

Environmental Product Declaration



EPD of multiple products, based on the average results of the product group

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

KIMA K2 / ÖS LIME 11 W/m
KIMA K3 / ÖS K3 20 W/m
KIMA K4
KIMA PLUG IN / ÖS PLUG & PLAY
KIMA K3 PLUG IN / ÖS K3 FIX FERDIG

from

KIMA Heating Cable AB



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on the average results of the product group
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An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): CONSTRUCTION PRODUCTS PCR 2019:14 VERSION 2.0.1
PCR review was conducted by: <i>The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat at www.environdec.com/support.</i>
c-PCR, if applicable: N/A

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: <i>Viktor Hakkarainen, CHM Analytics AB</i> Approved by: International EPD System  
Procedure for follow-up of data during EPD validity involves third party verifier:
☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: KIMA Heating Cable AB

Address: Dragarevägen 5 Box 2024 281 02 Hässleholm

Contact: Jan Anders Nilsson

LCA practitioners: Alexander Kyriakidis, AFRY, alexander.kyriakidis@afry.com; Ilmari Hieta, AFRY, Ilmari.hieta@afry.com

Description of the organisation: Producer of heating cables and heating elements for domestic and commercial applications and as well for the appliance industry.

Product-related or management system-related certifications: Certified according to ISO 9001, ISO 14001 and ISO 45000.

PRODUCT INFORMATION

Product name: Heating cable (KIMA K2 / ÖS LIME 11 W/m, KIMA K3 / ÖS K3 20 W/m, KIMA K4, KIMA PLUG IN / ÖS PLUG & PLAY, KIMA K3 PLUG IN / ÖS K3 FIX FERDIG) see table below for article numbers and specifications of different variations assessed in this report.

Name and location of production site(s): KIMA Heating Cable AB, Hässleholm, Sweden.

Visual representation (e.g., an image) of the product:



UN CPC code: 46340, Other electric conductors, for a voltage not exceeding 1000 V.

Product description: The heating cables have several applications, including frost protection of water pipes, as well as snow and ice melting on roofs. The heating cable consists of metals and insulation. The product in the study is an average product and contains a conductive polymer that create varying resistances in the heating cable and thereby adjust the heat it emits. The product has an outer sheath of PE (Polyethylene). The total weight of 1 meter of average cable is 65.3g

The product energy consumption is 1.83 kWh per year, or 54.9 kWh over its 30 year service life.

The heating cables have 100 % efficiency. Energy losses are only depending on how the installation is made and how well it is thermal insulated to save energy. However, in order to achieve the right performance and save energy is it important that the heating cables are properly installed and connected to an appropriate control unit featuring temperature and moisture sensors. While this EPD includes results for use phase emissions based on a most-likely scenario, the real world performance of the product is highly dependent on outside factors such as weather conditions and user behaviour.

This EPD presents results for an average heating cable that is weighted by production volumes. The cables covered by the EPD have differences in material composition and energy characteristics. To investigate which cables can be included in this EPD, different product cases provided by KIMA were modelled and compared. The following table lists the included cables.

Article number	EL number	Type	Product Name	Volt	Watt	Cable length m	Mat length m	Cable diam mm
E8987652	1036761	91-2	KIMA K2 / ÖS LIME 11 W/m	230	----	11	----	9,50x5,70
E8987653	1036759	91-2	KIMA K3 / ÖS K3 20 W/m	230	----	20	----	10,0x5,80
20090016	----	91-2	KIMA K4	230	----	28	----	10,0x5,80
E8987586	1036790	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	22	11	2	9,50x5,70
E8987587	1036791	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	44	11	4	9,50x5,70
E8987588	1036792	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	66	11	6	9,50x5,70
E8987589	1036793	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	88	11	8	9,50x5,70
E8987590	1036794	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	110	11	10	9,50x5,70
E8987591	1036795	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	143	11	13	9,50x5,70
E8987592	1036796	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	176	11	16	9,50x5,70
E8987593	1036797	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	209	11	19	9,50x5,70
E8987594	1036798	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	242	11	22	9,50x5,70
E8987595	1036799	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	275	11	25	9,50x5,70
11150300	1036773	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	330	11	30	9,50x5,70
11150350	1036774	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	385	11	35	9,50x5,70
11150400	1036775	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	440	11	40	9,50x5,70
11150450	1036776	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	495	11	45	9,50x5,70
11150500	1036777	91-2	KIMA PLUG IN / ÖS PLUG & PLAY	230	550	11	50	9,50x5,70
11200020	1036778	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	40	20	2	10,0x5,80
11200040	1036779	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	80	20	4	10,0x5,80
11200060	1036780	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	120	20	6	10,0x5,80
11200080	1036781	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	160	20	8	10,0x5,80
11200100	1036782	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	200	20	10	10,0x5,80
11200150	1036783	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	300	20	15	10,0x5,80
11200200	1036784	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	400	20	20	10,0x5,80
11200300	1036785	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	600	20	30	10,0x5,80
11200400	1036786	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	800	20	40	10,0x5,80
11200500	1036787	91-2	KIMA K3 PLUG IN / ÖS K3 FIX FERDIG	230	1000	20	50	10,0x5,80

