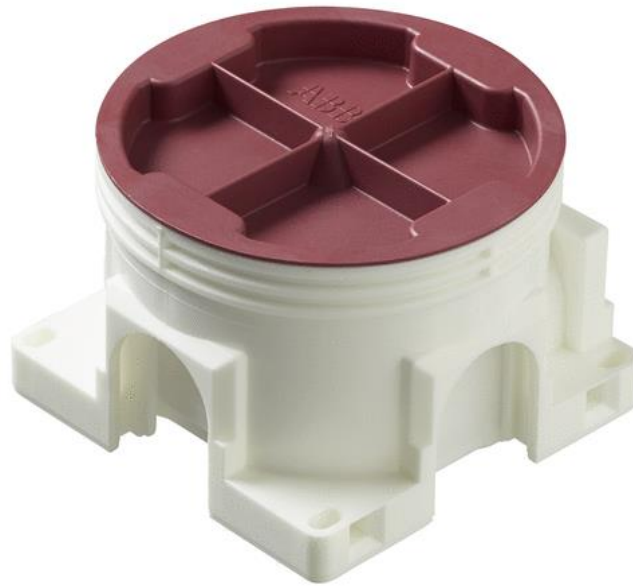


SYSTEM ABB MOUNTING BOXES

# Product Environmental Profile

## Environmental Product Declaration



Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

|                                     |                |                            |      |       |      |
|-------------------------------------|----------------|----------------------------|------|-------|------|
| ORGANIZATION                        |                | CONTACT INFORMATION        |      |       |      |
| ABB Oy, Wiring Accessories          |                | ella.helynranta@fi.abb.com |      |       |      |
| ADDRESS                             |                | WEBSITE                    |      |       |      |
| Porvoon Sisäkehä 2, Porvoo, Finland |                | www.abb.com                |      |       |      |
| STATUS                              | SECURITY LEVEL | REGISTRATION NUMBER        | REV. | LANG. | PAGE |
| Approved                            | Public         | ABBG-00152-V01.01-EN       | 1    | en    | 1/11 |



# 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.

Scan QR code for more information



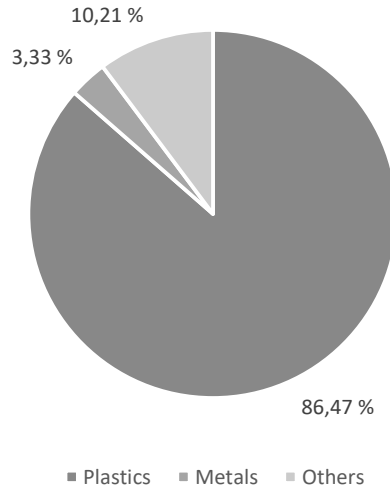
## General Information

|                                   |  |
|-----------------------------------|--|
| <b>Reference product</b>          | 2TKA130029G1 - AU3.2□  |
| <b>Description of the product</b> | The mounting box is designed for installation in all new buildings and in prefabricated building elements, and can be used with cast materials. It has a total of five knock-out inlets, two of which are on the same side. The bottom of the box provides access for two rear inlets. |
| <b>Functional unit</b>            | Protect persons during 20 years against direct contact with live parts and allow grouping monitoring, control, and protection devices in a single enclosure or a cabinet having the following dimensions 71 x 71 x 45 (mm).  |
| <b>Other products covered</b>     | The PEP covers other products from System ABB Mounting boxes boxes product range. Other products covered in this PEP are listed in page 9.   |

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# Constituent materials



**Total weight of Reference product**

42,00 g including the product and its packaging

| Plastics as % of weight |          | Metals as % of weight |          | Others as % of weight |          |
|-------------------------|----------|-----------------------|----------|-----------------------|----------|
| Description             | Weight-% | Description           | Weight-% | Description           | Weight-% |
| Polypropylene           | 75,63    | Carbon steel          | 3,33     | Carton                | 10,21    |
| Recycled polypropylene  | 10,48    | -                     | -        | -                     | -        |
| PE-based red color      | 0,36     | -                     | -        | -                     | -        |

The reference product and the other products in this range comply with the RoHS Directive 2011/65/EU (covering 2015/863 (EU)) and national legislation. The plastic materials used in products are also halogen free materials (IEC/61249-2-21) and recyclable. The recycled polypropylene is from post-consumer recycled waste, which is collected from Finnish households.

