# Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

**Icopal Macoflex YAP 2200**


From

## BMI Sweden

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB |
| EPD registration number: | **EPD-IES-0009136** |
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*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.*

# General information

## Programme information

| | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | info@environdec.com |

| **Accountabilities for PCR, LCA and independent, third-party verification** |
|---|
| **Product Category Rules (PCR)** |
| Core Product Category Rules (PCR): EN15804+A2 |
| Product level PCR standard: PCR 2019:14 Construction products (1.3.4),<br>c-PCR-032 Flexible sheets waterproofing |
| Programme operator horizontal PCR: PCR 2019:14 Construction products (EN 15804+A2) (1.3.4) |
| PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact |
| **Life Cycle Assessment (LCA)** |
| LCA accountability: Lars Åhsberg, BMI Group, Sweden |
| LCA/EPD Tool: R<THINK by Nibe, The Netherlands |
| **Third-party verification** |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:<br>X EPD verification by individual verifier<br>Third-party verifier: Agnieszka Pikus,Greenwise<br>Approved by: The International EPD® System |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br>☐ Yes X No |

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

# Company information

## Owner of the EPD:

**BMI Group Sweden**
Pulpetgatan 20
SE-215 37 MALMÖ
SWEDEN

kundservice@bmigroup.com
https://www.bmigroup.com/se/

**Contact**
Lars Åhsberg, Nordic Environmental Manager, BMI Group Nordics
+46 (0)70 604 50 46, lars.ahsberg@bmigroup.com

## Description of the organisation:

BMI Sweden, with more than 100 years of experience, gathers the brands Monier, Icopal and Siplast under one roof and is one of the leading suppliers of roofing and waterproofing solutions in Sweden. We offer a comprehensive range of steep and low-pitched roofs as well as other systems that protect buildings against water, moisture and radon.BMI Sweden's headquarters and the bitumen roofing factory is located in Malmö in the south of Sweden. BMI Sweden employs approximately 200 people.

BMI Sweden is part of the BMI Group, which is Europe's largest roofing manufacturer. BMI Group has united some of the most trusted local brands in the industry to become Europe's largest supplier of pitched and flat roofing solutions, offering customers over 280 years of experience and innovation. BMI Group, headquartered in the United Kingdom under Standard Industries, benefits from the global support, reach, and resources of the parent company. With over 120 production sites across Europe, Africa, and Asia and over 9,600 employees worldwide, BMI Group is well positioned to provide unparalleled service to homeowners, designers, contractors, property owners, and developers.
from us.

## Product-related or management system-related certifications:

The production operations in the BMI Malmö site are certified in accordance with ISO 9001:2015.

## Name and location of production site:

The declared products are produced at BMI Sweden, production site Malmö in Sweden.
Adress: Lodgatan 10, SE-211 24 Malmö, Sweden.

For more information regarding the product or the organisation, see EPD owner’s website:
https://www.bmigroup.com/se/

# Product information

## Product name: Icopal Macoflex YAP 2200

## Product description and identification:

Macoflex is a traditional bitumen roof underlay specifically designed for application over wooden substrates beneath interlocking concrete, clay and metal roof tiles, as well as shingles. It complies with AMA Hus standards, Chapter JSC.1 (YAP 2200), ensuring quality and reliability.

Macoflex provides durable and robust protection, even for roofs with slopes as low as 1.5°, depending on the requirements of the selected roofing material. The product is engineered to resist mechanical wear, offers UV protection for up to three months, and maintains excellent flexibility, making it suitable for a wide range of roofing projects.

Macoflex is built with a polyester reinforcement that provides optimal tensile strength and elongation at break. The reinforcement is impregnated and coated with elastic asphalt, delivering enhanced durability and resistance to environmental stressors. The edges of the underlay feature a pre-applied adhesive surface, enabling a secure asphalt-to-asphalt seal during installation, ensuring superior waterproofing and long-term reliability.

The declared product is expected to fulfil its function for 50 years.