CONTENT DECLARATION

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Copper	2.5E-2	1.8E+1	0.0E+0	0.0E+0
Brass	2.1E-3	0.0E+0	0.0E+0	0.0E+0
Aluminium	3.0E-4	0.0E+0	0.0E+0	0.0E+0
Polyethylene	3.7E-2	0.0E+0	0.0E+0	0.0E+0
Polyvinylchloride	1.9E-4	0.0E+0	0.0E+0	0.0E+0
Total wt.	6.5E-2	0.0E+0	0.0E+0	0.0E+0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Polyethylene	5.7E-4	0.0E+0	0.0E+0
Polypropylene	3.7E-3	5.6E+0	0.0E+0
Cardboard	9.3E-3	6.9E+0	3.1E-3
Pallet	7.2E-3	1.1E+1	2.5E-3
TOTAL	1.8E-2	2.4E+1	5.6E-3

The content declaration shows the contents per meter of a production-weighted average cable. The mass of the product per declared unit is 65.3 g. 1 kg of biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

No dangerous substances from the candidate list of SVHC for Authorisation are used in the production or the final product.

LCA INFORMATION

Declared unit: 1 m of installed cable, including use phase, waste treatment and end of life.

Conversion factor to mass if mass is not used as functional/declared unit (not applicable for services).

Reference service life: Not applicable – modelling used a service life of 30 years

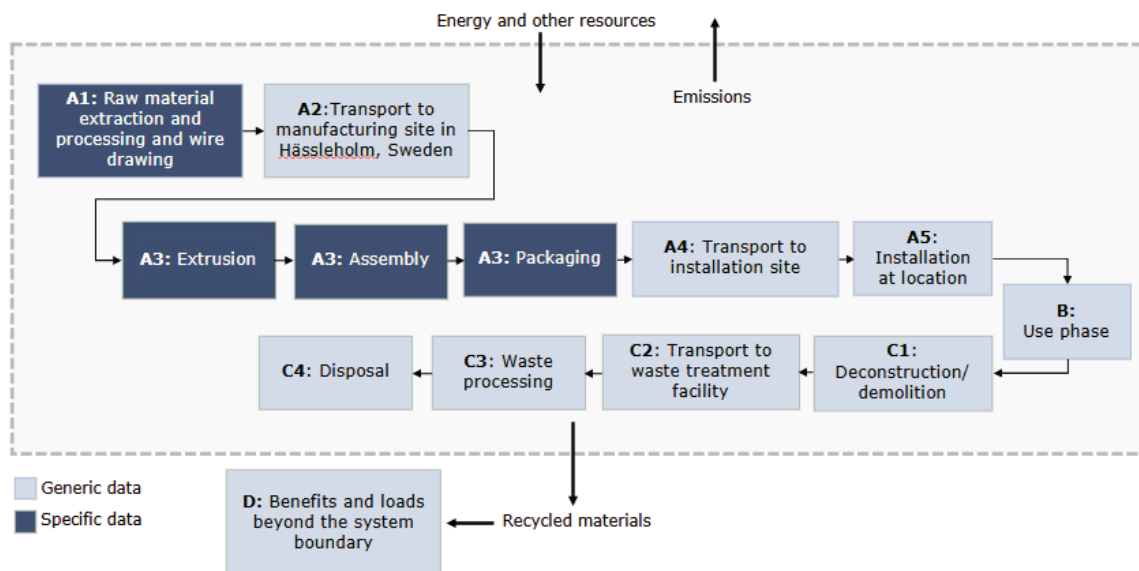
Time representativeness: 2023

Geographical scope: Europe (modules A, C and D). Norway (Module B).