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## Additional Environmental Information

|  |  |
|--|--|
| <b>Manufacturing</b>                                   | Manufactured at ABB Oy, Wiring Accessories ISO 14001 certified production site, with renewable energy: Hydro- and wind power (50/50)   |
| <b>Distribution</b>                                    | Product distribution optimised by setting up local distribution centres. Packaging weight 4,29 g, consisting of cardboard (100%).  |
| <b>Installation</b>                                    | The product does not require special installation procedure and requires little to no energy to install. The disposal of the packaging materials is accounted during the installation phase. |
| <b>Use</b>   | The product does not require special maintenance operations  |
| <b>End of life</b>                                     | No special end-of-life treatment required. This product can enter the usual end-of-life treatment process according to countries' best practices.  |
| <b>Benefits and loads beyond the system boundaries</b> | Net benefits and loads calculated according to PCR ed 4 and formulas given in Annex G of the EN 50693  |



## Environmental impacts

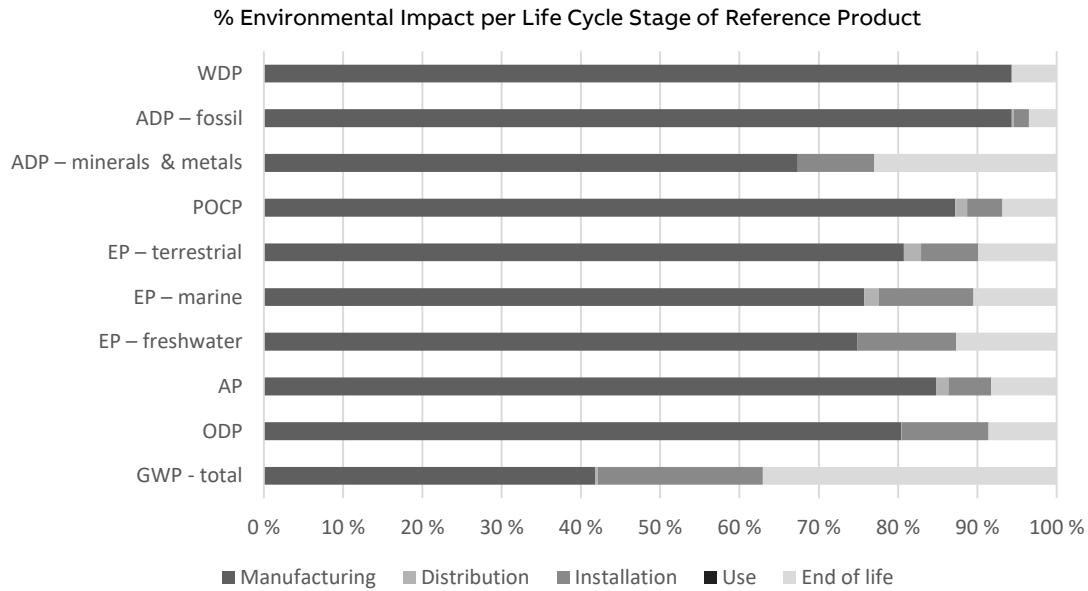
|   |   |
|---|---|
| <b>Reference lifetime</b>               | 20 years  |
| <b>Product category</b>                 | Unequipped enclosures and cabinets  |
| <b>Installation elements</b>            | No additional elements needed   |
| <b>Use scenario</b>                     | Non applicable for unequipped enclosures and cabinets                                     |
| <b>Geographical representativeness</b>  | Europe, with great emphasis on Finland  |
| <b>Technological representativeness</b> | The manufacturing processes considered are representative of the products production      |
| <b>Software and database used</b>       | Software: SimaPro version 9.4.0.2<br>Database: ecoinvent 3.8, Industry data 2.0, and ELCD |

