Environmental Product Declaration

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

Mitrex Solar Cladding: extruded aluminum profile and solar facing

from

Mitrex

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	EPD International AB; this EPD is registered through aligned regional licensee: EPD North America (www.epdna.com)
Type of EPD:	Specific Product
EPD registration number:	EPD-IES-0026435:001
Version date:	2025-10-23
Validity date:	2030-10-23
	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' Product Category Rules (ISO 14025) 2019:14 Version 2.0.1 - Updated 2025-06-05 and Valid Until 2030-04-07 UN CPC 42999*
PCR review was conducted by: Rob Rouwette (chair), Noa Meron (co-chair)

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: *Stephen Forson, ViridisPride Ltd, s.forson@viridispride.com* Approved by: International EPD System LCA Practitioner: Katie Soulliere, LCA Design Corporation, *k.soulliere@lcadesign.ca*
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: Mitrex
Address: 41 Racine Road, Etobicoke, Ontario, Canada, M9W 2Z4
Contact: Danial Hadizadeh, 416-497-7120, info@mitrex.com

Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable: Katie Soulliere, LCA Design Corporation, k.soulliere@lcadesign.ca

Description of the organisation:
Mitrex & Cladify, world leaders in sustainable building materials, bring over 20 years of manufacturing expertise of architectural panels and stand as the largest building-integrated solar technology (BIPV) manufacturer globally. Their mission is to drive the widespread adoption of sustainable materials, firmly believing that sustainable manufacturing, procurement, and import practices are not only economically viable but also critical for a better future. They are committed to creating a world where sustainability is seamlessly integrated into every aspect of design and construction.

With roots in crafting luxurious stone facades, their expertise evolved into advanced lightweight cladding systems through the Cladify brand, culminating in groundbreaking innovations in Mitrex's solar technology launched in 2020. The Cladify system offers architectural panels with multi-facing options ranging from stone, metal, brick, porcelain and solar, underpinned by a durable aluminum honeycomb core. Mitrex products transform building exteriors into energy-generating facades utilizing the high-performing Cladify system with a solar facing, effectively turning structures into self-sustaining power stations.

The Mitrex & Cladify vision is to revolutionize the construction industry by embedding sustainability into every structure, empowering buildings to produce renewable energy while maintaining aesthetic excellence. Mitrex & Cladify represent the cutting edge of sustainable building, offering architects and developers materials that blend energy efficiency, durability, and design excellence.

PRODUCT INFORMATION

Product name: Mitrex Solar Cladding: extruded aluminum profile and solar facing

UN CPC code: UN CPC 42999
Product description:
Mitrex's solar cladding with extruded aluminum profile and solar facing is a high-performance solar facade solution that blends aesthetics with cutting-edge building integrated photovoltaic (BIPV) technology. Available in eFacade LITE, eFacade PRO, and eFacade PRO+ product lines, this ventilated rainscreen system features an invisible extruded aluminum profile encasing high-efficiency solar cells, paired with a customizable facing available in 48 standard colors.

Available in sizes up to 39x80 inches for optimal cost efficiency, Mitrex Solar Facades are engineered for durability, energy performance, and architectural versatility. The facing acts as a design canvas—allowing your building to come to life seamlessly integrating solar power into your building envelope.

Name and location of production site:
Mitrex Manufacturing Facility 41 Racine Road, Etobicoke, Ontario, Canada, M9W 2Z4

Explanatory material on safe installation, use, and disposal of the solar facade can be found online https://www.mitrex.com/resources/certifications-downloads

Figure 1: Hamilton St, Ontario, Canada, 2025

Technical Data and General Information

DIMENSIONS	STANDARD SIZE: 80in x 39in (2032mm x 990mm) MAXIMUM SIZE: 125in x 80in (3175mm x 2032mm)
WEIGHT	3.19 lb/SQFT (15.6 kg/sqm)
FACING THICKNESS	0.13in, 0.16in, 0.24in (3.2mm, 4mm, 6mm)
POWER RANGE	7-18W/ft2 (75-196W/m2)

TESTING & CERTIFICATIONS:

- UL 61730-1/-2, CSA 61730-1/-2, IEC 61730-1/-2
- UL 61215-1/-2, CSA 61215-1/-2, IEC 61215-1/-2
- EN 13501-1 (A2-s1, d0)
- ANSI Z97.1
- NFPA 285
- CAN/ULC-S134, CAN/ULC-S135
- ASTM B117-16, ASTM C271/C271M-16, ASTM C297/C297M-16, ASTM C364/C364M-16, ASTM C365, ASTM C393/C393M-16, ASTM C480/C480M-16, ASTM C273/C273M-18, ASTM C481-99 (Reapproved 2016), ASTM C666/C666M-15, ASTM C880/C880M-15, ASTM C897-08 (20160), ASTM D1761, ASTM D7766/D7766M-16
- ISO 10545-8
- ASTM E84, ASTM E136, ASTM E119
- ASTM E283, ASTM E330, ASTM E331
- ASTM E1886, ASTM E1996
- ASTM G154
- ASTM D6578
- ASTM C373
- ASTM C729

CONTENT DECLARATION

The mass (weight) per functional unit: 11.58 kg / m^2

Product content	Mass, kg/m^2	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/m^2
Glass	7.91	0	0	0
Aluminum	1.32	0	0	0
EVA	0.94	0	0	0
Ethylene phthalate	0.45	0	0	0
Solar Cell	0.36	0	0	0
Adhesive	0.34	0	0	0
Copper	0.27	0	0	0
TOTAL	11.58	0	0	0

Packaging materials	Mass, kg/m^2	Mass-% (versus the product)	Biogenic material, kg C/m^2	Post-consumer recycled material, mass-% of packaging
Wood	0.97	8	0.46	0
Cardboard	0.13	1	0.061	81
PE	0.011	0.1	0	0
TOTAL	1.11	9.1	0.52	--

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight - % per functional or declared unit
-	-	-	0.00

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither does the packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals)

Figure 2: Chinook Hospital, Alberta, Canada, 2025

LCA INFORMATION

Functional unit: 1 m^2
(11.58 kg/m^2)

Reference service life: 60 years

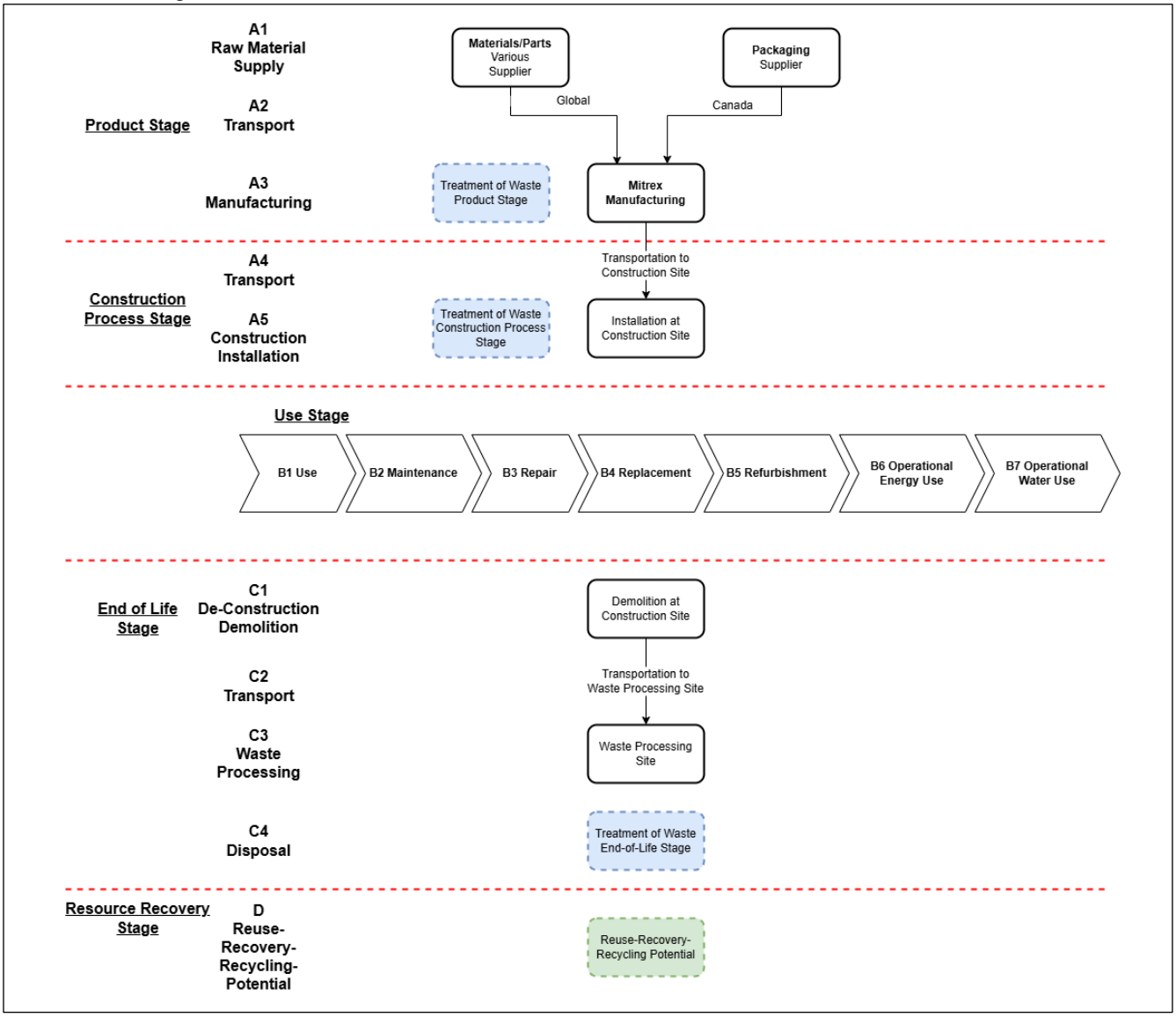
Time representativeness:
Primary data provided by Mitrex from 2024-01-01 to 2024-12-31 for suppliers and manufacturing inflows at Mitrex manufacturing facility.