Database(s) and LCA software used: Ecoinvent 3.11. and Simapro with EN 15804 + A2 (adapted-2023) as well as CED V1.00 and the EF 3.1 normalization and weighting set.

Description of system boundaries: Cradle to gate with options, module C1-C4, module D and optional modules A4, A5 & B1-B7.

Process flow diagram: The heating cables are produced in Hässleholm, Sweden. Raw materials and components are assumed to mainly be bought from European suppliers. The manufacturing consists of different process steps before the final product is delivered to customers



The following modules have been assessed:

A1) Raw material/energy demand from extraction and processing of raw materials; Generation of electricity, steam and heat from primary energy resources, also including their extraction, refining and transport. The material inputs per meter of each cable were collected through the master production system and weighted by production volume to establish an average cable inventory. Materials were matched with data sets from Ecoinvent 3.11.

A2) Transport of raw materials

Transportation of raw materials to production sites. A representative distance of 1000 km by freight truck was used, together with the weight of cable materials with an additional 5% added to represent production waste. The process was modelled using an Ecoinvent 3.11 data set.

A3) Manufacturing

Manufacturing of the finished components (heating cables), production of packaging and treatment of production waste. The manufacturing takes place in Hässleholm in Sweden. First the conductors are embedded in a semiconductive compound and then insulated with a heat-resistant insulation through

extrusion and then the cable is covered with a metal sheath and an outer sheath. Then the cable will either be respooled on a spool or cut to the right length before it is assembled, packed and shipped to the customer. Inputs and outputs (electricity, water, lubrication and waste) were allocated per meter from the site total. Materials were matched with data sets from Ecoinvent 3.11.

A4) Transport to installation

Transport of finished components to the installation site. A representative distance of 550 km by freight truck was used, together with the weight of cable and packaging per meter. The process was modelled using an Ecoinvent 3.11 data set. The additional technical information requested for this module under section 7.3 of SS-EN 15804 (SIS Svenska Institutet för Standarder, 2019) is not complete.

Scenario information	Unit	Input per FU
Vehicle type	N/A	16-32t Diesel lorry, EURO6
Distance	km	550
Capacity utilisation incl. empty returns	%	36-18
Bulk density of transported products	kg/m ³	Unknown
Volume capacity utilisation factor	N/A	Unknown

A5) Installation

Installation of the heating cable at the installation site. In order to represent installation waste, 5% of the A1-A3 inventory was added to this module. Apart from these, no use of energy, ancillary materials, water or other resources were modelled as part of this module.

Scenario information	Unit	Input per FU
Ancillary materials required	kg	0
Water use	m ³	0
Other resource use	kg	0
Energy type and consumption	kWh	0

B1) Use

Use of the installed product. The impact of module B1 was assessed to be zero as the product does not release any substance during operation. .

B2) Maintenance

Maintenance of the heating cable at the installation site. The impact of module B2 was assessed to be zero as the product does not require maintenance under normal conditions.

B3) Repair

Repairs of the heating cable at the installation site. The impact of module B3 was assessed to be zero as the product does not require repairs under normal conditions.

B4) Replacement

Replacement of the heating cable at the installation site. The impact of module B4 was assessed to be zero as the product does not require replacement under normal conditions.

B5) Refurbishment

Refurbishment of the heating cable. The impact of module B5 was assessed to be zero as the product does not require refurbishment under normal conditions.

B6) Operational energy use

Electricity used by the heating cable during operation. The lifetime energy consumption was calculated per cable depending on its application (see Scenarios section); these were weighted by production volume in order to determine the consumption of the average cable. The additional technical information requested for this module under section 7.3 of SS-EN 15804 (SIS Svenska Institutet för Standarder, 2019) is not complete.

Scenario information	Unit	Input per FU
Ancillary materials	kg	0
Net fresh water consumption	m ³	0
Lifetime electricity consumption	kWh	54.9
Power output	kW	N/A*
Efficiency	%	100
Annual running time	h	N/A*
Lifetime	y	N/A*

* These attributes vary between specific cables

B7) Operational water use

Water used by the heating cable during operation. The impact of module B7 was assessed to be zero as the product does not use water.

C1) Deconstruction and demolition

Impacts relating to removing the product at end-of-life. The impact of module C1 was assessed to be zero as the product is easily removed by hand.

C2) Waste transport

Transport of waste products to a waste treatment facility. A representative distance of 100 km by freight truck was used. The process was modelled using an Ecoinvent 3.11 data set.