*Table. Technical data*

| Product | Item nr | Overlap (%) | Weight (kg/ $m^2$) * | Roll weight (kg) |
|---|---|---|---|---|
| Macoflex YAP 2200 | 10006464 | 11.4% | 2.38 | 23 |

**including overlap*

## Manufacturing process

The manufacturing takes place at BMI Sweden´s production site in Malmö, Sweden.

The bitumen blend is mixed and stored in big holding tanks before being pumped to the production line. The polyester reinforcement is running through the production line and is applied with different layers of bitumen blends, sand and lastly polypropylene foil is applied on the backside of the self adhesive parts of the product. The finished product is rolled, packed on pallets and supported with additional packaging before being sent to customers.

The manufacturing process includes the energy- and fuel consumption and emissions on site, production of all packaging materials and treatment of waste generated in the manufacturing process.

## UN CPC code:

5453 Roofing and waterproofing services

## Geographical scope:

All inventories are modelled with respect to their specific origin when applicable. All life cycle stages are modelled by Sweden.

# LCA information

## Declared unit:

1 m² installed bitumen roof underlay, including 11.4% overlaps, produced by BMI Malmö, from cradle-to-grave and D for a study period of 50 years for the building.

The weight per 1 $m^2$ installed roof (including overlap) is 2.38 kg and the conversion factor to 1 kg is 0.42 $m^2$.

## Expected life time:

50 years.

## Time representativeness and data quality:

The specific data collected regarding manufacturing, packaging, suppliers and transports refer to the production year 2023. The data collection was performed by the EPD owner. Background data is based on EPD´s and Ecoinvent 3.10. Foreground data is <2 years and background data <10 years.

The quality of the used data for the EPD has been accessed per item in terms of its time, geography and technology representativeness using EN 15804:2012+A2:2019, Annex E, E2. The overall data quality has been accessed by creating a weighted average on the basis of individual quality levels and the GWP-total for modules A1-C4.

**Overall data quality:**

| | |
|---|---|
| Geographical representativeness: | Good |
| Technical representativeness: | Good |
| Time representativeness: | Very Good |

## Database(s) and LCA software used:

| | |
|---|---|
| LCA method R<THiNK: | EN15804+A2:2019 |
| LCA software: | Simapro 9.1.1 (aligned with EF 3.1) |
| Characterization method: | EN 15804 +A2 Method v1.0 |
| LCA database profiles: | EcoInvent version 3.10 |

## Description of system boundaries:

The system boundary of the EPD adheres to the modular approach outlined in EN 15804:2012+A2:2019. This EPD shows cradle-to-grave and module D with activities needed for a study period of 50 years for the building. No capital goods or infrastructure are included within the system boundaries.

## Allocation used:

| Environmental profile / dataset used | Explanation of used allocation method |
|---|---|
| Bitumen production final LCI - EUROBITUME 2021 System, with infrastructures [Eurobitume] | The allocation between bitumen and other co-products made from crude oil is based on mass balances at the crude oil extraction and the transport stages. At the refining level, the allocation is based on relative economic values. Source = Eurobitume. |

Mass balance approaches (MBAs), to claim, for example, biobased, renewable, and/or recycled product content, are not applied.

## Cut-off Criteria:

**Product stage (A1-A3):**
The production stage consists of the extraction of all raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, external treatments, ancillary materials, packaging material and production emissions are included. The total neglected input flows for A1-A3 do not exceed the limit of 5% of energy use and mass.

**Construction process stage (A4-A5)**
This stage consists of the transport of the product from the production plant to the construction site. It also includes installation waste. The additional needed production, transport and end-of-life of the installation waste is included. The end-of-life of packaging material up to the end-of-waste state or disposal of final residues is also included. The installation of the product including manufacture, transportation and end-of-life of ancillary materials and any energy or water use required for installation or operation of the construction site are taken into account. The total neglected input flows for A4-A5 do not exceed the limit of 5% of energy use and mass. The included scenarios, according to the LCA Report, are currently in use and represent the most likely alternatives.

