ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH:
EN 15804+A2 & ISO 14025

Product name:
Roofing Membranes, Vapour Barriers and Construction Foils

EPD holder:
"FOLIAREX" Spółka z ograniczoną odpowiedzialnością

Issued on 18 May 2026
Valid until 18 May 2031

GENERAL INFORMATION

EPD OWNER

Manufacturer / EPD Holder	"FOLIAREX" Spółka z ograniczoną odpowiedzialnością
Address	ul. Osiedle Przemysłowe 22, Słubice, Polska
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Website	www.foliarex.com.pl

PRODUCT IDENTIFICATION

Product name	Roofing Membranes, Vapour Barriers and Construction Foils
Place(s) of production	Poland

EPD INFORMATION

EPD Polska program operator	Multicert Sp. z o.o. Ul. Mydlarska 47, 04-690 Warszawa, Poland www.epd.org.pl, epd@epd.org.pl
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The EN 15804+A2 standard serves as the core PCR.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐Internal certification ☒ External verification
EPD verifier	Daniel Wałach, Ph.D.
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Reasons for performing LCA	B2B
Accountability	The EPD Holder is responsible for the information provided and evidence. Multicert Sp. z o.o. does not hold responsibility for the manufacturer information, life cycle assessment data nor supporting evidence.

EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

COMPANY INFORMATION

HOLDER OF THE EPD

"FOLIAREX" Spółka z ograniczoną odpowiedzialnością
ul. Osiedle Przemysłowe 22
Słubice, Polska

COMPANY PROFILE

Foliarex Sp. z o.o. is a Polish company with over 30 years of experience in the production of packaging films, construction films, horticultural films, and modern roofing membranes. The company operates three production facilities located in Drożdżyce, Stęszew, and Słubice, collectively processing tens of thousands of tons of polyethylene and polypropylene annually.

Foliarex prioritizes quality and innovation in its products, adhering to the requirements of the System 3 for the Assessment and Verification of Constancy of Performance (AVCP). By incorporating modern technologies, such as production material recycling lines, the company delivers solutions precisely tailored to the needs of clients in the construction industry.

With years of experience, a skilled workforce, and an extensive product portfolio, Foliarex is a trusted partner for projects involving films and roofing membranes. The company ensures professionalism, reliability, and the highest quality at every stage of cooperation.

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PRODUCT INFORMATION

PRODUCT DESCRIPTION

The products covered by this Environmental Product Declaration are polymer-based construction membranes and foils intended for roofing and building envelope applications. The declared products are manufactured by FOLIAREX Sp. z o.o. using extrusion, lamination, metallization and converting technologies.

The product family includes high vapour permeable roofing membranes, TPU roofing membranes, structured roofing membranes, metallized vapour barriers, adaptive vapour control membranes and reinforced construction foils. The products are intended for use in pitched roof systems, wall assemblies and other building envelope applications in residential, commercial and industrial construction.

The declared products are manufactured in multi-layer configurations consisting primarily of polypropylene (PP), polyethylene (PE), thermoplastic polyurethane (TPU), reinforcement meshes and functional polymer layers. Certain product variants additionally incorporate metallized functional coatings or structural spacer layers.

PRODUCT GROUPS

Group 1 – High Vapour Permeable Roofing Membranes

Products: STROTEX EXPERT 150, STROTEX-Q ULTIMA

High vapour permeable multi-layer roofing membranes intended for use as underlays in pitched roof constructions. The membranes provide protection against water ingress, wind penetration and moisture accumulation while maintaining high vapour permeability (Sd = 0.02 m). The products are manufactured using multi-layer polypropylene nonwoven structures combined with functional membrane layers applied using extrusion and lamination technologies.

Group 2 – TPU Roofing Membranes

Products: STROTEX-Q TPU 160, STROTEX-Q TPU 180, STROTEX-Q TPU 210

Multi-layer high vapour permeable roofing membranes incorporating thermoplastic polyurethane (TPU) functional layers, designed for demanding roofing applications including metal roofing systems and standing seam roofs. The TPU functional layer contributes to enhanced durability, resistance to high temperatures (short-term up to 120 °C), and resistance to many aggressive substances. The products consist primarily of polypropylene nonwoven layers, TPU functional layers and polymer bonding layers.

Group 3 – Structured Roofing Membranes

Products: STROTEX-Q VENTGRID

Structured roofing membrane composed of a high vapour permeable roofing membrane laminated with a three-dimensional polypropylene structural spacer layer, intended for metal roofing systems including standing seam metal roofs. The integrated spacer structure supports drainage and ventilation beneath metal roofing coverings while reducing the risk of condensation accumulation and mechanical damage. Due to the integrated structural spacer layer, this product differs from standard roofing membranes in geometry, thickness and material consumption, while maintaining comparable roofing functionality.

Group 4 – Metallized Vapour Barriers

Products: STROTEX AL 90, STROTEX AL 150, STROTEX AL 180

Multi-layer metallized vapour control membranes intended to limit water vapour transmission in roof and wall assemblies (Sd ≈ 50 m). The products incorporate metallized polymer layers providing reflective thermal properties while maintaining vapour barrier functionality. The products consist primarily of polyethylene-based membrane layers, polypropylene reinforcement mesh and metallized functional coatings. Metallization is applied as a thin functional coating and does not constitute a separate structural aluminium foil layer.

Group 5 – Adaptive Vapour Control Membranes

Products: SdFlex

Vapour control membrane designed to regulate moisture transport within building envelope assemblies. The membrane is applied on the warm side of thermal insulation in roof and wall constructions as a vapour control layer.

Group 6 – Reinforced Construction Foils

Products: STROTEX PI

Reinforced multi-layer polymer foil intended for vapour barrier and protective applications in building envelope systems. The products are manufactured using polymer film layers combined with reinforcement mesh structures improving mechanical resistance and dimensional stability.

Group 7

Product: STROTEX-Q ADVANCED PLUS

STROTEX-Q ADVANCED PLUS is a highly vapour-permeable roof underlayment designed for use under the primary roof covering. Distinguished by a special long-fiber nonwoven fleece, this membrane offers superior tensile and tear resistance. Additionally, the unique

composition of this fleece functions as a buffer for excess moisture. The membrane is completely waterproof, protects thermal insulation from the outside against precipitation, and serves as an excellent wind barrier for walls in frame structures, log houses, residential buildings, and industrial halls. The product is suitable for all ventilated and non-ventilated roofs under a wide variety of materials (e.g., ceramic tile, concrete tile, sheet metal).

PRODUCT APPLICATION

The declared products are intended for use in residential, commercial and industrial construction applications, including:

– pitched roof systems and roof underlays;

– wall assemblies and building envelope protection;

– vapour control layers and vapour barriers;

– thermal insulation protection;

– ventilated and unventilated roof systems;

– metal roofing systems including standing seam roofing;

– renovation and new construction applications.

PRODUCT STANDARDS

The products comply, where applicable, with the following standards:

EN 13859-1:2010: Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 1: Underlays for discontinuous roofing.

EN 13859-2:2010: Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 2: Underlays for walls.

EN 13984:2013: Flexible sheets for waterproofing – Plastic and rubber vapour control layers – Definitions and characteristics.

Additional product-specific standards may apply depending on product type and intended application.