C3) Waste processing

Sorting and recycling processes. It was assumed that cables would be sorted at a designated sorting station, where the metal wiring would be sent to recycling (sorting and remelting) and the rest incinerated. Materials were matched with data sets from Ecoinvent 3.11.

C4) Waste disposal

Waste disposal processes such as landfilling or incineration. Disposal of ashes from incinerated materials was modelled using an Ecoinvent 3.11 data set.

The additional technical information requested for the end of life stage under section 7.3 of SS-EN 15804 (SIS Svenska Institutet för Standarder, 2019) is not complete.

Scenario information	Unit	Input per FU
Waste collected separately	g	65.3
Waste collected with MCW	g	0
Waste for reuse	g	0
Waste for recycling	g	27.4
Waste for energy recovery	g	37.9
Waste for final deposition	g	1.9
Transportation vehicle	N/A	16-32t Diesel lorry, EURO6
Distance	km	100
Capacity utilisation incl. empty returns	%	36-18
Bulk density of transported products	kg/m ³	Unknown
Volume capacity utilisation factor	N/A	Unknown

D) Potential benefits and loads beyond the system boundary

Benefits and burdens associated with recovery/recycling that affect previous or future life cycles. Benefits outside the system boundary come from the recycling of metals (D1) and incineration of scrap polymers (D3). For D1, it was assumed that 90% of copper would be recycled with no significant degradation. The calculation of D3 used the LHV as well as net electrical and thermal energy production reported by Ecoinvent 3.11 for incineration of waste plastic.

Allocation

Manufacturing inputs and outputs (electricity, water, lubricants and waste) were allocated per meter from the site total. The "cut off" principle has been used to allocate recycled materials.

Cut-off criteria

The study followed the cut-off criteria described in EN 15804 (SIS Svenska Institutet för Standarder, 2019) and PCR 2019:14 (The International EPD System, 2025). All inputs and outputs have been included in the calculations

Key assumptions:

- Manufacturing of capital equipment and infrastructure as well as personnel-related processes were excluded for upstream, core and downstream processes.
- The scenarios and assumptions applied in this study for all the life cycle stages included are based on data provided by KIMA and correspond to the most likely scenario.
- For the production of electricity used in the core process (A3), a 100% nuclear is since the company purchases a specific electricity mix.
- Use phase modules excluding B6 were estimated to cause no impact. The energy used by the cable in the use phase (B6) was estimated based on assumptions relating to weather conditions: see scenario description below.

The assumptions related to Modules C and D, end-of-life treatment scenarios and potential credits, represent the most likely scenario based on current practices and technologies available. It was assumed that the metals would be recycled and plastics incinerated as mixed waste.

Use phase scenarios:

Frost protection cables are regulated by thermostats only activate when the temperature is below zero at the water pipe. Assuming that the pipes are insulated this means that the the cables will start consuming electricity the temperature drops below -3°C . Based on average weather data for the last 4 years in Norway this occurs for 914 hours per year. The power used for frost protection at that temperature is assumed to be 2W/m. The service life of these cables was assumed to be 30 years. The annual energy use of these cables comes to 1.8 kWh/m or 54 kWh/m over 30 years.

Summary of data quality assessment:

The LCA underlying this EPD is based primarily on secondary data for background processes, combined with primary activity data from the 2023 production year for core processes. The overall data quality was considered good.

Representativeness

- Technological: Good to very good as secondary data sets reflect typical technologies
- Geographical: Fair to good as most data sets correspond to the relevant regional context
- Temporal: Good, representing the combination of recent activity data and Ecoinvent 3.11

Completeness

- Very good as the inventory covers all relevant flows and impact categories

Precision / Uncertainty

- Fair to good, representing the weighted of the average product and secondary data

Consistency

- Good as the attributional LCA approach, allocation and cut-offs were applied consistently across all data sets

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling- potential
Module	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	GLO/ EUR	EUR	SE	SE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	EUR
Share of primary data	16%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	81%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

Declaration of data sources, reference years, data categories, and share of primary data:

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Production of materials	Database	Ecoinvent v3.11	2023	Secondary	0.0%
Transportation of materials	Database	Ecoinvent v3.11	2023	Secondary	0.0%
Manufacturing of product	Collected	KIMA	2023	Primary	15.9%
Total share of primary data, of GWP-GHG results for A1-A3					15.9%

Modules A1 and A3 were modelled using a site specific life cycle inventory of inputs and outputs calculated by the production system.