Geographical scope: Global

Database(s) and LCA software used:
GaBi LCA Software Version 10.0, Sphera Database Version 2025, US LCI Database 2025

Description of system boundaries:
cradle-to-grave and module D

Process flow diagram:



More information:
A2 Transportation – Truck and ocean freighter transport from suppliers to manufacturing facility
A3 Manufacturing – Manufacturing, packaging, and waste treatment at Mitrex facility. Manufacturing process consists of solar cell processing, aluminum procurement, lamination, junction box installation, and testing.
A4 Transport – Truck transport from manufacturing facility to construction site, based on average customers, assume 558 km.
A5 Construction installation – Solar facade installation and packaging waste disposal. Assume electric power tools used for installation (1.59 kWh). Assume pallets are reused, cardboard is recycled, and PE shrink wrap is landfilled. (packaging: 87% reused, 12% recycled, and 1% landfilled)
B1-B7 Use – No repair, replacement, refurbishment, operational energy use, or operational water use. Solar facade requires cleaning (B2) once per year using water.
B6 Energy Production – The energy production is included in B6. Information on the calculation procedures can be found on the next page.
C1 Deconstruction, Demolition – Deconstruction of the solar facade for removal and disposal.
C2 Transport – Truck transport from construction site to waste processing facility.
C3 Waste Processing – No waste processing is required.
C4 Disposal – Waste solar facade is landfilled.
D) Benefits and Loads Beyond the System Boundary – No benefits beyond the system boundaries. Machinery and commuting of employees are excluded from the analysis.

Allocation Procedures:
Production rates vary depending on the dimension, shape, and type of the solar panel being produced. The electrical energy values were provided per month and allocated to a panel based on the number of panels produced per month. No usable co-product allocation required.

Cut-off Procedures:
The LCI data includes >95% of total inflows per module and utilizes proxy data from databases to achieve 100% completeness. For the product stage A1-A3, 100% of total inflows are included in the LCI data.

A3 Electricity Used in Manufacturing Process:
Canada Emission Factors and Reference Values 2024 – Electricity Ontario: 0.03 kg CO2e/kWh

Ontario Power Supply

Nuclear	50.8%
Hydro	24.5%
Natural Gas	12.5%
Wind	8.7%
Solar	2.3%
Bioenergy	0.4%
Other	0.8%

C2 and C4 End-of-life scenario:
Distance to waste processing facility: 100 km
Recovery system specified by type: 0 kg for recycling
Disposal specified by type: 11.58 kg for final deposition in landfill

B6 Energy Production

The following information is for the calculation procedures for the energy production. The energy produced by a PV module depends on the installed power peak, degradation factor, geographic location and direction/placement of the installation. Produced electricity over the lifetime of the module shall therefore not be declared in the LCA and EPD.

Data provided by Mitrex indicated in green below.

