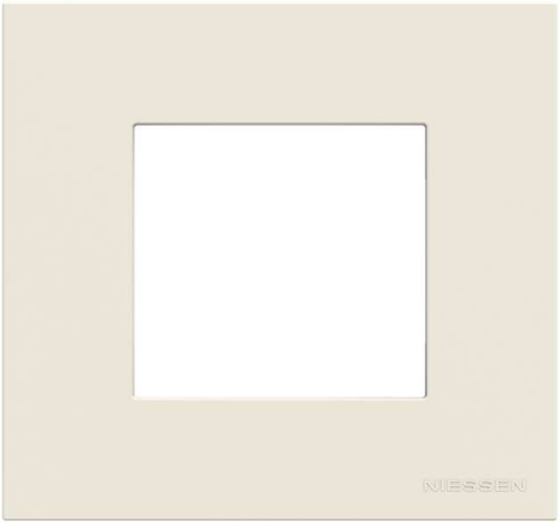
ZENIT SOLID FRAME

# Product Environmental Profile

## Environmental Product Declaration




Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

| ORGANIZATION | | CONTACT INFORMATION | | | |
|---|---|---|---|---|---|
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| STATUS | SECURITY LEVEL | REGISTRATION NUMBER | REV. | LANG. | PAGE |
| In Review | Internal | ABBG-00108-V01.02-EN | 1 | en | 1/13 |

# ABB Purpose & Embedding Sustainability

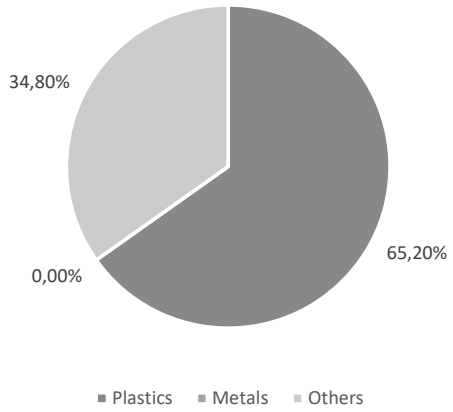
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow. With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

"other points or for exmaple a QR code or link to ABB website, where more information on the topic"

# General Information

| | |
|---|---|
| **Reference product** | Zenit Solid frame (2CLA227110N1101) |
| **Description of the product** | Zenit is the most complete modular wiring accessory product range in the market. The broadness of the accessories of Zenit, makes it flexible and adaptable to all needs. The Zenit range is eco-designed and certified by AENOR under ISO 14006. |
| **Functional unit** | Gotten from the used PSR |
| **Other products covered** | List of other products covered or a reference to page 9.10.11 |

# Constituent materials




| | |
|---|---|
| **Total weight of Reference product** | 29,75 g including the product and its packaging |

| **Plastics as % of weight** | | **Metals as % of weight** | | **Others as % of weight** | |
|---|---|---|---|---|---|
| Name and CAS number | Weight-% | Name and CAS number | Weight-% | Name and CAS number | Weight-% |
| PC | 65,20 | – | – | Packaging film | 0,00 |
| – | – | – | – | Boardbox (unit) | 19,40 |
| – | – | – | – | Boardbox (macro) | 9,60 |
| – | – | – | – | Pallet | 5,80 |