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Data quality assessment

The quality of the generic data used has been assessed according to the UN Environment Global Guidance on LCA database development's criteria for data quality assessment, as described in Table E.1 in SS-EN 15804:2012+A2:2019 (SIS Svenska Institutet för Standarder, 2019). In general, the data quality is considered good in this assessment. The evaluation categories used to assess data quality range from very good to very poor, with no data falling into the "very poor" category in this assessment

Variation

For an EPD of multiple products that does not claim compliance with ISO 21930, variations above 10% are allowed. In such cases, the EPD shall declare the variation of each impact indicator results for which the variation is above 10% and include an explanation of the variation. In this case, the variation is above 10% for several indicators due to variations in packaging amounts relative to the functional unit.

Indicator	Variation
Climate change - Fossil	34%
Climate change - Biogenic	31%
Climate change - Land use and LU change	5%
Climate change	29%
Ozone depletion	111%
Acidification	16%
Eutrophication, freshwater	23%
Eutrophication, marine	24%
Eutrophication, terrestrial	25%
Photochemical ozone formation	29%
Resource use, minerals and metals	19%
Resource use, fossils	10%
Water use	14%
Particulate matter	26%
Ionising radiation	7%
Ecotoxicity, freshwater	26%
Human toxicity, cancer	21%
Human toxicity, non-cancer	13%
Land use	51%
GWP-GHG	34%

The variation was calculated following the method described by the GPI 5.0.1. The figures relate to the variation between the declared product and the lowest- and highest-impact variant per indicator.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

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 CO ₂ eq.	3.00E-01	8.19E-03	2.58E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E+00	0.00E+00	0.00E+00	1.22E-03	9.36E-02	6.19E-04	2.22E-02
GWP-biogenic	kg CO ₂ eq.	-1.72E-02	5.69E-06	2.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.18E-02	0.00E+00	0.00E+00	8.47E-07	1.23E-03	9.65E-06	8.10E-04
GWP-luluc	kg CO ₂ eq.	5.68E-04	2.76E-06	2.97E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.56E-03	0.00E+00	0.00E+00	4.10E-07	5.59E-06	1.48E-07	1.22E-05
GWP-total	kg CO ₂ eq.	2.83E-01	8.20E-03	4.75E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E+00	0.00E+00	0.00E+00	1.22E-03	9.48E-02	6.29E-04	2.30E-02
ODP	kg CFC 11 eq.	2.98E-09	4.08E-12	1.52E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.26E-09	0.00E+00	0.00E+00	6.07E-13	6.86E-12	8.38E-14	1.04E-11
AP	mol H ⁺ eq.	1.66E-02	1.76E-05	8.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.93E-02	0.00E+00	0.00E+00	2.62E-06	4.07E-05	1.56E-06	-2.97E-04
EP-freshwater	kg P eq.	1.33E-03	5.68E-07	6.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-03	0.00E+00	0.00E+00	8.46E-08	1.12E-06	1.59E-06	-1.00E-04
EP-marine	kg N eq.	9.03E-04	4.24E-06	5.21E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.90E-03	0.00E+00	0.00E+00	6.31E-07	1.75E-05	4.78E-07	-9.91E-06
EP-terrestrial	mol N eq.	1.21E-02	4.57E-05	6.50E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-02	0.00E+00	0.00E+00	6.81E-06	1.54E-04	5.18E-06	-2.98E-04
POCP	kg NMVOC eq.	3.55E-03	2.79E-05	1.97E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.46E-03	0.00E+00	0.00E+00	4.15E-06	4.23E-05	1.55E-06	-4.44E-05
ADP-minerals&metals*	kg Sb eq.	2.09E-04	2.81E-08	1.04E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-04	0.00E+00	0.00E+00	4.19E-09	2.01E-08	7.28E-10	-5.60E-06
ADP-fossil*	MJ	3.36E+00	9.28E-03	1.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E+01	0.00E+00	0.00E+00	1.38E-03	1.69E-02	1.17E-03	1.73E-01
WDP*	m ³	2.76E-01	4.57E-04	1.52E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E+00	0.00E+00	0.00E+00	6.81E-05	7.49E-04	7.91E-05	-4.98E-03
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-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit																
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Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	3,02E-01	8,20E-03	2,65E-02	1,64E+00	0,00E+00	1,22E-03	9,44E-02	6,20E-04	2,22E-02	3,02E-01	8,20E-03	2,65E-02	1,64E+00	0,00E+00	1,22E-03
Particulate matter emissions (PM)	Disease incidence	7.27E-08	6.14E-10	3.94E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-07	0.00E+00	0.00E+00	9.14E-11	7.51E-10	1.37E-11	1.78E-09
Ionizing radiation, human health (IRP)**	kBq U235 eq.	1.16E-01	1.41E-04	5.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.57E-01	0.00E+00	0.00E+00	2.09E-05	1.55E-04	1.98E-05	-1.47E-04
Eco-toxicity - freshwater (ETP-fw)*	CTUe	1.86E+01	1.56E-02	9.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E+01	0.00E+00	0.00E+00	2.33E-03	2.07E-01	2.14E-02	-1.28E+00
Human toxicity, cancer effect (HTP-c)*	CTUh	2.22E-09	1.37E-12	1.20E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-09	0.00E+00	0.00E+00	2.04E-13	1.16E-11	3.03E-11	2.13E-11
Human toxicity, non-cancer effects (HTP-nc)*	CTUh	1.71E-07	7.31E-11	8.69E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-07	0.00E+00	0.00E+00	1.09E-11	8.02E-10	9.88E-11	1.33E-09
Land use related impacts/Soil quality (SQP)*	dimensionless	7.79E+00	6.99E-02	4.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E+01	0.00E+00	0.00E+00	1.04E-02	5.33E-02	3.69E-03	-2.25E-03