### Energy model used

|                      |   |
|----------------------|---|
| <b>Manufacturing</b> | Manufacturing plant: Porvoo, Finland                  |
| <b>Installation</b>  | Electricity, low voltage {FI} market for   Cut-off, S |
| <b>Use</b>           | -   |
| <b>End of life</b>   | Electricity, low voltage {FI} market for   Cut-off, S |

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## Common base of mandatory indicators



### Environmental impact indicators

| Indicator   | Unit                   | Total          | Manu-<br>facturing | Distri-<br>bution    | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|---|------------------------|----------------|--------------------|----------------------|-------------------|-----------|----------------|---------------|
| GWP-total   | kg CO <sub>2</sub> eq. | 1,359E-01      | 5,678E-02          | 4,736E-04            | 2,830E-02         | 0,000E+00 | 5,035E-02      | -2,563E-02    |
| GWP-fossil  | kg CO <sub>2</sub> eq. | 1,396E-01      | 7,362E-02          | 4,737E-04            | 1,525E-02         | 0,000E+00 | 5,028E-02      | -2,809E-02    |
| GWP-biogenic  | kg CO <sub>2</sub> eq. | -3,988E-03     | -1,705E-02         | -6,358E-08           | 1,302E-02         | 0,000E+00 | 3,800E-05      | 2,540E-03     |
| GWP-luluc   | kg CO <sub>2</sub> eq. | 2,635E-04      | 2,179E-04          | 0,000E+00            | 2,154E-05         | 0,000E+00 | 2,405E-05      | -8,225E-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.          | 3,490E-09      | 2,806E-09          | 7,078E-13            | 3,838E-10         | 0,000E+00 | 2,997E-10      | -1,134E-09    |
| ODP = Depletion potential of the stratospheric ozone layer  |                        |                |                    |                      |                   |           |                |               |
| AP  | H+ eq.                 | 3,427E-04      | 2,908E-04          | 5,101E-06            | 1,858E-05         | 0,000E+00 | 2,823E-05      | -1,056E-04    |
| AP = Acidification potential, Accumulated Exceedance  |                        |                |                    |                      |                   |           |                |               |
| EP-freshwater   | kg P eq.               | 1,246E-05      | 9,323E-06          | 1,751E-10            | 1,553E-06         | 0,000E+00 | 1,584E-06      | -5,572E-06    |
| EP-marine   | kg N eq.               | 9,587E-05      | 7,258E-05          | 1,791E-06            | 1,145E-05         | 0,000E+00 | 1,004E-05      | -2,268E-05    |
| EP-terrestrial  | mol N eq.              | 9,053E-04      | 7,310E-04          | 1,964E-05            | 6,527E-05         | 0,000E+00 | 8,941E-05      | -2,348E-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.           | 3,288E-04      | 2,867E-04          | 4,952E-06            | 1,467E-05         | 0,000E+00 | 2,246E-05      | -9,108E-05    |
| POCP = Formation potential of tropo-spheric ozone   |                        |                |                    |                      |                   |           |                |               |
| ADP-minerals & metals   | kg Sb eq.              | 2,822E-07      | 1,901E-07          | 1,835E-11            | 2,724E-08         | 0,000E+00 | 6,488E-08      | -1,545E-07    |
| ADP-fossil  | MJ                     | 2,803E+00      | 2,644E+00          | 6,502E-03            | 5,408E-02         | 0,000E+00 | 9,849E-02      | -9,559E-01    |
| ADP-minerals & metals = Abiotic depletion potential for non-fossil resources<br>ADP-fossil = Abiotic depletion for fossil resources potential   |                        |                |                    |                      |                   |           |                |               |
| WDP   | m <sup>3</sup> e depr. | 6,225E-02      | 5,872E-02          | 1,758E-06            | 1,758E-06         | 0,000E+00 | 3,527E-03      | -1,885E-02    |
| WDP = Water Deprivation potential   |                        |                |                    |                      |                   |           |                |               |
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| Approved  |                        | Public         |                    | ABBG-00152-V01.01-EN |                   | 1         | en             | 5/11          |