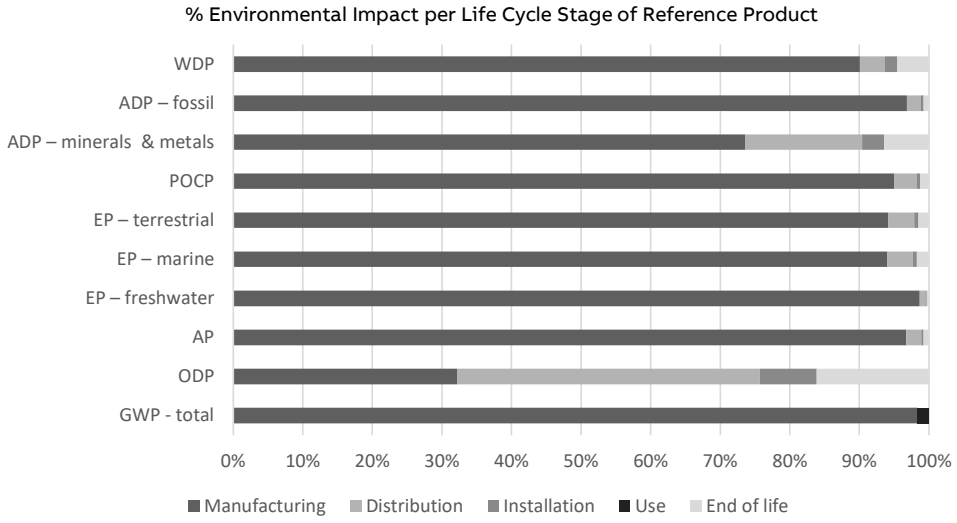
# Additional Environmental Information

| | |
|---|---|
| **Manufacturing** | Includes the environmental impacts associated with extraction and processing of the raw materials used to produce the product and its pacakging, transport to the manufacturing site and assembly. |
| **Distribution** | Includes the transportation in its pacakging from the manufacturer's last logistic platform to the distributor. |
| **Installation** | Installation stage includes the installation of the products made manually and the end of life of packaging. (Spain) |
| **Use** | Non-applicable |
| **End of life** | Includes its transportation from the installation site to the final end of life treatment site, and end of life treatment processes. A value of 300 km transport by lorry is used for the transportation. (Spain) |
| **Benefits and loads beyond the system boundaries** | Prevented impacts of recycling and waste-to-energy recovery materials |

# Environmental impacts

| | |
|---|---|
| **Reference lifetime** | 20 years |
| **Product category** | Frames |
| **Installation elements** | End of life of packaging |
| **Use scenario** | Europe |
| **Geographical representativeness** | Global |
| **Technological representativeness** | Materials and processes data are specific for the production of 2-way-switches and its family |
| **Software and database used** | SimaPro 9.3 and ecoinvent 3.8. |
| **Energy model used** | |
| **Manufacturing** | A specific mix of ABB's trading company has been used (Confidential) |
| **Installation** | Non-applicable |
| **Use** | Non-applicable |
| **End of life** | Recycling of product and packaging |

