. The distribution of this algorithm is carried out annually by the competent organizations.

The calculation of the NER (normalized emission rate) is carried out as a normalization of PFC emissions in CO_2-equivalents divided by the manufactured wafer area.

d. Other emissions

Under „other emissions" we considered the following emissions:

- Sulphur oxide (SO_x): SO_2 and SO_3 expressed as SO_2-equivalent
- Nitrogen oxide (NO_x): NO and NO_2 expressed as NO_2-equivalents
- Volatile Organic Compounds (VOC): organic compound having an initial boiling point exceeding 250°C at a standard pressure of 101.3 kPa (Directive 2004/42 / EC)
- Persistent Organic Pollutants (POPs): according to Stockholm Convention
- Fine particulate matter (PM): Particles with a diameter of 10 or less micrometers (PM_{10})
- Carbon monoxide (CO): Carbon monoxide is produced from the partial oxidation of carbon-containing compounds with insufficient oxygen supply.

Only direct emissions (derived from Infineon activities) have been included in the reporting of this indicator. Resulting from a change in the calculation model, the data basis and the reported emissions were improved.

3 Status as of September 2015

4 Perfluorinated compounds

5 Intergovernmental Panel on Climate Change

6 Global Warming Potential - GWP is relevant for 100 years long

e. CO_2 footprint

We assessed the net ecological benefit on our CO_2 footprint considering both: environmental burden and environmental benefits.

Environmental burden - CO_2 emissions:

This includes the direct emissions such as PFC, emissions occurring during the deployment process of raw materials, consumables and process, energy and water supply as well as waste and wastewater treatment. Furthermore, it considers the transport of the products to other sites and to distribution centers, as well as flights and Infineon-function cars. Direct and indirect emissions are based on source data from fiscal year 2016.

Not included here is the CO_2 emitted during the use-phase of the products and their disposal. Those CO_2-emissions are not determined due to the varying applications and fields of use Infineon products are subject to.

The Scope 2 Guideline requires that companies calculate two values for their Scope 2 emissions and that they must identify: the so-called "market-based accounting", based on the provider-specific emission factor, and the so-called "location-based accounting" on the basis of regional or national network average. Considering the regional or national network average the Scope 2 emissions of Infineon amounted 705,748 tons CO_2. However, when considering the provider or product-specific emission factors, the Infineon Scope 2 emissions amount to 609,825 tons CO_2.

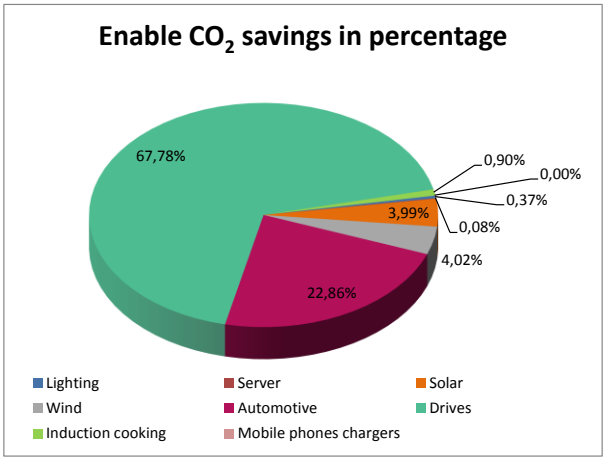
Infineon uses for its external reporting the final Scope 2 emissions taking into account provider-specific emission factors of the energy sources used. This approach was selected in order to illustrate the implementations achieved so far in terms of regenerative energy supply.

The following official sources were used as data sources for CO_2-conversion factors:

- DEFRA Carbon Factors (energy, transport, waste, water)
- International Energy Agency – Carbon conversion factors (Electricity)
- ProBas Substance Database (Raw materials and supplies)
- IPCC (PFCs)

Environmental benefit - CO_2 emissions:

Up to date, there is no established external framework or standard defining rules applicable for accounting and reporting of CO_2-savings enabled through products in the use phase. Therefore we have developed an own methodology to determine the indicator CO_2-savings enabled through our products. The calculation of the environmental benefit is based on the calendar year 2016, because the products sold in the calendar year 2016 enable reductions just in the use-phase of the end product (after being sold), and are then relevant for the CO_2 footprint 2017.