**Use stage (B1-B7)**
There are no environmental impacts caused by the product during its use stage. There are no emissions (B1) and no consumption of raw materials. There is no need for maintenance (B2), repair (B3), replacements (B4) or refurbishments (B5) during the use of the product in standard conditions. The product does not consume energy (B6) or water (B7) during its operational life. The included scenarios, according to the LCA Report, are currently in use and are representative for the most probable alternatives.

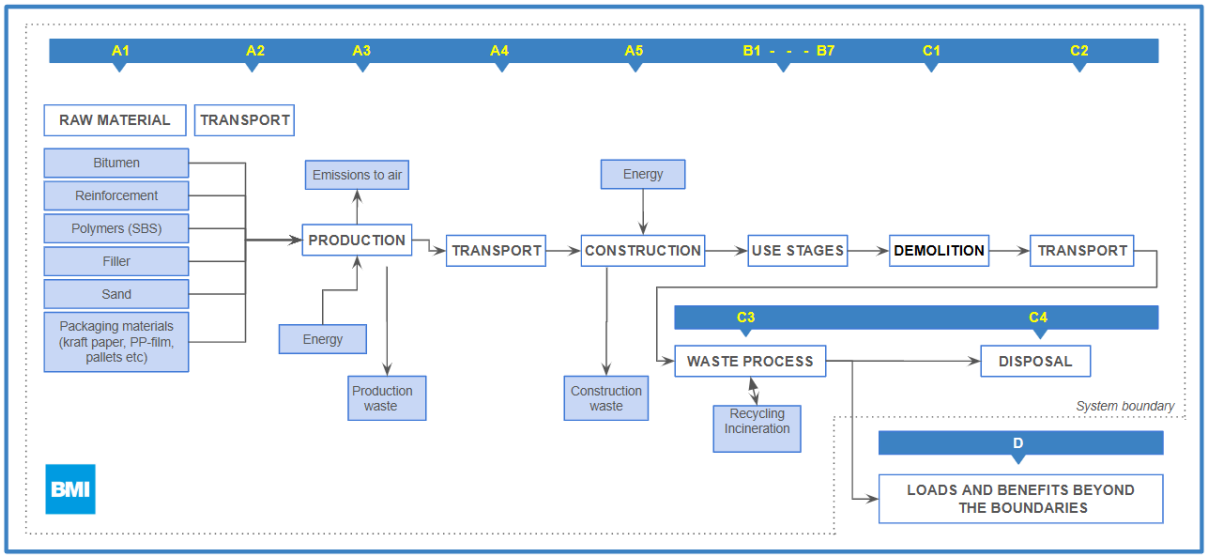
**End of life stage (C1-C4)**
When the end of the life stage of the building is reached, the de-construction/demolition begins. This EPD includes de-construction/demolition (C1), the necessary transport (C2) from the demolition site to the sorting location and distance to final disposal. The end of life stage includes the final disposal to landfill 40% (C4), incineration 45% (C3) and recycling 15%. Loads and benefits of recycling, re-use and exported energy are part of module D. The total neglected input flows for C1-C4 do not exceed the limit of 5% of energy use and mass. The included scenarios, according to the LCA Report, are currently in use and are representative for the most probable alternatives. For modelling of the End-of-life stage of the product the scenarios as used in the sector EPD of EWA (European Water Proofing Association) “Flexible Bitumen Sheets For Roof Waterproofing– sector EPD (S-P-00414)” are applied.

**Benefits and loads beyond the system boundary (D)**
This stage contains the potential loads and benefits of recycling and re-use of raw materials/products. The loads contain the needed recycling processes from end-of-waste-point up to the point-of-equivalence of the substituted primary raw material and a load for secondary material that will be lost at the end-of-life stage.

## Additional information:

For further information regarding the underlying LCA, contact LCA practitioner Lars Åhsberg: lars.ahsberg@bmigroup.com.