# Common base of mandatory indicators




## Environmental impact indicators

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| GWP-total | kg $CO_2$ eq. | 1,80E-01 | 1,71E-01 | 2,77E-03 | 2,06E-03 | 0,00E+00 | 4,08E-03 | -1,46E-01 |
| GWP-fossil | kg $CO_2$ eq. | 1,80E-01 | 1,73E-01 | 2,77E-03 | 5,61E-04 | 0,00E+00 | 4,08E-03 | -1,49E-01 |
| GWP-biogenic | kg $CO_2$ eq. | -7,45E-04 | -2,24E-03 | 2,43E-06 | 1,49E-03 | 0,00E+00 | 1,54E-06 | 2,59E-03 |
| GWP-luluc | kg $CO_2$ eq. | 2,05E-05 | 1,88E-05 | 1,11E-06 | 2,18E-07 | 0,00E+00 | 4,03E-07 | -5,13E-05 |
| GWP-fossil = Global Warming Potential fossil fuels<br>GWP-biogenic = Global Warming Potential biogenic<br>GWP-luluc = Global Warming Potential land use and land use change | | | | | | | | |
| ODP | kg CFC-11 eq. | 1,47E-09 | 4,71E-10 | 6,38E-10 | 1,24E-10 | 0,00E+00 | 2,37E-10 | -9,90E-10 |
| ODP = Depletion potential of the stratospheric ozone layer | | | | | | | | |
| AP | H+ eq. | 6,17E-04 | 5,97E-04 | 1,30E-05 | 2,41E-06 | 0,00E+00 | 4,75E-06 | -5,23E-04 |
| AP = Acidification potential, Accumulated Exceedance | | | | | | | | |
| EP-freshwater | kg P eq. | 2,27E-06 | 2,24E-06 | 1,92E-08 | 4,01E-09 | 0,00E+00 | 7,63E-09 | -2,30E-06 |
| EP-marine | kg N eq. | 1,04E-04 | 9,72E-05 | 3,78E-06 | 7,55E-07 | 0,00E+00 | 1,80E-06 | -9,77E-05 |
| EP-terrestrial | mol N eq. | 1,13E-03 | 1,06E-03 | 4,17E-05 | 8,26E-06 | 0,00E+00 | 1,70E-05 | -9,69E-04 |
| EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment<br>EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment<br>EP-terrestrial = Eutrophication potential, Accumulated Exceedance | | | | | | | | |
| POCP | kg NMVOC eq. | 3,95E-04 | 3,75E-04 | 1,25E-05 | 2,46E-06 | 0,00E+00 | 5,02E-06 | -3,30E-04 |
| POCP = Formation potential of tropo-spheric ozone | | | | | | | | |
| ADP-minerals & metals | kg Sb eq. | 5,64E-08 | 4,14E-08 | 9,49E-09 | 1,89E-09 | 0,00E+00 | 3,60E-09 | -6,16E-08 |
| ADP-fossil | MJ | 2,06E+00 | 1,99E+00 | 4,17E-02 | 8,16E-03 | 0,00E+00 | 1,54E-02 | -1,73E+00 |
| ADP-minerals & metals = Abiotic depletion potential for non-fossil resources<br>ADP-fossil = Abiotic deple-tion for fossil resources potential | | | | | | | | |
| WDP | $m^3$ e depr. | 1,33E-03 | 1,16E-03 | 4,55E-05 | 6,49E-05 | 0,00E+00 | 5,85E-05 | -4,00E-02 |
| WDP = Water Deprivation potential | | | | | | | | |

# Common base of mandatory indicators

### Inventory flows indicator – Resource use indicators

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| PERE | MJ | 5,95E+00 | 5,80E+00 | 1,25E-01 | 8,16E-03 | 0,00E+00 | 1,54E-02 | -8,39E-02 |
| PERM | MJ | 1,75E-01 | 1,75E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PERT | MJ | 6,13E+00 | 5,98E+00 | 1,25E-01 | 8,16E-03 | 0,00E+00 | 1,54E-02 | -8,39E-02 |
| PENRE | MJ | 5,54E+00 | 5,41E+00 | 1,25E-01 | 2,20E-06 | 0,00E+00 | 2,98E-06 | -1,73E+00 |
| PENRM | MJ | 5,68E-01 | 5,68E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PENRT | MJ | 6,11E+00 | 5,98E+00 | 1,25E-01 | 2,20E-06 | 0,00E+00 | 2,98E-06 | -1,73E+00 |

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials
PERM = Use of renewable primary energy resources used as raw materials
PERT = Total Use of renewable primary energy resources
PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total Use of non-renewable primary energy re-sources)

### Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy re-sources

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| SM | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | $m^3$ | 2,04E+00 | 2,00E+00 | 4,20E-02 | 1,59E-06 | 0,00E+00 | 2,98E-06 | -9,73E-04 |

SM = Use of secondary material
RSF = Use of renewable secondary fuels
NRSF = Use of non-renewable secondary fuels
FW = Use of net fresh water