The methodology for the determination of the CO_2-emission reductions enabled is based on the framework conditions described here:

- Consideration of the following Infineon products: Automotive electronics, industrial drives, servers, lighting, photovoltaic, mobile phone chargers and wind energy as well as induction cookers.
- The calculation is based on the potential energy savings our semiconductors enable in the end technologies where they are installed.
- For the calculation, we consistently worldwide average emission factors of the calendar year 2016.
- For the calculation we considered the market share of Infineon as well as the percentage of semiconductors in the end-products and the lifetime of the technologies which was based on internal and external expert estimations.

Life-cycle assessments can be subject to imprecision due to the complex issues involved. We continually strive to refine and improve our carbon footprint methodology.

f. Waste

Reported waste is classified in the categories hazardous/non-hazardous as defined by the local/national regulations in that context.

The information reported in the “Environmental sustainability” chapter is based on the officially communicated treatment methods by the waste management companies. Per our definition waste is reported independently whether it is compensated or not.

Specific waste generation:
Based on the normalization factor “cm^2 manufactured wafer”, the waste generation’s benchmark reported by the World Semiconductor Council (WSC) includes just the worldwide Frontend sites included in IMPRES.

g. Occupational safety

Accidents
The calculations of the Injury Rate (IR) and the Lost Day Rate (LDR) are based on the GRI G4 definitions in LA6.

Only work-related accidents with at least one day work-absence are considered. The day of the accident is not counted. The base for the determination of lost days is “calendar days”.

The working hours are the weekly hours as stipulated in employee contracts. This includes holidays and public holidays.

The reporting of lost days concludes at the end of each fiscal year.

Training hours
The determination of the “training hours” is based on the training and continuing education for our specialized experts worldwide in the areas of occupational safety and health as well as in fire prevention. Based on the classification of the training hours the amount communicated in the report „Sustainability at Infineon“ 2016 (on page 18) changes from 54,993 to 40,194.

h. Product sustainable value

Examples: Power switches PROFET™+2 und High Current PROFET™

- Both products are manufactured with the new thin-wafer technology SMART7, that reduces power losses and chip sizes.
- Technology was specifically designed by Infineon for power switches used in automotive applications such as Body Control Modules or Power Distribution Centers.

- PROFET+2 devices are up to 40 percent smaller in package size and improve energy efficiency with 50 percent lower current consumption.
  PROFET+2 family was developed for automotive 12 V lighting load applications and capacitive loads. These comprise e. g. halogen bulbs in external lighting control, interior lighting and dimming, as well as LED lighting.

- High Current PROFET™ devices enable very efficient driving of high current loads. Also, it reduces power losses in control modules up to 60 percent.
  With its optimized feature set for 12 V high current loads, the family addresses a wide range of heating and power distribution applications. These comprise glow plug controller, starter relay, horn, trailer node, and auxiliary power outlet.

- A further feature of both families is a cranking voltage capability able to work down to 3.1 V.

Data Quality

We continually strive to improve the quality of our data via the implementation of policies, systems, procedures and internal controls at Group and site level.

In case of business acquisitions/sales, the figures of those would be adjusted in conformity with the organizational boundaries mentioned above. In those cases the numbers will not be retroactively included in the Report.

In case during the compilation of the quarterly data for the Report some official information for any of the reporting periods were not available, those figures would be adequately estimated based on the previous months' values and any other meaningful comparable values.

In case a significant error in the fiscal year (meaning greater than 5 percent at a Group level) was found, it would be corrected. In case a significant error which does not indeed affect the reporting period but still affects the information of the previous years was found, it would be corrected.

Published by
Infineon Technologies AG
85579 Neubiberg, Germany

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Date: 11 / 2017~~6~~

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