ADDITIONAL TECHNICAL INFORMATION

Following are the essential characteristics and performance properties of the declared products:

No.	Product name	Basis weight	Roll dimensions	Sd-value	Water tightness	Fire reaction
1	STROTEX AL 90	70 g/m²	1.5m × 50m	≈ 50 m	W1	E
2	STROTEX AL 150	120 g/m²	1.5m × 50m	≈ 50 m	W1	E
3	STROTEX AL 180	144 g/m²	1.5m × 50m	≈ 50 m	W1	E
4	STROTEX-Q TPU 160	160 g/m²	1.5m × 50m	0.02 m	W1	Bs1d0
5	STROTEX-Q TPU 180	180 g/m²	1.5m × 50m	0.07 m	W1	Bs1d0
6	STROTEX-Q TPU 210	210 g/m²	1.5m × 50m	0.07 m	W1	Bs1d0
7	SdFlex	90 g/m²	1.5m × 50m	variable	W1	E
8	STROTEX EXPERT 150	150 g/m²	1.5m × 50m	0.02 m	W1	E
9	STROTEX-Q ULTIMA	200 g/m²	1.5m × 50m	0.02 m	W1	E
10	STROTEX-Q VENTGRID	450 g/m²	1.5m × 25m	0.02 m	W1	F
11	STROTEX PI	110 g/m²	1.5m × 75m	≥ 100 m	W1	E
12	STROTEX-Q ADVANCED PLUS	260 g/m²	1.5m × 50m	0.02 m	W1	E

PRODUCT RAW MATERIAL COMPOSITION

Id.	1	2	3	4	5	6	7	8	9	10	11	12
Materials/ Product name	STROTEX AL 90	STROTEX AL 150	STROTEX AL 180	STROTEX-Q TPU 160	STROTEX-Q TPU 180	STROTEX-Q TPU 210	SdFlex	STROTEX EXPERT 150	STROTEX-Q ULTIMA	STROTEX-Q VENTGRID	STROTEX PI	STROTEX-Q ADVANCED PLUS
LDPE	40.00%	17.52%	17.88%	0.00%							34.32%	
PP								63.10%	59.07%	63.91%		
recycled PP										2.65%		
PE film	5.40%	50.78%	54.51%								37.65%	42.05%
BOPP film	24.45%	14.03%	12.28%									
Reinforcement fabric	27.78%	16.14%	14.40%								28.03%	
PP nonwoven				65.73%	74.79%	70.08%						54.20%
Glue							8.74%	1.20%				3.75%
a.Nonwoven backing (semi-finished product)							76.03%					
b. Nonwoven backing (semi-finished product)								18.83%	25.22%			
c. PE Functional film (semi-finished product)								15.69%				
d. PE Functional film (semi-finished product)									14.48%			
e. Roofing membrane (semi-finished product)										32.04%		
f. PA functional film (semi-finished product)							15.23%					
Pigment								0.83%	0.93%	0.68%		
EVA	2.36%	1.52%	0.93%									
UV absorber								0.35%	0.30%	0.72%		
TPU				34.27%	25.21%	29.92%						

SUBSTANCES, REACH - VERY HIGH CONCERN

The declared products do not contain any REACH SVHC (Substances of Very High Concern) in amounts greater than 0.1% (1,000 ppm) by weight.

PRODUCT LIFE-CYCLE

RAW MATERIAL SUPPLY AND TRANSPORT (A1-A3)

Modules A1–A2 cover the supply of raw materials and their transport to the manufacturing facility. Module A1 includes the main and auxiliary raw materials used for the production of the analyzed products, in accordance with the product formulations and data provided by the manufacturer. Module A2 covers the transport of raw materials from suppliers to the production facility. Transport data were based on average distances calculated from the data provided by the manufacturer, considering supplier locations and the mass of individual raw materials. Road transport was the dominant mode of transport. Sea transport was included only for selected raw material inputs, based on the supply chain information provided by the manufacturer.

MANUFACTURING (A3)

Module A3 covers the manufacturing processes carried out at the FOLIAREX production facilities, leading to the production of finished membranes and construction foils. The scope of the processes depends on the product type and may include raw material preparation and dosing, processing of polymer materials, bonding of individual layers, lamination, reinforcement with mesh structures or spacer layers, as well as converting of finished products.

During converting, foils and membranes are cut to the required widths and wound into cardboard cores. The finished rolls are then packed in protective film and placed on wooden pallets for storage and further transport. Module A3 includes the consumption of electricity, auxiliary and packaging materials, as well as production waste generated during the processes carried out at the facility and its processing.

END OF LIFE STAGE (C1, C2, C3, C4)

In the adopted end-of-life scenario, 100% of the product waste is assumed to be sent for incineration with energy recovery. No recycling or landfilling of the product is considered. Therefore, Module C3 does not include waste processing for material recovery. The environmental impacts associated with the incineration of the product are reported in Module C4.

BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

Module D accounts for the potential environmental benefits resulting from energy recovery during thermal waste treatment. The recovered energy is assumed to substitute conventional electricity and heat production, and the corresponding avoided burdens are reported beyond the system boundary in Module D, in accordance with EN 15804+A2.

LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data 2025

DECLARED AND FUNCTIONAL UNIT

Declared unit: 1 m^2

No.	Product name	Mass per Declared Unit [g/m^2]
1	STROTEX AL 90	70
2	STROTEX AL 150	120
3	STROTEX AL 180	144
4	STROTEX-Q TPU 160	160
5	STROTEX-Q TPU 180	180
6	STROTEX-Q TPU 210	210
7	SdFlex	90
8	STROTEX EXPERT 150	150
9	STROTEX-Q ULTIMA	200
10	STROTEX-Q VENTGRID	450
11	STROTEX PI	110
12	STROTEX-Q ADVANCED PLUS	260

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Id.	Product name	Biogenic carbon content in the product, kg C:	Biogenic carbon content in the packaging, kg C:
1	STROTEX AL 90	0.0	0.003
2	STROTEX AL 150	0.0	0.004
3	STROTEX AL 180	0.0	0.004
4	STROTEX-Q TPU 160	0.0	0.006
5	STROTEX-Q TPU 180	0.0	0.006
6	STROTEX-Q TPU 210	0.0	0.006
7	SdFlex	0.0	0.004
8	STROTEX EXPERT 150	0.0	0.005
9	STROTEX-Q ULTIMA	0.0	0.006
10	STROTEX-Q VENTGRID	0.0	0.028
11	STROTEX PI	0.0	0.004
12	STROTEX-Q ADVANCED PLUS	0.0	0.006

Note: The biogenic carbon is present in wood-based packaging materials (pallets and cardboard).

SYSTEM BOUNDARY

The EPD scope is "Cradle-to-Gate with options" in accordance with EN 15804+A2. The study covers the product stage A1–A3 and additionally includes selected optional life-cycle modules: C1–C4 (end-of-life: deconstruction, waste transport, waste processing and disposal) and D (benefits and loads beyond the system boundary from material recovery). Modules A4 and A5 are marked as MND (Module Not Declared) because the products are used in various applications depending on specific construction projects. Modules B1–B7 are marked as MND (Module Not Declared).

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deinstallation/Demolition	Transport	Waste processing	Disposal	Reuse / Recycling

X – module included/declared
MND – Module Not Declared
MNR – Module Not Relevant

CUT-OFF CRITERIA

The study fully covers all mandatory EN 15804:2012+A2:2019 modules and processes. No hazardous materials or substances have been omitted from the system boundary.

All major raw material and energy inputs are included. All inputs and outputs from unit processes for which data are available are taken into account in the calculations. No single neglected unit process exceeds 1% of the total mass or energy flows. The total of all neglected input and output flows does not exceed 5% of the total mass or energy use.

The production of capital goods (equipment), construction of infrastructure, and the maintenance and operation of capital equipment are excluded.

ESTIMATES AND ASSUMPTIONS

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below:

- Module (A1-A3): All relevant data declared by FOLIAREX have been included. The average transport distances of each material were calculated based on the locations of all suppliers and allocated as per the declared unit. Energy resources were considered and accounted for as disclosed. Additionally, on-site waste management has been addressed.
- Module (C1): Roofing membranes at the end of their service life are dismantled without requiring additional equipment or energy.
- Module (C2): 100 km distance is assumed for the transportation of waste to a thermal waste treatment / incineration facility.
- Module (C3): No waste processing activities are assumed in Module C3.
- Module (C4): It is assumed that 100% of the product waste is sent to thermal waste treatment with energy recovery, with an energy recovery efficiency below 60%. The impacts of incineration are therefore reported in Module C4.

ALLOCATION

Allocation was carried out in accordance with EN 15804+A2, applying a hierarchical approach that prioritizes the use of product-specific primary data where available and applies mass-based allocation for shared production processes based on representative site-level data.

Product-specific data directly attributed to the declared products:

The following parameters were quantified specifically for each declared product based on technical documentation, production records and direct measurements:

– the net mass of the declared product per declared unit (1 m^2),

– the material composition of each product variant,

– the mass of packaging materials applied per declared unit,

– product-specific production waste rates, where available, calculated based on the mass balance between raw material input and finished product output.

These parameters are directly linked to the declared unit and therefore did not require allocation.

Mass-based allocation of shared production processes:

Other inputs and outputs used in the LCA model — including electricity consumption, auxiliary materials and emissions — could not be measured at the level of an individual product. These flows are associated with shared production processes used for the overall manufacturing of polymer-based construction films and membranes at the facility.

For these shared processes, mass-based allocation was applied in accordance with EN 15804+A2. Allocation was based on the ratio of the mass of each declared product to the total mass of products manufactured at the respective facility during the reference period.