## System diagram:



## Modules declared, geographical scope, share of specific data (in GWP-GHG results) and datavariation:

| | Product stage | | | Construction stage | | Use stage | | | | | | | End of life stage | | | | Benefits and loads beyond the stage system boundaries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport | Manufacturing | Transport to site | Assembly | Use | Maintenance | Repair | Replacement | Refurnishment | Operational energy use | Operational water use | Deconstruction | Transport | Waste processing | Disposal | Reuse-, recovery-, recycling- potential |
| **Modules** | **A1** | **A2** | **A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| **Modules declared** * | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| **Geography** | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE |
| **Specific data used** ** | | <53% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Variation - products** | | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Variation - sites** | | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

* X=Modules Assessed, ** The share of primary (specific) data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that do not capture all relevant aspects of data quality. The indicator is not comparable across product categories.

# Content information

## Raw material and packaging materials

| Product components | Weight -% | Post-consumer material, weight-% | Biogenic material, weight-% |
|---|---|---|---|
| Bitumen blend | 69 | 3 | 0 |
| Reinforcement | 5 | 5 | 0 |
| Sand | 26 | 0 | 0 |
| Other materials | <1 | 0 | 0 |
| **Packaging materials** | **Weight, kg** | **Weight-% (versus the product)** | **Weight biogenic carbon, kg C/kg** |
| Kraft paper | <0.01 | <0.1 | 0.45 |
| Plastic (PE) | <0.01 | <0.1 | 0 |
| Wood pallet | 0.06 | 3 | 0.5 |

## Origin of electricity

The used electricity in the manufacturing phase (A3) has it´s origin in 100% Hydropower (100%). The GWP-GHG emission factor is 4 g $CO_2$/kWh.

## Dangerous substances from the candidate list of SVHC for Authorisation

For construction product EPDs complaint with EN15804, the content declaration shall list substances contained in the products that are listed in the “Candidate List of Substances of Very High Concern for Authorization” when their content exceeds the limits for registration with the European Chemicals Agency: i.e. >0.1 % of the weight of the product. No such substances are used in the production of the products covered in this EPD.

# Results* of the environmental performance indicators

## Mandatory impact category indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3 **** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-fossil | kg CO2 eq. | 1,39E+00 | 1,19E-01 | 9,57E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,22E-02 | 2,87E+00 | 1,08E-01 | -4,55E-01 |
| GWP-biogenic | kg CO2 eq. | -2,05E-01 | 9,01E-05 | 2,07E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,14E-05 | 1,21E-04 | 1,71E-05 | -2,95E-04 |
| GWP-luluc | kg CO2 eq. | 4,57E-03 | 3,62E-05 | 2,26E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,96E-05 | 9,45E-05 | 5,62E-06 | -2,78E-03 |
| GWP-total | kg CO2 eq. | **1,19E+00** | **1,19E-01** | **3,03E-01** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6,22E-02** | **2,87E+00** | **1,08E-01** | **-4,58E-01** |
| ODP | kg CFC-11 eq. | 1,57E-06 | 2,92E-08 | 1,13E-08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,24E-09 | 2,66E-09 | 2,97E-10 | -1,94E-08 |
| AP | mol H+ eq. | 5,38E-03 | 3,82E-04 | 3,17E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,90E-04 | 1,17E-03 | 1,33E-04 | -7,67E-04 |
| EP-freshwater | kg P eq. | 3,95E-05 | 9,46E-07 | 3,57E-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,68E-07 | 3,31E-06 | 1,23E-07 | -4,43E-06 |
| EP-marine | kg N eq. | 1,14E-03 | 8,38E-05 | 7,34E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,37E-05 | 3,21E-04 | 8,78E-05 | -2,06E-04 |
| EP-terrestrial | mol N eq. | 1,26E-02 | 9,34E-04 | 7,85E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,02E-04 | 3,43E-03 | 2,99E-04 | -2,30E-03 |
| POCP | kg NMVOC eq. | 5,49E-03 | 3,67E-04 | 3,53E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,00E-04 | 1,06E-03 | 1,33E-04 | -1,23E-03 |
| ADP-mm** | kg Sb eq. | 1.26E+00 | 2.11E-01 | 1.48E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.97E-02 | 7.34E-02 | 2.08E-03 | -7.77E-02 |
| ADP-fossil** | MJ, net calorific value | 5,26E+01 | 1,93E+00 | 9,36E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,68E-01 | 1,82E+00 | 2,26E-01 | -1,42E+01 |
| WDP* | m3 world eq. deprived | 3,67E-01 | 6,27E-03 | 3,16E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,32E-03 | 3,29E-02 | -8,89E-02 | -8,39E-02 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-mm = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | | | | | |

** The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. ** The use of the results of modules A1-A3 is discouraged without considering the results of module C. *** The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

## Additional mandatory and voluntary impact category indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3 **** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG* | kg $CO_2$ eq. | **1,19E+00** | **1,19E-01** | **3,03E-01** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6,22E-02** | **2,87E+00** | **1,08E-01** | **-4,58E-01** |
| Particulate matter emissions (PM) | Disease incidence | 4,99E-08 | 1,04E-08 | 5,40E-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,27E-09 | 1,11E-08 | 1,63E-09 | -7,29E-09 |
| Ionizing radiation, human health (IRP) | kBq U235 eq. | 2,81E-01 | 8,44E-03 | 2,55E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,58E-04 | 2,59E-03 | 1,21E-04 | -1,43E-01 |
| Eco-toxicity - freshwater (ETP-fw) | CTUe | 6,14E+00 | 1,54E+00 | 1,66E+00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,27E-01 | 1,33E+00 | 3,87E-02 | -1,56E+00 |
| Human toxicity, cancer effect (HTP-c) | CTUh | 3,60E-09 | 3,73E-11 | 3,42E-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,74E-10 | 1,72E-09 | 5,40E-11 | -9,60E-10 |
| Human toxicity, non-cancer effects (HTP-nc) | CTUh | 1,27E-08 | 1,68E-09 | 2,06E-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,11E-10 | 2,74E-09 | 1,81E-10 | 3,84E-09 |
| Land use related impacts/Soil quality (SQP) | dimensionless | 3,07E+01 | 2,21E+00 | 3,91E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,56E-01 | 1,23E+00 | 5,26E-01 | -7,96E+00 |

** This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic $CO_2$ is set to zero. ** The use of the results of modules A1-A3 is discouraged without considering the results of module C*

## Resource use indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 4,45E+00 | 2,43E-02 | 5,10E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,61E-02 | 1,05E-01 | 4,01E-03 | -3,15E+00 |
| PERM | MJ | 1,96E+00 | 0 | 9,78E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PERT | MJ | 6,40E+00 | 2,43E-02 | 6,08E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,61E-02 | 1,05E-01 | 4,01E-03 | -3,15E+00 |
| PENRE | MJ | 2,09E+01 | 2,05E+00 | 8,12E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,68E-01 | 1,82E+00 | 2,26E-01 | -1,00E+01 |
| PENRM | MJ | 3,18E+01 | 0 | 1,59E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -4,24E+00 |
| PENRT | MJ | 5,27E+01 | 2,05E+00 | 9,71E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,68E-01 | 1,82E+00 | 2,26E-01 | -1,42E+01 |
| SM | kg | 1,36E-02 | 0 | 4,02E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FW | $m^3$ | 1,56E-02 | 2,20E-04 | 8,24E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,21E-04 | 1,93E-03 | -2,12E-03 | -5,20E-03 |
| Acronyms | 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; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | | | |

## Waste indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 1,77E-04 | 4,68E-06 | 5,85E-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,81E-06 | 2,88E-05 | 1,55E-06 | -4,37E-05 |
| Non-hazardous waste disposed | kg | 3,26E-01 | 1,68E-01 | 9,02E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,57E-02 | 1,20E+00 | 9,12E-01 | -1,95E-02 |
| Radioactive waste disposed | kg | 3,81E-04 | 1,32E-05 | 3,15E-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,30E-07 | 2,02E-06 | 8,70E-08 | -9,75E-05 |

## Output flow indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Material for recycling | kg | 2,14E-02 | 0 | 1,02E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,43E-01 | 0 | 0 |
| Materials for energy recovery | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy, electricity | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -2,67E+00 |
| Exported energy, thermal | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -4,60E+00 |

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