## Common base of mandatory indicators

### Inventory flows indicator – Resource use indicators

| Indicator | Unit | Total     | Manu-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|-----------|------|-----------|--------------------|-------------------|-------------------|-----------|----------------|---------------|
| PERE      | MJ   | 4,410E-01 | 4,115E-01          | 7,320E-06         | 8,852E-03         | 0,000E+00 | 2,065E-02      | -1,163E-01    |
| PERM      | MJ   | 5,512E-02 | 5,512E-02          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| PERT      | MJ   | 4,961E-01 | 4,666E-01          | 7,320E-06         | 8,852E-03         | 0,000E+00 | 2,065E-02      | -1,163E-01    |
| PENRE     | MJ   | 1,087E+00 | 9,293E-01          | 6,502E-03         | 5,399E-02         | 0,000E+00 | 9,759E-02      | -9,530E-01    |
| PENRM     | MJ   | 1,714E+00 | 1,714E+00          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| PENRT     | MJ   | 2,801E+00 | 2,643E+00          | 6,502E-03         | 5,399E-02         | 0,000E+00 | 9,759E-02      | -9,530E-01    |

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 resources

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

| Indicator | Unit           | Total     | Manu-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|-----------|----------------|-----------|--------------------|-------------------|-------------------|-----------|----------------|---------------|
| SM        | kg             | 7,557E-03 | 7,557E-03          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| RSF       | MJ             | 0,000E+00 | 0,000E+00          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| NRSF      | MJ             | 0,000E+00 | 0,000E+00          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| FW        | m <sup>3</sup> | 8,195E-04 | 6,515E-04          | 5,702E-08         | 4,639E-05         | 0,000E+00 | 1,215E-04      | -3,262E-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-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|------------------------------|------|-----------|--------------------|-------------------|-------------------|-----------|----------------|---------------|
| Hazardous waste disposed     | kg   | 1,475E-06 | 1,319E-06          | 0,000E+00         | 7,861E-08         | 0,000E+00 | 7,744E-08      | -5,338E-07    |
| Non-hazardous waste disposed | kg   | 2,836E-03 | 2,525E-03          | 1,626E-05         | 8,784E-05         | 0,000E+00 | 2,074E-04      | -1,977E-04    |
| Radioactive waste disposed   | kg   | 3,816E-06 | 2,723E-06          | 1,150E-08         | 2,002E-07         | 0,000E+00 | 8,815E-07      | -2,807E-06    |

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## Common base of mandatory indicators

### Inventory flows indicator – Output flow indicators

| Indicator                     | Unit | Total     | Manu-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|-------------------------------|------|-----------|--------------------|-------------------|-------------------|-----------|----------------|---------------|
| Components for re-use         | kg   | 5,777E-04 | 0,000E+00          | 0,000E+00         | 5,777E-04         | 0,000E+00 | 0,000E+00      | 0,000E+00     |
| Materials for recycling       | kg   | 1,928E-02 | 0,000E+00          | 0,000E+00         | 5,976E-03         | 0,000E+00 | 1,331E-02      | 0,000E+00     |
| Materials for energy recovery | kg   | 3,322E-02 | 0,000E+00          | 0,000E+00         | 1,360E-02         | 0,000E+00 | 1,962E-02      | 0,000E+00     |
| Exported energy               | MJ   | 0,000E+00 | 0,000E+00          | 0,000E+00         | 0,000E+00         | 0,000E+00 | 0,000E+00      | 0,000E+00     |

### Inventory flow indicator – other indicators

| Indicator   | Unit    | Total     |
|---|---------|-----------|
| Biogenic carbon content of the product              | kg of C | 0,000E+00 |
| Biogenic carbon content of the associated packaging | kg of C | 1,930E-03 |