Mass-based allocation is considered appropriate for this product group, as energy demand and auxiliary material consumption are primarily driven by the mass of polymer material processed.

DATA QUALITY

The life cycle assessment (LCA) is based on high-quality foreground data collected by FOLIAREX Sp. z o.o. for the reference period covering the full year 2025.

Product-specific primary data were available for key physical parameters of the declared products, including the net mass per declared unit, the material composition of each product variant, and the packaging materials applied per declared unit.

For production processes and flows that could not be measured at the level of an individual product — including electricity consumption, auxiliary materials and emissions — representative site-level operational data were used. These data are representative of the overall manufacturing operations for polymer-based construction films and membranes at the FOLIAREX facilities.

Background datasets, including datasets for energy supply, transport, raw material production and end-of-life processes, were derived from LCA for Experts Software System and Database for Life Cycle Engineering, version 10.9.5.2. Additional representative data from publicly available EPDs were used where relevant. Electricity consumption in Module A3 is modelled using the national electricity mix for Poland, reflecting current emission factors. All major material and energy inputs are included, and no single excluded process exceeds 1% of total mass or energy flows, with the cumulative contribution of excluded processes remaining below 5%, in accordance with the applied cut-off criteria.

GEOGRAPHIC REPRESENTATIVENESS

The product system is manufactured and managed in Poland (Europe).

ENVIRONMENTAL IMPACT DATA – STROTEX AL 90 (70 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	2.17E-01	MND	MND	0.00E+00	5.90E-04	0.00E+00	1.75E-01	-9.26E-02
GWP-fossil	kg CO2 eq.	2.16E-01	MND	MND	0.00E+00	5.97E-04	0.00E+00	1.75E-01	-9.24E-02
GWP-biogenic	kg CO2 eq.	5.59E-04	MND	MND	0.00E+00	-9.72E-06	0.00E+00	9.85E-06	-4.28E-05
GWP-LULUC	kg CO2 eq.	6.89E-04	MND	MND	0.00E+00	2.52E-06	0.00E+00	6.48E-06	-9.00E-05
ODP	kg CFC-11 eq.	3.47E-07	MND	MND	0.00E+00	2.78E-16	0.00E+00	6.84E-14	-1.20E-12
AP	mol H+ eq.	5.83E-04	MND	MND	0.00E+00	1.07E-06	0.00E+00	2.32E-05	-1.56E-04
EP-freshwater	kg P eq.	1.75E-05	MND	MND	0.00E+00	1.49E-09	0.00E+00	3.49E-09	-8.96E-09
EP-marine	kg N eq.	1.47E-04	MND	MND	0.00E+00	4.47E-07	0.00E+00	6.43E-06	-4.15E-05
EP-terrestrial	mol N eq.	1.57E-03	MND	MND	0.00E+00	4.84E-06	0.00E+00	1.07E-04	-4.57E-04
POCP	kg NMVOC eq.	5.62E-04	MND	MND	0.00E+00	9.79E-07	0.00E+00	1.79E-05	-1.20E-04
ADPE (disc.2)	kg Sb eq.	3.86E-05	MND	MND	0.00E+00	4.26E-11	0.00E+00	5.33E-10	-7.04E-09
ADPF (disc.2)	MJ, (NCV)	6.35E+00	MND	MND	0.00E+00	7.69E-03	0.00E+00	7.62E-02	-1.45E+00
WDP (disc.2)	m3 World eq.	3.47E-02	MND	MND	0.00E+00	2.39E-06	0.00E+00	1.66E-02	-4.73E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	4.09E-09	MND	MND	0.00E+00	9.28E-12	0.00E+00	2.80E-10	-1.60E-09
IRP (disc.1)	kBq U235 eq.	7.11E-03	MND	MND	0.00E+00	1.58E-06	0.00E+00	2.43E-04	-5.40E-05
ETP-fw (disc.2)	CTUe	2.92E+00	MND	MND	0.00E+00	6.61E-03	0.00E+00	5.23E-02	-2.35E-01
HTP-c (disc.2)	CTUh	5.33E-11	MND	MND	0.00E+00	1.31E-13	0.00E+00	2.49E-12	-8.03E-12
HTP-nc (disc.2)	CTUh	1.02E-09	MND	MND	0.00E+00	6.81E-12	0.00E+00	2.05E-10	-1.63E-10
SQP (disc.2)	Dimensionless	1.95E-01	MND	MND	0.00E+00	2.06E-03	0.00E+00	1.58E-02	-3.34E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	4.69E-01	MND	MND	0.00E+00	5.47E-04	0.00E+00	2.03E-02	-1.59E-01
PERM	MJ, (NCV)	1.45E-09	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	4.69E-01	MND	MND	0.00E+00	5.47E-04	0.00E+00	2.03E-02	-1.59E-01
PENRE	MJ, (NCV)	6.78E+00	MND	MND	0.00E+00	7.69E-03	0.00E+00	1.10E+00	-1.45E+00
PENRM	MJ, (NCV)	1.03E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-1.03E+00	0.00E+00
PENRT	MJ, (NCV)	7.81E+00	MND	MND	0.00E+00	7.69E-03	0.00E+00	7.62E-02	-1.45E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.05E-03	MND	MND	0.00E+00	1.71E-07	0.00E+00	3.94E-04	-1.15E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.									

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.23E-04	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	3.17E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	5.68E-01	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	8.46E-10	MND	MND	0.00E+00	3.55E-13	0.00E+00	4.21E-11	-6.56E-11
NHWD	kg	1.51E-03	MND	MND	0.00E+00	1.48E-06	0.00E+00	1.59E-02	-5.35E-04
RWD	kg	4.80E-05	MND	MND	0.00E+00	1.21E-08	0.00E+00	1.85E-06	-4.97E-07
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX AL 150 (120 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	3.99E-01	MND	MND	0.00E+00	1.01E-03	0.00E+00	3.00E-01	-1.59E-01
GWP-fossil	kg CO2 eq.	3.97E-01	MND	MND	0.00E+00	1.02E-03	0.00E+00	3.00E-01	-1.58E-01
GWP-biogenic	kg CO2 eq.	1.46E-03	MND	MND	0.00E+00	-1.67E-05	0.00E+00	1.69E-05	-7.34E-05
GWP-LULUC	kg CO2 eq.	8.45E-04	MND	MND	0.00E+00	4.32E-06	0.00E+00	1.11E-05	-1.54E-04
ODP	kg CFC-11 eq.	3.61E-07	MND	MND	0.00E+00	4.77E-16	0.00E+00	1.17E-13	-2.05E-12
AP	mol H+ eq.	9.27E-04	MND	MND	0.00E+00	1.83E-06	0.00E+00	3.98E-05	-2.68E-04
EP-freshwater	kg P eq.	1.84E-05	MND	MND	0.00E+00	2.56E-09	0.00E+00	5.98E-09	-1.54E-08
EP-marine	kg N eq.	2.34E-04	MND	MND	0.00E+00	7.67E-07	0.00E+00	1.10E-05	-7.12E-05
EP-terrestrial	mol N eq.	2.54E-03	MND	MND	0.00E+00	8.29E-06	0.00E+00	1.83E-04	-7.83E-04
POCP	kg NMVOC eq.	8.39E-04	MND	MND	0.00E+00	1.68E-06	0.00E+00	3.08E-05	-2.05E-04
ADPE (disc.2)	kg Sb eq.	4.02E-05	MND	MND	0.00E+00	7.31E-11	0.00E+00	9.13E-10	-1.21E-08
ADPF (disc.2)	MJ, (NCV)	1.15E+01	MND	MND	0.00E+00	1.32E-02	0.00E+00	1.31E-01	-2.48E+00
WDP (disc.2)	m3 World eq.	3.66E-02	MND	MND	0.00E+00	4.10E-06	0.00E+00	2.84E-02	-8.11E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	7.37E-09	MND	MND	0.00E+00	1.59E-11	0.00E+00	4.80E-10	-2.75E-09
IRP (disc.1)	kBq U235 eq.	9.65E-03	MND	MND	0.00E+00	2.71E-06	0.00E+00	4.16E-04	-9.26E-05
ETP-fw (disc.2)	CTUe	5.91E+00	MND	MND	0.00E+00	1.13E-02	0.00E+00	8.96E-02	-4.03E-01
HTP-c (disc.2)	CTUh	1.07E-10	MND	MND	0.00E+00	2.25E-13	0.00E+00	4.26E-12	-1.38E-11
HTP-nc (disc.2)	CTUh	2.33E-09	MND	MND	0.00E+00	1.17E-11	0.00E+00	3.51E-10	-2.79E-10
SQP (disc.2)	Dimensionless	4.52E-01	MND	MND	0.00E+00	3.53E-03	0.00E+00	2.71E-02	-5.72E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.07E+00	MND	MND	0.00E+00	9.38E-04	0.00E+00	3.49E-02	-2.73E-01
PERM	MJ, (NCV)	1.52E-09	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	1.07E+00	MND	MND	0.00E+00	9.38E-04	0.00E+00	3.49E-02	-2.73E-01
PENRE	MJ, (NCV)	1.19E+01	MND	MND	0.00E+00	1.32E-02	0.00E+00	3.57E+00	-2.48E+00
PENRM	MJ, (NCV)	3.44E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-3.44E+00	0.00E+00
PENRT	MJ, (NCV)	1.54E+01	MND	MND	0.00E+00	1.32E-02	0.00E+00	1.31E-01	-2.48E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.68E-03	MND	MND	0.00E+00	2.93E-07	0.00E+00	6.75E-04	-1.97E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.									