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 results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

** Disclaimer: This impact category deals mainly with the eventual impact of low-dose ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

¹ 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 CO₂ is set to zero.

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	1,27E+00	1,92E-03	6,46E-02	2,26E+02	0,00E+00	2,86E-04	3,49E-03	1,92E-04	0,00E+00	1,27E+00	1,92E-03	6,46E-02	2,26E+02	0,00E+00	2,86E-04
PERM	MJ	5,40E-02	0,00E+00	-1,62E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,40E-02	0,00E+00	-1,62E-02	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,33E+00	1,92E-03	4,84E-02	2,26E+02	0,00E+00	2,86E-04	3,49E-03	1,92E-04	0,00E+00	1,33E+00	1,92E-03	4,84E-02	2,26E+02	0,00E+00	2,86E-04
PENRE	MJ	3,44E+00	9,69E-03	1,77E-01	1,68E+01	0,00E+00	1,44E-03	1,77E-02	1,22E-03	0,00E+00	3,44E+00	9,69E-03	1,77E-01	1,68E+01	0,00E+00	1,44E-03
PENRM	MJ	1,17E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,40E-01	0,00E+00	0,00E+00	1,17E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,61E+00	9,69E-03	1,77E-01	1,68E+01	0,00E+00	1,44E-03	-4,22E-01	1,22E-03	0,00E+00	4,61E+00	9,69E-03	1,77E-01	1,68E+01	0,00E+00	1,44E-03
SM	kg	1.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	6.29E-03	2.05E-05	2.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.22E-02	0.00E+00	0.00E+00	3.09E-06	1.71E-04	1.84E-08	-1.23E-05
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															

Option B was used to show energy use. However, a specific energy profile for waste incineration could not be established, as the product is marketed to consumers; instead, secondary (Ecoinvent 3.11) values for net energy production were used.

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-02
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.82E-01

ADDITIONAL ENVIRONMENTAL INFORMATION

During the work with the EPD, no factors have been identified that would prevent meeting the requirements of BASTA, Sunda Hus, and the Byggarubedömningen. For example, no dangerous substances from the candidate list of SVHC for Authorisation are used in the production or the final product. However, to achieve certification according to these assessments, further review and safety data sheets are required.

The calculations for climate data in this EPD are aligned with BREEAM. Regarding the product's lifespan, it is recommended to follow the specifications in the BREEAM manual. The product is not expected to be subject to emissions assessments. No occurrence of phase-out substances has been found during the implementation of the EPD, but further review is required if the product is to be used under a BREEAM certificate.

Svanen has currently no criteria for this product group.

Validity

In accordance with section 2.2.4 of the PCR, KIMA Cable AB commits to maintaining EPD validity through continuous monitoring of relevant changes, including e.g. product composition, manufacturing processes, supply chains and end-of-life regulations.

Kima Cable AB commits to purchase contractual instruments representing the renewable electricity mix used to develop this EPD for the validity period of the EPD.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared

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VERSION HISTORY

Original Version of the EPD, 2026-04-29