Energy production in the first year of operation:

E1 = Srad * A * y * PR * (1- deg)

E1 = Energy produced in the first year of operation, kWh/year

Srad = Site specific annual average solar radiation on module (shadings not included), kWh/kWp/year. The annual radiation must take into consideration the specific inclination (slope, tilt) and orientation

A = Area of module, from functional unit (FU), m2 ***(area of solar module 0.9028 m^2)***

y = Module yield: electrical power, kWp for standard test conditions (STC) of the module divided by the area of the module ***(see next page for values based on panel choice)***

STC: The ratio is given for standard test conditions: irradiance 1000 W/m2, cell temperature 25 °C, wind speed 1 m/s, AM1.5.

PR = Performance ratio, coefficient for losses. Site specific performance ratio can be modelled with PV simulation software tools, such as PVSyst or similar

- Inverter losses
- Temperature losses
- DC cables losses
- AC cables losses
- Shadings
- Losses at weak radiation
- Losses due to dust, snow
- Other Losses

deg = yearly degradation rate ***(Use default degradation rate 0.007 (0.7 %) per year)***

Model Name	Module Power (W/SF)	Max. Power Current - Imax (A)	Max. Power Voltage - Vmax (V)	Short Circuit Current - Isc (A)	Open Circuit Current - Voc (V)	Module Efficiency (%)	y, Module Yield kWp/area
Apple Blosoom	8	4.16	40.9	4.44	47.5	8%	9.54E-02
Arcturus	12	6.26	42.3	7.36	48.4	13%	1.43E-01
Ash Beige	11	5.2	40.4	5.45	47.9	11%	1.31E-01
Astra	11	6.92	42.6	8.2	48.7	12%	1.31E-01
Beige	5	2.61	40.3	2.74	46.9	5%	5.96E-02
Blackout	16	8.62	40.6	9.07	48.9	17%	1.91E-01
Blue Jay	14	7.59	40.2	7.9	48.5	15%	1.67E-01
Boulder	13	6.9	40.6	7.23	48.5	14%	1.55E-01
Brown	9	4.62	41.1	4.96	47.7	9%	1.07E-01
Carbo	15	6.85	41.6	7.12	48.1	16%	1.79E-01
Cassia	14	7.32	41	7.74	48.6	15%	1.67E-01
Charcoal Grey	10	5.43	40.5	5.71	48	11%	1.19E-01
Cobaltic	13	6.14	40.7	6.49	48.3	14%	1.55E-01
Cocoa Bean	9	4.62	41.1	4.96	47.7	9%	1.07E-01
Core Black	18	9.31	41.9	9.97	48.2	19%	2.15E-01
Deep Ocean	15	8.17	40.4	8.55	48.7	16%	1.79E-01
Dull Orange	5	3.21	40.5	3.39	47.1	6%	5.96E-02
Dull Yellow	6	3.21	40.5	3.39	47.1	6%	7.15E-02
Ebony Grey	13	7	40.7	7.36	48.6	14%	1.55E-01
Espresso Martini	10	5.43	40.5	5.71	48	11%	1.19E-01
Gold	11	5.67	40.6	5.97	48.1	11%	1.31E-01
Gravel Grey	11	5.97	40.2	6.19	48.1	12%	1.31E-01
Gun Smoke	13	7	40.7	7.36	48.6	14%	1.55E-01
Icy White	5	3.21	40.5	3.39	47.1	6%	5.96E-02
Irish Coffee	12	6.44	40.4	6.71	48.3	13%	1.43E-01
Iron Filings	14	7.48	40.1	7.77	48.4	15%	1.67E-01
Ironside Grey	13	6.67	40.5	6.97	48.4	13%	1.55E-01
Monsoon	13	6.77	40.6	7.1	48.5	14%	1.55E-01
Moonstone	10	5.38	40.9	5.71	48	11%	1.19E-01
Natural Grey	13	7	40.7	7.36	48.6	14%	1.55E-01
Navy Blue	11	6.08	40.3	6.32	48.2	12%	1.31E-01
Nobel Grey	10	5.2	40.4	5.45	47.9	10%	1.19E-01
Ocean	15	7.94	40.3	8.29	48.6	16%	1.79E-01
Orbit	16	7.95	40.9	8.34	48.6	17%	1.91E-01