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.02E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	5.44E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	9.74E-01	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	3.70E-09	MND	MND	0.00E+00	6.09E-13	0.00E+00	7.23E-11	-1.12E-10
NHWD	kg	4.47E-03	MND	MND	0.00E+00	2.54E-06	0.00E+00	2.72E-02	-9.17E-04
RWD	kg	7.32E-05	MND	MND	0.00E+00	2.07E-08	0.00E+00	3.17E-06	-8.52E-07
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX AL 180 (144 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	4.81E-01	MND	MND	0.00E+00	1.21E-03	0.00E+00	3.60E-01	-1.90E-01
GWP-fossil	kg CO2 eq.	4.78E-01	MND	MND	0.00E+00	1.23E-03	0.00E+00	3.60E-01	-1.90E-01
GWP-biogenic	kg CO2 eq.	1.80E-03	MND	MND	0.00E+00	-2.00E-05	0.00E+00	2.03E-05	-8.81E-05
GWP-LULUC	kg CO2 eq.	9.39E-04	MND	MND	0.00E+00	5.18E-06	0.00E+00	1.33E-05	-1.85E-04
ODP	kg CFC-11 eq.	3.80E-07	MND	MND	0.00E+00	5.72E-16	0.00E+00	1.41E-13	-2.47E-12
AP	mol H+ eq.	1.09E-03	MND	MND	0.00E+00	2.20E-06	0.00E+00	4.78E-05	-3.21E-04
EP-freshwater	kg P eq.	1.95E-05	MND	MND	0.00E+00	3.07E-09	0.00E+00	7.17E-09	-1.84E-08
EP-marine	kg N eq.	2.78E-04	MND	MND	0.00E+00	9.21E-07	0.00E+00	1.32E-05	-8.55E-05
EP-terrestrial	mol N eq.	3.02E-03	MND	MND	0.00E+00	9.95E-06	0.00E+00	2.20E-04	-9.40E-04
POCP	kg NMVOC eq.	9.85E-04	MND	MND	0.00E+00	2.01E-06	0.00E+00	3.69E-05	-2.46E-04
ADPE (disc.2)	kg Sb eq.	4.23E-05	MND	MND	0.00E+00	8.77E-11	0.00E+00	1.10E-09	-1.45E-08
ADPF (disc.2)	MJ, (NCV)	1.38E+01	MND	MND	0.00E+00	1.58E-02	0.00E+00	1.57E-01	-2.98E+00
WDP (disc.2)	m3 World eq.	4.09E-02	MND	MND	0.00E+00	4.92E-06	0.00E+00	3.41E-02	-9.73E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.									
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	8.91E-09	MND	MND	0.00E+00	1.91E-11	0.00E+00	5.76E-10	-3.30E-09
IRP (disc.1)	kBq U235 eq.	1.17E-02	MND	MND	0.00E+00	3.25E-06	0.00E+00	4.99E-04	-1.11E-04
ETP-fw (disc.2)	CTUe	7.24E+00	MND	MND	0.00E+00	1.36E-02	0.00E+00	1.08E-01	-4.83E-01
HTP-c (disc.2)	CTUh	1.32E-10	MND	MND	0.00E+00	2.70E-13	0.00E+00	5.11E-12	-1.65E-11
HTP-nc (disc.2)	CTUh	2.87E-09	MND	MND	0.00E+00	1.40E-11	0.00E+00	4.21E-10	-3.35E-10
SQP (disc.2)	Dimensionless	5.63E-01	MND	MND	0.00E+00	4.24E-03	0.00E+00	3.25E-02	-6.87E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.32E+00	MND	MND	0.00E+00	1.13E-03	0.00E+00	4.18E-02	-3.28E-01
PERM	MJ, (NCV)	1.59E-09	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	1.32E+00	MND	MND	0.00E+00	1.13E-03	0.00E+00	4.18E-02	-3.28E-01
PENRE	MJ, (NCV)	1.43E+01	MND	MND	0.00E+00	1.58E-02	0.00E+00	4.37E+00	-2.98E+00
PENRM	MJ, (NCV)	4.21E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-4.21E+00	0.00E+00
PENRT	MJ, (NCV)	1.85E+01	MND	MND	0.00E+00	1.58E-02	0.00E+00	1.57E-01	-2.98E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.98E-03	MND	MND	0.00E+00	3.51E-07	0.00E+00	8.10E-04	-2.36E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.63E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	6.53E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.17E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	5.10E-09	MND	MND	0.00E+00	7.31E-13	0.00E+00	8.67E-11	-1.35E-10
NHWD	kg	5.94E-03	MND	MND	0.00E+00	3.05E-06	0.00E+00	3.27E-02	-1.10E-03
RWD	kg	8.93E-05	MND	MND	0.00E+00	2.49E-08	0.00E+00	3.81E-06	-1.02E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX-Q TPU 160 (160 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1.29E+00	MND	MND	0.00E+00	1.35E-03	0.00E+00	4.00E-01	-2.21E-01
GWP-fossil	kg CO2 eq.	1.28E+00	MND	MND	0.00E+00	1.36E-03	0.00E+00	3.99E-01	-2.21E-01
GWP-biogenic	kg CO2 eq.	1.08E-02	MND	MND	0.00E+00	-2.22E-05	0.00E+00	2.25E-05	-1.02E-04
GWP-LULUC	kg CO2 eq.	2.12E-03	MND	MND	0.00E+00	5.76E-06	0.00E+00	1.48E-05	-2.15E-04
ODP	kg CFC-11 eq.	3.99E-09	MND	MND	0.00E+00	6.36E-16	0.00E+00	1.56E-13	-2.86E-12
AP	mol H+ eq.	5.63E-03	MND	MND	0.00E+00	2.44E-06	0.00E+00	5.31E-05	-3.73E-04
EP-freshwater	kg P eq.	1.51E-04	MND	MND	0.00E+00	3.41E-09	0.00E+00	7.97E-09	-2.14E-08
EP-marine	kg N eq.	1.28E-03	MND	MND	0.00E+00	1.02E-06	0.00E+00	1.47E-05	-9.93E-05
EP-terrestrial	mol N eq.	1.33E-02	MND	MND	0.00E+00	1.11E-05	0.00E+00	2.44E-04	-1.09E-03
POCP	kg NMVOC eq.	3.82E-03	MND	MND	0.00E+00	2.24E-06	0.00E+00	4.10E-05	-2.86E-04
ADPE (disc.2)	kg Sb eq.	3.28E-06	MND	MND	0.00E+00	9.75E-11	0.00E+00	1.22E-09	-1.68E-08
ADPF (disc.2)	MJ, (NCV)	1.78E+01	MND	MND	0.00E+00	1.76E-02	0.00E+00	1.74E-01	-3.46E+00
WDP (disc.2)	m3 World eq.	2.07E-01	MND	MND	0.00E+00	5.46E-06	0.00E+00	3.79E-02	-1.13E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2.03E-08	MND	MND	0.00E+00	2.12E-11	0.00E+00	6.40E-10	-3.83E-09
IRP (disc.1)	kBq U235 eq.	4.55E-03	MND	MND	0.00E+00	3.61E-06	0.00E+00	5.54E-04	-1.29E-04
ETP-fw (disc.2)	CTUe	3.80E+00	MND	MND	0.00E+00	1.51E-02	0.00E+00	1.19E-01	-5.61E-01
HTP-c (disc.2)	CTUh	8.90E-11	MND	MND	0.00E+00	3.00E-13	0.00E+00	5.68E-12	-1.92E-11
HTP-nc (disc.2)	CTUh	4.07E-09	MND	MND	0.00E+00	1.56E-11	0.00E+00	4.68E-10	-3.89E-10
SQP (disc.2)	Dimensionless	3.37E+00	MND	MND	0.00E+00	4.71E-03	0.00E+00	3.61E-02	-7.98E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.82E+00	MND	MND	0.00E+00	1.25E-03	0.00E+00	4.65E-02	-3.81E-01
PERM	MJ, (NCV)	1.27E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	1.94E+00	MND	MND	0.00E+00	1.25E-03	0.00E+00	4.65E-02	-3.81E-01
PENRE	MJ, (NCV)	1.79E+01	MND	MND	0.00E+00	1.76E-02	0.00E+00	4.78E+00	-3.46E+00
PENRM	MJ, (NCV)	4.61E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-4.61E+00	0.00E+00
PENRT	MJ, (NCV)	2.25E+01	MND	MND	0.00E+00	1.76E-02	0.00E+00	1.74E-01	-3.46E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	6.63E-03	MND	MND	0.00E+00	3.91E-07	0.00E+00	9.01E-04	-2.75E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.									