### Inventory flows indicator – Waste category indicators

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| Hazardous waste disposed | kg | 2,04E+00 | 2,00E+00 | 4,18E-02 | 1,40E-03 | 0,00E+00 | 2,91E-03 | -1,58E-07 |
| Non- hazardous waste disposed | kg | 4,57E-03 | 4,41E-03 | 1,67E-04 | 5,42E-08 | 0,00E+00 | 1,03E-07 | -3,06E-03 |
| Radioactive waste disposed | kg | 2,04E+00 | 1,99E+00 | 4,18E-02 | 1,20E-04 | 0,00E+00 | 2,50E-04 | -3,70E-07 |

# Common base of mandatory indicators

### Inventory flows indicator – Output flow indicators

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| Components for re-use | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for recycling | kg | 2,67E-02 | 0,00E+00 | 0,00E+00 | 1,04E-02 | 0,00E+00 | 1,64E-02 | 0,00E+00 |
| Materials for energy recovery | kg | 1,16E-03 | 2,09E-04 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 9,51E-04 | 0,00E+00 |
| Exported energy | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

### Inventory flow indicator – other indicators

| Indicator | Unit | Total |
|---|---|---|
| Biogenic carbon content of the product | kg of C | 0,00E+00 |
| Biogenic carbon content of the associated packaging | kg of C | 4,96E-03 |

## Extrapolation factors

Extrapolation factorsFor other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

| Product name | Manufacturing | Distribution | Instal-lation | Use | End of life | Benefits |
|---|---|---|---|---|---|---|
| 2CLA217110N1102 | 0,95 | 0,95 | 0,89 | 1 | 0,95 | 0,95 |
| 2CLA217110N1302 | 0,95 | 0,95 | 0,89 | 1 | 0,95 | 0,95 |
| 2CLA217110N1802 | 0,95 | 0,95 | 0,89 | 1 | 0,95 | 0,95 |
| 2CLA217110N1902 | 0,95 | 0,95 | 0,89 | 1 | 0,95 | 0,95 |
| 2CLA227110N1102 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227110N1302 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227110N1802 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227110N1902 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227210N1102 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227210N1302 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227210N1802 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227210N1902 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227310N1102 | 2,67 | 2,67 | 3,32 | 1 | 2,67 | 2,67 |
| 2CLA227310N1302 | 2,67 | 2,67 | 3,32 | 1 | 2,67 | 2,67 |
| 2CLA227310N1802 | 2,67 | 2,67 | 3,32 | 1 | 2,67 | 2,67 |
| 2CLA227310N1902 | 2,67 | 2,67 | 3,32 | 1 | 2,67 | 2,67 |
| 2CLA227410N1102 | 2,88 | 2,88 | 3,52 | 1 | 2,88 | 2,88 |
| 2CLA227410N1302 | 2,88 | 2,88 | 3,52 | 1 | 2,88 | 2,88 |
| 2CLA227410N1802 | 2,88 | 2,88 | 3,52 | 1 | 2,88 | 2,88 |
| 2CLA227410N1902 | 2,88 | 2,88 | 3,52 | 1 | 2,88 | 2,88 |
| 2CLA217110N1101 | 0,81 | 0,81 | 0,89 | 1 | 0,81 | 0,81 |
| 2CLA217110N1301 | 0,81 | 0,81 | 0,89 | 1 | 0,81 | 0,81 |
| 2CLA217110N1801 | 0,81 | 0,81 | 0,89 | 1 | 0,81 | 0,81 |
| 2CLA217110N1901 | 0,81 | 0,81 | 0,89 | 1 | 0,81 | 0,81 |
| 2CLA227110N1101 | 0,89 | 0,89 | 1 | 1 | 0,89 | 0,89 |
| 2CLA227110N1301 | 0,89 | 0,89 | 1 | 1 | 0,89 | 0,89 |
| 2CLA227110N1801 | 0,89 | 0,89 | 1 | 1 | 0,89 | 0,89 |
| 2CLA227110N1901 | 0,89 | 0,89 | 1 | 1 | 0,89 | 0,89 |
| 2CLA227210N1101 | 1,6 | 1,6 | 1,79 | 1 | 1,6 | 1,6 |
| 2CLA227210N1301 | 1,6 | 1,6 | 1,79 | 1 | 1,6 | 1,6 |
| 2CLA227210N1801 | 1,6 | 1,6 | 1,79 | 1 | 1,6 | 1,6 |
| 2CLA227210N1901 | 1,6 | 1,6 | 1,79 | 1 | 1,6 | 1,6 |
| 2CLA227310N1101 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227310N1301 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227310N1801 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227310N1901 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227410N1101 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |
| 2CLA227410N1301 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |
| 2CLA227410N1801 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |
| 2CLA227410N1901 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |
| 2CLA227100Z1101 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227100Z1301 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227100Z1801 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227100Z1501 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227100Z6201 | 1 | 1 | 1 | 1 | 1 | 1 |