Model Name	Module Power (W/SF)	Max. Power Current - Imax (A)	Max. Power Voltage - Vmax (V)	Short Circuit Current - Isc (A)	Open Circuit Current - Voc (V)	Module Efficiency (%)	y, Module Yield kWp/area
Pale Rose	7	3.45	40.6	3.66	47.2	7%	8.35E-02
Peridot	5	3.21	40.5	3.39	47.1	6%	5.96E-02
Pine Cone	13	6.77	40.6	7.1	48.5	14%	1.55E-01
Polaris	9	4.16	40.9	4.44	47.5	9%	1.07E-01
Purple	13	6.9	40.6	7.23	48.5	14%	1.55E-01
Red	9	4.62	41.1	4.96	47.7	9%	1.07E-01
Rocksalt	11	5.74	41.8	6.17	48.3	12%	1.31E-01
Sea	14	7.48	40.1	7.77	48.4	15%	1.67E-01
Silver Grey	10	5.43	40.5	5.71	48	11%	1.19E-01
Smokey Grey	10	5.43	40.5	5.71	48	11%	1.19E-01
Storm Dust	8	4.26	41	4.57	47.6	9%	9.54E-02
Storm Grey	13	6.9	40.6	7.23	48.5	14%	1.55E-01
Turquoise	7	3.68	40.7	3.92	47.3	7%	8.35E-02
Wet Sand	12	6.44	40.4	6.71	48.3	13%	1.43E-01

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
Geography	GLO	GLO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Share of primary data	13%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

Modules/processes/life-cycle stages declared shall be noted with “X”.
Modules/processes/life-cycle stages not declared shall be marked as “ND”.
GLO = Global NA = North America

Share of Primary Data of GWP-GHG Results for A1-A3

Process	Source Type	Source	Reference Year	Data Category	Share of primary data, of GWP-GHG results for A1-A3
Generation of electricity used in manufacturing of product	Database	Sphera, Environmental and Climate Change Canada	2024	Primary data	0.91%
Transport to manufacturing site	Database	US LCI Database	2024	Primary data	12.01%
Other Processes	Database	Sphera, EcoInvent, US LCI Database	2020-2025	Secondary data	0%
Total share of primary data, of GWP-GHG results for A1-A3					13%

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.

According to EN 15941 Annex C, Quality of Data:

- Technological Representativeness – Good
- Geographical Representativeness – Good
- Temporal Representativeness –Good

ENVIRONMENTAL PERFORMANCE

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

The environmental performance results include the indicators and disclaimers of EN 15804:2012+A2:2019/AC:2021. The PCR requires that several parameters be reported in the EPD, including resource use, waste categories and output flows. 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).

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-total	kg CO_2 eq.	2.52E+01	1.44E+00	2.35E+00	0	2.85E-02	0	0	0	0	0	2.88E-01	2.36E-01	0	5.34E-01	0
GWP-fossil	kg CO_2 eq.	2.72E+01	1.44E+00	2.88E-01	0	2.72E-02	0	0	0	0	0	2.88E-01	2.36E-01	0	5.39E-01	0
GWP-biogenic	kg CO_2 eq.	-2.07E+00	0.00E+00	2.06E+00	0	1.35E-03	0	0	0	0	0	5.39E-04	0.00E+00	0	1.34E-02	0
GWP-luluc	kg CO_2 eq.	4.33E-03	0.00E+00	2.51E-05	0	1.41E-05	0	0	0	0	0	2.51E-05	0.00E+00	0	6.63E-05	0
ODP	kg CFC 11 eq.	2.87E-10	3.67E-11	1.16E-12	0	3.18E-13	0	0	0	0	0	1.16E-12	5.98E-12	0	6.33E-12	0
AP	mol H^+ eq.	1.99E-01	9.79E-03	1.12E-03	0	5.79E-05	0	0	0	0	0	1.12E-03	1.60E-03	0	2.87E-03	0
EP-freshwater	kg P eq.	2.66E-05	4.03E-07	9.05E-07	0	1.42E-06	0	0	0	0	0	4.92E-07	6.58E-08	0	1.69E-06	0
EP-marine	kg N eq.	5.42E-02	3.82E-03	1.96E-04	0	2.20E-05	0	0	0	0	0	1.90E-04	6.23E-04	0	7.57E-04	0
EP-terrestrial	mol N eq.	6.03E-01	4.17E-02	2.09E-03	0	1.97E-04	0	0	0	0	0	2.08E-03	6.83E-03	0	8.31E-03	0