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## Optional indicators

### Environmental indicators

| Indicator   | Unit                               | Total     | Manu-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use       | End<br>of life | Bene-<br>fits |
|---|------------------------------------|-----------|--------------------|-------------------|-------------------|-----------|----------------|---------------|
| Total use of primary energy during the life cycle | MJ                                 | 3,297E+00 | 3,110E+00          | 6,509E-03         | 6,284E-02         | 0,000E+00 | 1,182E-01      | -3,434E+00    |
| Emissions of fine particles                       | inci-<br>dence<br>of dis-<br>eases | 4,184E-09 | 3,747E-09          | 3,421E-11         | 1,851E-10         | 0,000E+00 | 2,179E-10      | 9,282E-11     |
| Ionizing radiation, human health                  | kBq<br>U235<br>eq.                 | 8,605E-03 | 4,058E-03          | 1,125E-06         | 7,037E-04         | 0,000E+00 | 3,841E-03      | -1,936E-02    |
| Ecotoxicity (fresh water)                         | CTUe                               | 8,775E-01 | 6,041E-01          | 3,139E-04         | 9,434E-02         | 0,000E+00 | 1,788E-01      | -6,583E+01    |
| Human toxicity, carcinogenic effects              | CTUh                               | 1,116E-10 | 6,301E-11          | 8,111E-15         | 4,342E-12         | 0,000E+00 | 4,425E-11      | 7,791E-10     |
| Human toxicity, non-carcinogenic effects          | CTUh                               | 9,446E-10 | 5,866E-10          | 2,012E-13         | 9,857E-11         | 0,000E+00 | 2,593E-10      | -1,062E-07    |
| Impact related to land use/soil quality           |                                    | 1,675E+00 | 1,612E+00          | 0,000E+00         | 2,817E-02         | 0,000E+00 | 3,471E-02      | -2,433E+00    |

### Other indicators

| Indicator                | Unit | Total | Manu-<br>facturing | Distri-<br>bution | Instal-<br>lation | Use | End<br>of life | Bene-<br>fits |
|--------------------------|------|-------|--------------------|-------------------|-------------------|-----|----------------|---------------|
| No Other indicators used |      |       |                    |                   |                   |     |                |               |

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For 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 | Installation | Use  | End of life | Benefits |
|-------------------------|---------------|--------------|--------------|------|-------------|----------|
| 2TKA00001097<br>AU3.24  | 1,43          | 0,87         | 1,00         | 1,00 | 1,44        | 1,43     |
| 2TKA00001452<br>AU3.2P  | 1,28          | 1,62         | 4,46         | 1,00 | 1,00        | 1,58     |
| 2TKA001737G1<br>AU3.2PP | 1,00          | 0,68         | 1,01         | 1,00 | 1,00        | 1,00     |
| 2TKA001739G1<br>AU5.2PP | 1,30          | 0,81         | 1,01         | 1,00 | 1,32        | 1,33     |
| 2TKA001740G1<br>AU5.32  | 1,72          | 2,18         | 1,73         | 1,00 | 1,70        | 1,83     |
| 2TKA130030G1<br>AU3.32  | 1,43          | 1,14         | 1,24         | 1,00 | 1,50        | 1,59     |
| 2TKA130031G1<br>AU5.2   | 1,29          | 3,62         | 1,00         | 1,00 | 1,32        | 1,33     |
| 2TKA00001461<br>AU5.2P  | 1,58          | 1,76         | 4,46         | 1,00 | 1,32        | 1,91     |
| 2TKA130032G1<br>AU6.2   | 1,02          | 0,97         | 0,98         | 1,00 | 1,05        | 1,08     |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |
| -                       | -             | -            | -            | -    | -           | -        |

|   |                      |  |   |
|---|----------------------|--|---|
| Registration number:  | ABBG-00152-V01.01-EN | Drafting Rules:  | PCR-ed4-EN-2021 09 06   |
| Verifier accreditation number:  | VH08                 | Supplemented by:   | PSR-0005-ed2-EN-2016 03 29  |
| Date of issue:  | 04-2023              | Information and reference documents:   | www.pep-ecopassport.org   |
| Validity period:  | 5 years              | Independent verification of the declaration and data, in compliance with ISO 14025: 2006 |   |
| Internal <input type="radio"/>  |                      | External <input checked="" type="radio"/>  |   |
| <p>The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)</p> <p>PEP are compliant with XP C08-100-1:2016 or EN 50963:2019<br/>                 The elements of the present PEP cannot be compared with elements from any another program.</p> <p>Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"</p> |                      |  |   |
|   |                      |  |  |

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## 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 <sub>2</sub> 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.,<br>kg N eq.,<br>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 <sup>3</sup> 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) |

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