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.97E-04	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	4.08E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	7.26E-01	0.00E+00
EET	MJ	7.30E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.30E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	7.31E-04	MND	MND	0.00E+00	8.12E-13	0.00E+00	9.63E-11	-1.57E-10
NHWD	kg	7.41E-02	MND	MND	0.00E+00	3.38E-06	0.00E+00	3.63E-02	-1.28E-03
RWD	kg	4.90E-05	MND	MND	0.00E+00	2.77E-08	0.00E+00	4.23E-06	-1.19E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX-Q TPU 180 (180 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1.42E+00	MND	MND	0.00E+00	1.52E-03	0.00E+00	4.49E-01	-2.49E-01
GWP-fossil	kg CO2 eq.	1.41E+00	MND	MND	0.00E+00	1.54E-03	0.00E+00	4.49E-01	-2.48E-01
GWP-biogenic	kg CO2 eq.	1.32E-02	MND	MND	0.00E+00	-2.50E-05	0.00E+00	2.53E-05	-1.15E-04
GWP-LULUC	kg CO2 eq.	2.42E-03	MND	MND	0.00E+00	6.47E-06	0.00E+00	1.67E-05	-2.42E-04
ODP	kg CFC-11 eq.	4.92E-09	MND	MND	0.00E+00	7.15E-16	0.00E+00	1.76E-13	-3.22E-12
AP	mol H+ eq.	6.65E-03	MND	MND	0.00E+00	2.74E-06	0.00E+00	5.97E-05	-4.20E-04
EP-freshwater	kg P eq.	1.86E-04	MND	MND	0.00E+00	3.84E-09	0.00E+00	8.97E-09	-2.41E-08
EP-marine	kg N eq.	1.47E-03	MND	MND	0.00E+00	1.15E-06	0.00E+00	1.65E-05	-1.12E-04
EP-terrestrial	mol N eq.	1.52E-02	MND	MND	0.00E+00	1.24E-05	0.00E+00	2.74E-04	-1.23E-03
POCP	kg NMVOC eq.	4.41E-03	MND	MND	0.00E+00	2.52E-06	0.00E+00	4.61E-05	-3.21E-04
ADPE (disc.2)	kg Sb eq.	4.01E-06	MND	MND	0.00E+00	1.10E-10	0.00E+00	1.37E-09	-1.89E-08
ADPF (disc.2)	MJ, (NCV)	1.90E+01	MND	MND	0.00E+00	1.98E-02	0.00E+00	1.96E-01	-3.90E+00
WDP (disc.2)	m3 World eq.	2.50E-01	MND	MND	0.00E+00	6.15E-06	0.00E+00	4.26E-02	-1.27E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2.23E-08	MND	MND	0.00E+00	2.39E-11	0.00E+00	7.20E-10	-4.31E-09
IRP (disc.1)	kBq U235 eq.	3.69E-03	MND	MND	0.00E+00	4.06E-06	0.00E+00	6.24E-04	-1.45E-04
ETP-fw (disc.2)	CTUe	3.31E+00	MND	MND	0.00E+00	1.70E-02	0.00E+00	1.34E-01	-6.31E-01
HTP-c (disc.2)	CTUh	7.55E-11	MND	MND	0.00E+00	3.37E-13	0.00E+00	6.39E-12	-2.16E-11
HTP-nc (disc.2)	CTUh	3.40E-09	MND	MND	0.00E+00	1.75E-11	0.00E+00	5.26E-10	-4.37E-10
SQP (disc.2)	Dimensionless	3.25E+00	MND	MND	0.00E+00	5.30E-03	0.00E+00	4.06E-02	-8.98E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.82E+00	MND	MND	0.00E+00	1.41E-03	0.00E+00	5.23E-02	-4.29E-01
PERM	MJ, (NCV)	1.57E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	1.98E+00	MND	MND	0.00E+00	1.41E-03	0.00E+00	5.23E-02	-4.29E-01
PENRE	MJ, (NCV)	1.90E+01	MND	MND	0.00E+00	1.98E-02	0.00E+00	5.21E+00	-3.90E+00
PENRM	MJ, (NCV)	5.02E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-5.02E+00	0.00E+00
PENRT	MJ, (NCV)	2.40E+01	MND	MND	0.00E+00	1.98E-02	0.00E+00	1.96E-01	-3.90E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	7.49E-03	MND	MND	0.00E+00	4.39E-07	0.00E+00	1.01E-03	-3.09E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	3.34E-04	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	1.81E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	8.16E-01	0.00E+00
EET	MJ	3.25E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.46E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	9.03E-04	MND	MND	0.00E+00	9.14E-13	0.00E+00	1.08E-10	-1.76E-10
NHWD	kg	8.75E-02	MND	MND	0.00E+00	3.81E-06	0.00E+00	4.08E-02	-1.44E-03
RWD	kg	4.07E-05	MND	MND	0.00E+00	3.11E-08	0.00E+00	4.76E-06	-1.34E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX Q TPU 210 (210 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1.98E+00	MND	MND	0.00E+00	1.77E-03	0.00E+00	5.24E-01	-2.90E-01
GWP-fossil	kg CO2 eq.	1.96E+00	MND	MND	0.00E+00	1.79E-03	0.00E+00	5.24E-01	-2.90E-01
GWP-biogenic	kg CO2 eq.	1.69E-02	MND	MND	0.00E+00	-2.92E-05	0.00E+00	2.95E-05	-1.34E-04
GWP-LULUC	kg CO2 eq.	3.20E-03	MND	MND	0.00E+00	7.55E-06	0.00E+00	1.94E-05	-2.82E-04
ODP	kg CFC-11 eq.	6.29E-09	MND	MND	0.00E+00	8.35E-16	0.00E+00	2.05E-13	-3.76E-12
AP	mol H+ eq.	8.66E-03	MND	MND	0.00E+00	3.20E-06	0.00E+00	6.97E-05	-4.90E-04
EP-freshwater	kg P eq.	2.38E-04	MND	MND	0.00E+00	4.48E-09	0.00E+00	1.05E-08	-2.81E-08
EP-marine	kg N eq.	1.94E-03	MND	MND	0.00E+00	1.34E-06	0.00E+00	1.93E-05	-1.30E-04
EP-terrestrial	mol N eq.	2.01E-02	MND	MND	0.00E+00	1.45E-05	0.00E+00	3.20E-04	-1.43E-03
POCP	kg NMVOC eq.	5.81E-03	MND	MND	0.00E+00	2.94E-06	0.00E+00	5.38E-05	-3.75E-04
ADPE (disc.2)	kg Sb eq.	5.14E-06	MND	MND	0.00E+00	1.28E-10	0.00E+00	1.60E-09	-2.21E-08
ADPF (disc.2)	MJ, (NCV)	2.59E+01	MND	MND	0.00E+00	2.31E-02	0.00E+00	2.29E-01	-4.55E+00
WDP (disc.2)	m3 World eq.	3.29E-01	MND	MND	0.00E+00	7.17E-06	0.00E+00	4.97E-02	-1.48E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	3.00E-08	MND	MND	0.00E+00	2.78E-11	0.00E+00	8.40E-10	-5.03E-09
IRP (disc.1)	kBq U235 eq.	5.99E-03	MND	MND	0.00E+00	4.74E-06	0.00E+00	7.28E-04	-1.69E-04
ETP-fw (disc.2)	CTUe	5.04E+00	MND	MND	0.00E+00	1.98E-02	0.00E+00	1.57E-01	-7.37E-01
HTP-c (disc.2)	CTUh	1.18E-10	MND	MND	0.00E+00	3.93E-13	0.00E+00	7.46E-12	-2.52E-11
HTP-nc (disc.2)	CTUh	5.41E-09	MND	MND	0.00E+00	2.04E-11	0.00E+00	6.14E-10	-5.10E-10
SQP (disc.2)	Dimensionless	4.72E+00	MND	MND	0.00E+00	6.19E-03	0.00E+00	4.74E-02	-1.05E-01
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	2.56E+00	MND	MND	0.00E+00	1.64E-03	0.00E+00	6.10E-02	-5.00E-01
PERM	MJ, (NCV)	2.00E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	2.76E+00	MND	MND	0.00E+00	1.64E-03	0.00E+00	6.10E-02	-5.00E-01
PENRE	MJ, (NCV)	2.60E+01	MND	MND	0.00E+00	2.31E-02	0.00E+00	7.06E+00	-4.55E+00
PENRM	MJ, (NCV)	6.83E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-6.83E+00	0.00E+00
PENRT	MJ, (NCV)	3.28E+01	MND	MND	0.00E+00	2.31E-02	0.00E+00	2.29E-01	-4.55E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.01E-02	MND	MND	0.00E+00	5.13E-07	0.00E+00	1.18E-03	-3.60E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	3.90E-04	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	1.81E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	9.52E-01	0.00E+00