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
POCP	kg NMVOC eq.	1.39E-01	1.12E-02	5.59E-04	0	4.37E-05	0	0	0	0	0	5.54E-04	1.84E-03	0	2.28E-03	0
ADP-minerals&metals*	kg Sb eq.	2.65E-04	0.00E+00	8.61E-08	0	7.01E-09	0	0	0	0	0	8.61E-08	0.00E+00	0	9.60E-08	0
ADP-fossil*	MJ	4.39E+02	1.81E+01	5.94E+00	0	4.48E-01	0	0	0	0	0	5.94E+00	2.96E+00	0	8.11E+00	0
WDP*	m^3	3.67E+00	0.00E+00	1.07E-01	0	-8.90E-02	0	0	0	0	0	1.07E-01	0.00E+00	0	-3.29E-01	0
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																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO2 eq.	2.72E+01	1.44E+00	2.88E-01	0	2.72E-02	0	0	0	0	0	2.88E-01	2.36E-01	0	5.39E-01	0
Particulate Matter emissions	Disease incidence	1.42E-06	3.13E-08	8.06E-09	0	6.09E-10	0	0	0	0	0	7.67E-09	5.09E-09	0	3.85E-07	0
Ionizing radiation, human health[2]	kBq U235 eq.	8.37E-01	3.19E-19	8.21E-02	0	5.12E-03	0	0	0	0	0	8.21E-02	5.19E-20	0	7.37E-03	0
Eco-toxicity (freshwater)*	CTUe	4.98E+02	7.62E+01	2.42E+00	0	6.29E-01	0	0	0	0	0	2.35E+00	1.25E+01	0	5.29E+00	0
Human toxicity, cancer effects*	CTUh	2.86E-08	3.81E-10	1.42E-10	0	1.16E-11	0	0	0	0	0	1.41E-10	6.23E-11	0	8.06E-10	0
Human toxicity, non-cancer effects*	CTUh	5.92E-07	3.58E-08	2.39E-09	0	9.13E-10	0	0	0	0	0	2.35E-09	5.84E-09	0	4.06E-08	0
Land use related impacts/ Soil quality*	dimensionless	4.86E+01	0.00E+00	1.37E+00	0	1.25E-01	0	0	0	0	0	1.37E+00	0.00E+00	0	3.99E-01	0

** 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.*

[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 CO_2 is set to zero.

[2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of 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 ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

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	5.47E+01	0.00E+00	5.59E+00	0	1.77E-01	0	0	0	0	0	5.59E+00	0.00E+00	0	4.49E-01	0
PERM	MJ	7.26E+00	0.00E+00	-7.25E+00	0	1.99E-12	0	0	0	0	0	4.08E-11	0.00E+00	0	9.89E-12	0
PERT	MJ	6.20E+01	0.00E+00	-1.66E+00	0	1.77E-01	0	0	0	0	0	5.59E+00	0.00E+00	0	4.49E-01	0
PENRE	MJ	4.05E+02	1.81E+01	6.03E+00	0	4.48E-01	0	0	0	0	0	6.03E+00	2.96E+00	0	8.26E+00	0
PENRM	MJ	3.45E+01	0.00E+00	1.35E-04	0	3.44E-05	0	0	0	0	0	1.35E-04	0.00E+00	0	3.18E-11	0
PENRT	MJ	4.39E+02	1.81E+01	6.03E+00	0	4.48E-01	0	0	0	0	0	6.03E+00	2.96E+00	0	8.26E+00	0
SM	kg	1.07E-01	0.00E+00	0.00E+00	0	0.00E+00	0	0	0	0	0	0.00E+00	0.00E+00	0	0.00E+00	0
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0	0	0	0	0.00E+00	0.00E+00	0	0.00E+00	0
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0	0	0	0	0.00E+00	0.00E+00	0	0.00E+00	0
FW	m^3	1.69E-01	0.00E+00	1.41E-02	0	-1.99E-03	0	0	0	0	0	1.41E-02	0.00E+00	0	-7.67E-03	0
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	1.47E-05	0.00E+00	1.73E-09	0	4.37E-11	0	0	0	0	0	2.09E-10	0.00E+00	0	1.59E-06	0
Non-hazardous waste disposed	kg	2.24E+00	0.00E+00	1.32E-02	0	1.90E-03	0	0	0	0	0	2.15E-03	0.00E+00	0	1.16E+01	0
Radioactive waste disposed	kg	7.77E-03	0.00E+00	1.02E-03	0	3.44E-05	0	0	0	0	0	1.02E-03	0.00E+00	0	9.20E-05	0

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	9.69E-01	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	1.34E-01	0	0	0	0	0	0	0	0	0	0	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	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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
GLO	Global
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
NA	North America
ND	Not Declared

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INTERNATIONAL EPD SYSTEM

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