Extrapolation factorsFor other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

| Product name | Manufacturing | Distribution | Instal-lation | Use | End of life | Benefits |
|---|---|---|---|---|---|---|
| 2CLA227110Z6202 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2CLA227200Z1101 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227200Z1301 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227200Z1801 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227200Z1501 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227200Z6201 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227200Z6202 | 1,75 | 1,75 | 1,79 | 1 | 1,75 | 1,75 |
| 2CLA227300Z1101 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227300Z1301 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227300Z1801 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227300Z1501 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227300Z6201 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227310Z6202 | 2,43 | 2,43 | 3,32 | 1 | 2,43 | 2,43 |
| 2CLA227400Z1101 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |
| 2CLA227400Z1301 | 2,57 | 2,57 | 3,52 | 1 | 2,57 | 2,57 |

| | | | |
|---|---|---|---|
| Registration number: | | Drafting Rules: | PCR-ed4-EN-2021 09 06 |
| ABBG-00108-V01.02-EN | | Supplemented by: | PSR-0005-ed2-EN—2016 03 29 |
| Verifier accreditation number: | | Information and reference documents: | |
| VH32 | | www.pep-ecopassport.org | |
| Date of issue: | 03-2023 | Validity period: | 5 years |

Independent verification of the declaration and data, in compliance with ISO 14025: 2010

Internal ○ External ◉

The PCR review was conducted by a panel of experts chaired by
Philippe Osset (SOLINNEN)

PEP are compliant with XP C08-100-1: 2016
The elements of the present PEP cannot be compared with elements from another program

Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

# Environmental Impact Indicator Glossary

## Impact indicators

| Indicator | Description | Unit |
|---|---|---|
| Global warming potential (GWP) - total | Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. The total global warming potential (GWP-total) is the sum of three sub-categories of climate change.<br>GWP-total = GWP-fossil + GWP-biogenic + GWP- land use and land use change | kg $CO_2$ eq. |
| Ozone depletion (ODP) | Emissions to air that contribute to the destruction of the stratospheric ozone layer | kg CFC-11 eq. |
| Acidification of soil and water (A) | Acidification of soils and water caused by the release of certain gases to the atmosphere, such as nitrogen oxides and sulphur oxides | H+ eq. |
| Eutrophication (E) | Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc. This indicator is divided to three: freshwater, marine and terrestrial. | kg P eq., kg N eq., mole N eq. |
| Photochemical ozone creation (POCP) | Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun. | kg NMVOC eq. |
| Depletion of abiotic resources – elements (ADPe) | Indicator of the depletion of natural non-fossil resources | kg Sb eq. |
| Depletion of abiotic resources – fossil fuels (ADPf) | The use of non-renewable fossil resources in an unsustainable way (e.g. from material to waste) | MJ (lower heating value) |
| Water Deprivation potential (WDP) | Deprivation-weighted water consumption. Assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived. | $m^3$ e depr. |

## Resource use indicators

| Indicator | Description | Unit |
|---|---|---|
| Total use of primary energy | Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy re-sources (primary energy and primary energy resources used as raw materials) | MJ (lower heating value) |