EET	MJ	3.25E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.70E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	1.15E-03	MND	MND	0.00E+00	1.07E-12	0.00E+00	1.26E-10	-2.06E-10
NHWD	kg	1.21E-01	MND	MND	0.00E+00	4.44E-06	0.00E+00	4.76E-02	-1.68E-03
RWD	kg	6.49E-05	MND	MND	0.00E+00	3.63E-08	0.00E+00	5.55E-06	-1.56E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – SdFlex (90 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	4.22E-01	MND	MND	0.00E+00	7.58E-04	0.00E+00	2.25E-01	-1.27E-01
GWP-fossil	kg CO2 eq.	4.21E-01	MND	MND	0.00E+00	7.68E-04	0.00E+00	2.25E-01	-1.27E-01
GWP-biogenic	kg CO2 eq.	6.50E-04	MND	MND	0.00E+00	-1.25E-05	0.00E+00	1.27E-05	-5.89E-05
GWP-LULUC	kg CO2 eq.	2.53E-04	MND	MND	0.00E+00	3.24E-06	0.00E+00	8.33E-06	-1.24E-04
ODP	kg CFC-11 eq.	4.00E-12	MND	MND	0.00E+00	3.58E-16	0.00E+00	8.79E-14	-1.65E-12
AP	mol H+ eq.	7.61E-04	MND	MND	0.00E+00	1.37E-06	0.00E+00	2.99E-05	-2.15E-04
EP-freshwater	kg P eq.	5.53E-07	MND	MND	0.00E+00	1.92E-09	0.00E+00	4.48E-09	-1.23E-08
EP-marine	kg N eq.	1.92E-04	MND	MND	0.00E+00	5.75E-07	0.00E+00	8.27E-06	-5.71E-05
EP-terrestrial	mol N eq.	2.09E-03	MND	MND	0.00E+00	6.22E-06	0.00E+00	1.37E-04	-6.28E-04
POCP	kg NMVOC eq.	7.08E-04	MND	MND	0.00E+00	1.26E-06	0.00E+00	2.31E-05	-1.64E-04
ADPE (disc.2)	kg Sb eq.	4.48E-08	MND	MND	0.00E+00	5.48E-11	0.00E+00	6.85E-10	-9.67E-09
ADPF (disc.2)	MJ, (NCV)	9.37E+00	MND	MND	0.00E+00	9.89E-03	0.00E+00	9.80E-02	-1.99E+00
WDP (disc.2)	m3 World eq.	1.71E-02	MND	MND	0.00E+00	3.07E-06	0.00E+00	2.13E-02	-6.50E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	6.33E-09	MND	MND	0.00E+00	1.19E-11	0.00E+00	3.60E-10	-2.20E-09
IRP (disc.1)	kBq U235 eq.	4.08E-03	MND	MND	0.00E+00	2.03E-06	0.00E+00	3.12E-04	-7.42E-05
ETP-fw (disc.2)	CTUe	5.14E+00	MND	MND	0.00E+00	8.50E-03	0.00E+00	6.72E-02	-3.23E-01
HTP-c (disc.2)	CTUh	9.37E-11	MND	MND	0.00E+00	1.69E-13	0.00E+00	3.20E-12	-1.10E-11
HTP-nc (disc.2)	CTUh	1.89E-09	MND	MND	0.00E+00	8.75E-12	0.00E+00	2.63E-10	-2.24E-10
SQP (disc.2)	Dimensionless	2.43E-01	MND	MND	0.00E+00	2.65E-03	0.00E+00	2.03E-02	-4.59E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	7.05E-01	MND	MND	0.00E+00	7.04E-04	0.00E+00	2.62E-02	-2.19E-01
PERM	MJ, (NCV)	5.09E-03	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	7.10E-01	MND	MND	0.00E+00	7.04E-04	0.00E+00	2.62E-02	-2.19E-01
PENRE	MJ, (NCV)	9.23E+00	MND	MND	0.00E+00	9.89E-03	0.00E+00	3.69E+00	-1.99E+00
PENRM	MJ, (NCV)	3.60E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-3.60E+00	0.00E+00
PENRT	MJ, (NCV)	1.28E+01	MND	MND	0.00E+00	9.89E-03	0.00E+00	9.80E-02	-1.99E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.24E-03	MND	MND	0.00E+00	2.20E-07	0.00E+00	5.07E-04	-1.58E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	4.54E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	4.08E-01	0.00E+00
EET	MJ	8.11E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	7.30E-01	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	1.26E-09	MND	MND	0.00E+00	4.57E-13	0.00E+00	5.42E-11	-9.02E-11
NHWD	kg	5.14E-03	MND	MND	0.00E+00	1.90E-06	0.00E+00	2.04E-02	-7.35E-04
RWD	kg	3.76E-05	MND	MND	0.00E+00	1.56E-08	0.00E+00	2.38E-06	-6.83E-07
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX EXPERT 150 (150 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	4.57E-01	MND	MND	0.00E+00	1.26E-03	0.00E+00	3.75E-01	-1.98E-01
GWP-fossil	kg CO2 eq.	4.56E-01	MND	MND	0.00E+00	1.28E-03	0.00E+00	3.75E-01	-1.98E-01
GWP-biogenic	kg CO2 eq.	1.20E-03	MND	MND	0.00E+00	-2.08E-05	0.00E+00	2.11E-05	-9.18E-05
GWP-LULUC	kg CO2 eq.	3.48E-04	MND	MND	0.00E+00	5.40E-06	0.00E+00	1.39E-05	-1.93E-04
ODP	kg CFC-11 eq.	5.86E-10	MND	MND	0.00E+00	5.96E-16	0.00E+00	1.46E-13	-2.57E-12
AP	mol H+ eq.	8.60E-04	MND	MND	0.00E+00	2.29E-06	0.00E+00	4.98E-05	-3.34E-04
EP-freshwater	kg P eq.	5.11E-07	MND	MND	0.00E+00	3.20E-09	0.00E+00	7.47E-09	-1.92E-08
EP-marine	kg N eq.	2.09E-04	MND	MND	0.00E+00	9.59E-07	0.00E+00	1.38E-05	-8.90E-05
EP-terrestrial	mol N eq.	2.28E-03	MND	MND	0.00E+00	1.04E-05	0.00E+00	2.29E-04	-9.79E-04
POCP	kg NMVOC eq.	7.98E-04	MND	MND	0.00E+00	2.10E-06	0.00E+00	3.85E-05	-2.56E-04
ADPE (disc.2)	kg Sb eq.	1.37E-03	MND	MND	0.00E+00	9.14E-11	0.00E+00	1.14E-09	-1.51E-08
ADPF (disc.2)	MJ, (NCV)	1.27E+01	MND	MND	0.00E+00	1.65E-02	0.00E+00	1.63E-01	-3.11E+00
WDP (disc.2)	m3 World eq.	2.09E-02	MND	MND	0.00E+00	5.12E-06	0.00E+00	3.55E-02	-1.01E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	8.26E-09	MND	MND	0.00E+00	1.99E-11	0.00E+00	6.00E-10	-3.43E-09
IRP (disc.1)	kBq U235 eq.	7.25E-03	MND	MND	0.00E+00	3.38E-06	0.00E+00	5.20E-04	-1.16E-04
ETP-fw (disc.2)	CTUe	7.55E+00	MND	MND	0.00E+00	1.42E-02	0.00E+00	1.12E-01	-5.03E-01
HTP-c (disc.2)	CTUh	1.30E-10	MND	MND	0.00E+00	2.81E-13	0.00E+00	5.33E-12	-1.72E-11
HTP-nc (disc.2)	CTUh	2.63E-09	MND	MND	0.00E+00	1.46E-11	0.00E+00	4.38E-10	-3.49E-10
SQP (disc.2)	Dimensionless	3.70E-01	MND	MND	0.00E+00	4.42E-03	0.00E+00	3.39E-02	-7.16E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	9.96E-01	MND	MND	0.00E+00	1.17E-03	0.00E+00	4.36E-02	-3.42E-01
PERM	MJ, (NCV)	1.11E-03	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	9.97E-01	MND	MND	0.00E+00	1.17E-03	0.00E+00	4.36E-02	-3.42E-01
PENRE	MJ, (NCV)	1.26E+01	MND	MND	0.00E+00	1.65E-02	0.00E+00	3.65E+00	-3.11E+00
PENRM	MJ, (NCV)	3.49E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-3.49E+00	0.00E+00
PENRT	MJ, (NCV)	1.61E+01	MND	MND	0.00E+00	1.65E-02	0.00E+00	1.63E-01	-3.11E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.50E-03	MND	MND	0.00E+00	3.66E-07	0.00E+00	8.44E-04	-2.46E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.									

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.04E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	6.80E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.22E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	4.64E-09	MND	MND	0.00E+00	7.61E-13	0.00E+00	9.03E-11	-1.41E-10
NHWD	kg	5.64E-03	MND	MND	0.00E+00	3.17E-06	0.00E+00	3.40E-02	-1.15E-03
RWD	kg	5.76E-05	MND	MND	0.00E+00	2.59E-08	0.00E+00	3.96E-06	-1.07E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX-Q ULTIMA (200 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	5.64E-01	MND	MND	0.00E+00	1.69E-03	0.00E+00	4.99E-01	-2.64E-01
GWP-fossil	kg CO2 eq.	5.62E-01	MND	MND	0.00E+00	1.71E-03	0.00E+00	4.99E-01	-2.64E-01
GWP-biogenic	kg CO2 eq.	1.59E-03	MND	MND	0.00E+00	-2.78E-05	0.00E+00	2.81E-05	-1.22E-04
GWP-LULUC	kg CO2 eq.	4.24E-04	MND	MND	0.00E+00	7.19E-06	0.00E+00	1.85E-05	-2.57E-04
ODP	kg CFC-11 eq.	8.12E-10	MND	MND	0.00E+00	7.95E-16	0.00E+00	1.95E-13	-3.42E-12
AP	mol H+ eq.	1.04E-03	MND	MND	0.00E+00	3.05E-06	0.00E+00	6.63E-05	-4.46E-04
EP-freshwater	kg P eq.	5.38E-07	MND	MND	0.00E+00	4.27E-09	0.00E+00	9.96E-09	-2.56E-08
EP-marine	kg N eq.	2.55E-04	MND	MND	0.00E+00	1.28E-06	0.00E+00	1.84E-05	-1.19E-04
EP-terrestrial	mol N eq.	2.79E-03	MND	MND	0.00E+00	1.38E-05	0.00E+00	3.05E-04	-1.31E-03
POCP	kg NMVOC eq.	9.84E-04	MND	MND	0.00E+00	2.80E-06	0.00E+00	5.13E-05	-3.42E-04
ADPE (disc.2)	kg Sb eq.	1.90E-03	MND	MND	0.00E+00	1.22E-10	0.00E+00	1.52E-09	-2.01E-08
ADPF (disc.2)	MJ, (NCV)	1.57E+01	MND	MND	0.00E+00	2.20E-02	0.00E+00	2.18E-01	-4.14E+00
WDP (disc.2)	m3 World eq.	2.39E-02	MND	MND	0.00E+00	6.83E-06	0.00E+00	4.73E-02	-1.35E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
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ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	1.02E-08	MND	MND	0.00E+00	2.65E-11	0.00E+00	8.00E-10	-4.58E-09
IRP (disc.1)	kBq U235 eq.	7.78E-03	MND	MND	0.00E+00	4.51E-06	0.00E+00	6.93E-04	-1.54E-04
ETP-fw (disc.2)	CTUe	9.42E+00	MND	MND	0.00E+00	1.89E-02	0.00E+00	1.49E-01	-6.71E-01
HTP-c (disc.2)	CTUh	1.62E-10	MND	MND	0.00E+00	3.75E-13	0.00E+00	7.10E-12	-2.29E-11
HTP-nc (disc.2)	CTUh	3.24E-09	MND	MND	0.00E+00	1.94E-11	0.00E+00	5.85E-10	-4.65E-10
SQP (disc.2)	Dimensionless	4.36E-01	MND	MND	0.00E+00	5.89E-03	0.00E+00	4.52E-02	-9.54E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.19E+00	MND	MND	0.00E+00	1.56E-03	0.00E+00	5.81E-02	-4.55E-01
PERM	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	1.19E+00	MND	MND	0.00E+00	1.56E-03	0.00E+00	5.81E-02	-4.55E-01
PENRE	MJ, (NCV)	1.57E+01	MND	MND	0.00E+00	2.20E-02	0.00E+00	7.74E+00	-4.14E+00
PENRM	MJ, (NCV)	7.52E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-7.52E+00	0.00E+00
PENRT	MJ, (NCV)	2.32E+01	MND	MND	0.00E+00	2.20E-02	0.00E+00	2.18E-01	-4.14E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.81E-03	MND	MND	0.00E+00	4.88E-07	0.00E+00	1.13E-03	-3.28E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.06E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	9.07E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.62E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	3.62E-09	MND	MND	0.00E+00	1.02E-12	0.00E+00	1.20E-10	-1.87E-10
NHWD	kg	5.14E-03	MND	MND	0.00E+00	4.23E-06	0.00E+00	4.54E-02	-1.53E-03
RWD	kg	6.21E-05	MND	MND	0.00E+00	3.46E-08	0.00E+00	5.29E-06	-1.42E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX-Q VENTGRID (450 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1.30E+00	MND	MND	0.00E+00	3.79E-03	0.00E+00	1.12E+00	-5.95E-01
GWP-fossil	kg CO2 eq.	1.30E+00	MND	MND	0.00E+00	3.84E-03	0.00E+00	1.12E+00	-5.94E-01
GWP-biogenic	kg CO2 eq.	3.70E-03	MND	MND	0.00E+00	-6.25E-05	0.00E+00	6.33E-05	-2.75E-04
GWP-LULUC	kg CO2 eq.	9.73E-04	MND	MND	0.00E+00	1.62E-05	0.00E+00	4.17E-05	-5.78E-04
ODP	kg CFC-11 eq.	1.67E-09	MND	MND	0.00E+00	1.79E-15	0.00E+00	4.39E-13	-7.70E-12
AP	mol H+ eq.	2.39E-03	MND	MND	0.00E+00	6.86E-06	0.00E+00	1.49E-04	-1.00E-03
EP-freshwater	kg P eq.	1.23E-06	MND	MND	0.00E+00	9.60E-09	0.00E+00	2.24E-08	-5.76E-08
EP-marine	kg N eq.	5.88E-04	MND	MND	0.00E+00	2.88E-06	0.00E+00	4.14E-05	-2.67E-04
EP-terrestrial	mol N eq.	6.42E-03	MND	MND	0.00E+00	3.11E-05	0.00E+00	6.86E-04	-2.94E-03
POCP	kg NMVOC eq.	2.26E-03	MND	MND	0.00E+00	6.29E-06	0.00E+00	1.15E-04	-7.68E-04
ADPE (disc.2)	kg Sb eq.	3.88E-03	MND	MND	0.00E+00	2.74E-10	0.00E+00	3.43E-09	-4.52E-08
ADPF (disc.2)	MJ, (NCV)	3.63E+01	MND	MND	0.00E+00	4.94E-02	0.00E+00	4.90E-01	-9.32E+00
WDP (disc.2)	m3 World eq.	5.29E-02	MND	MND	0.00E+00	1.54E-05	0.00E+00	1.06E-01	-3.04E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2.34E-08	MND	MND	0.00E+00	5.96E-11	0.00E+00	1.80E-09	-1.03E-08
IRP (disc.1)	kBq U235 eq.	1.72E-02	MND	MND	0.00E+00	1.02E-05	0.00E+00	1.56E-03	-3.47E-04
ETP-fw (disc.2)	CTUe	2.18E+01	MND	MND	0.00E+00	4.25E-02	0.00E+00	3.36E-01	-1.51E+00
HTP-c (disc.2)	CTUh	3.74E-10	MND	MND	0.00E+00	8.43E-13	0.00E+00	1.60E-11	-5.16E-11
HTP-nc (disc.2)	CTUh	7.51E-09	MND	MND	0.00E+00	4.37E-11	0.00E+00	1.32E-09	-1.05E-09
SQP (disc.2)	Dimensionless	1.00E+00	MND	MND	0.00E+00	1.33E-02	0.00E+00	1.02E-01	-2.15E-01
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	2.74E+00	MND	MND	0.00E+00	3.52E-03	0.00E+00	1.31E-01	-1.02E+00
PERM	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	2.74E+00	MND	MND	0.00E+00	3.52E-03	0.00E+00	1.31E-01	-1.02E+00
PENRE	MJ, (NCV)	3.62E+01	MND	MND	0.00E+00	4.94E-02	0.00E+00	1.82E+01	-9.32E+00
PENRM	MJ, (NCV)	1.77E+01	MND	MND	0.00E+00	0.00E+00	0.00E+00	-1.77E+01	0.00E+00
PENRT	MJ, (NCV)	5.40E+01	MND	MND	0.00E+00	4.94E-02	0.00E+00	4.90E-01	-9.32E+00
SM	kg	1.24E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	4.15E-03	MND	MND	0.00E+00	1.10E-06	0.00E+00	2.53E-03	-7.39E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.12E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	2.04E+00	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	3.65E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	9.60E-09	MND	MND	0.00E+00	2.28E-12	0.00E+00	2.71E-10	-4.22E-10
NHWD	kg	1.15E-02	MND	MND	0.00E+00	9.52E-06	0.00E+00	1.02E-01	-3.44E-03
RWD	kg	1.39E-04	MND	MND	0.00E+00	7.78E-08	0.00E+00	1.19E-05	-3.20E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX PI (110 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	3.51E-01	MND	MND	0.00E+00	9.27E-04	0.00E+00	2.75E-01	-1.45E-01
GWP-fossil	kg CO2 eq.	3.49E-01	MND	MND	0.00E+00	9.38E-04	0.00E+00	2.75E-01	-1.45E-01
GWP-biogenic	kg CO2 eq.	1.34E-03	MND	MND	0.00E+00	-1.53E-05	0.00E+00	1.55E-05	-6.73E-05
GWP-LULUC	kg CO2 eq.	2.83E-04	MND	MND	0.00E+00	3.96E-06	0.00E+00	1.02E-05	-1.41E-04
ODP	kg CFC-11 eq.	4.43E-12	MND	MND	0.00E+00	4.37E-16	0.00E+00	1.07E-13	-1.88E-12
AP	mol H+ eq.	7.30E-04	MND	MND	0.00E+00	1.68E-06	0.00E+00	3.65E-05	-2.45E-04
EP-freshwater	kg P eq.	3.54E-07	MND	MND	0.00E+00	2.35E-09	0.00E+00	5.48E-09	-1.41E-08
EP-marine	kg N eq.	2.00E-04	MND	MND	0.00E+00	7.03E-07	0.00E+00	1.01E-05	-6.53E-05
EP-terrestrial	mol N eq.	2.19E-03	MND	MND	0.00E+00	7.60E-06	0.00E+00	1.68E-04	-7.18E-04
POCP	kg NMVOC eq.	7.31E-04	MND	MND	0.00E+00	1.54E-06	0.00E+00	2.82E-05	-1.88E-04
ADPE (disc.2)	kg Sb eq.	4.41E-08	MND	MND	0.00E+00	6.70E-11	0.00E+00	8.37E-10	-1.11E-08
ADPF (disc.2)	MJ, (NCV)	1.03E+01	MND	MND	0.00E+00	1.21E-02	0.00E+00	1.20E-01	-2.28E+00
WDP (disc.2)	m3 World eq.	3.32E-02	MND	MND	0.00E+00	3.76E-06	0.00E+00	2.60E-02	-7.43E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	7.95E-09	MND	MND	0.00E+00	1.46E-11	0.00E+00	4.40E-10	-2.52E-09
IRP (disc.1)	kBq U235 eq.	1.30E-02	MND	MND	0.00E+00	2.48E-06	0.00E+00	3.81E-04	-8.49E-05
ETP-fw (disc.2)	CTUe	6.26E+00	MND	MND	0.00E+00	1.04E-02	0.00E+00	8.21E-02	-3.69E-01
HTP-c (disc.2)	CTUh	1.14E-10	MND	MND	0.00E+00	2.06E-13	0.00E+00	3.91E-12	-1.26E-11
HTP-nc (disc.2)	CTUh	2.33E-09	MND	MND	0.00E+00	1.07E-11	0.00E+00	3.21E-10	-2.56E-10
SQP (disc.2)	Dimensionless	4.57E-01	MND	MND	0.00E+00	3.24E-03	0.00E+00	2.48E-02	-5.25E-02
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	9.84E-01	MND	MND	0.00E+00	8.60E-04	0.00E+00	3.20E-02	-2.50E-01
PERM	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	9.84E-01	MND	MND	0.00E+00	8.60E-04	0.00E+00	3.20E-02	-2.50E-01
PENRE	MJ, (NCV)	1.03E+01	MND	MND	0.00E+00	1.21E-02	0.00E+00	3.17E+00	-2.28E+00
PENRM	MJ, (NCV)	3.05E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-3.05E+00	0.00E+00
PENRT	MJ, (NCV)	1.33E+01	MND	MND	0.00E+00	1.21E-02	0.00E+00	1.20E-01	-2.28E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.42E-03	MND	MND	0.00E+00	2.69E-07	0.00E+00	6.19E-04	-1.81E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.									

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.31E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	4.99E-01	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	8.93E-01	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	3.95E-09	MND	MND	0.00E+00	5.58E-13	0.00E+00	6.62E-11	-1.03E-10
NHWD	kg	4.89E-03	MND	MND	0.00E+00	2.33E-06	0.00E+00	2.49E-02	-8.40E-04
RWD	kg	9.28E-05	MND	MND	0.00E+00	1.90E-08	0.00E+00	2.91E-06	-7.81E-07
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

ENVIRONMENTAL IMPACT DATA – STROTEX -Q ADVANCED PLUS (260 g/m²)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1.53E+00	MND	MND	0.00E+00	2.19E-03	0.00E+00	6.49E-01	-3.44E-01
GWP-fossil	kg CO2 eq.	1.51E+00	MND	MND	0.00E+00	2.22E-03	0.00E+00	6.49E-01	-3.43E-01
GWP-biogenic	kg CO2 eq.	1.39E-02	MND	MND	0.00E+00	-3.61E-05	0.00E+00	3.66E-05	-1.59E-04
GWP-LULUC	kg CO2 eq.	2.45E-03	MND	MND	0.00E+00	9.35E-06	0.00E+00	2.41E-05	-3.34E-04
ODP	kg CFC-11 eq.	5.47E-09	MND	MND	0.00E+00	1.03E-15	0.00E+00	2.54E-13	-4.45E-12
AP	mol H+ eq.	7.17E-03	MND	MND	0.00E+00	3.96E-06	0.00E+00	8.62E-05	-5.80E-04
EP-freshwater	kg P eq.	1.95E-04	MND	MND	0.00E+00	5.55E-09	0.00E+00	1.30E-08	-3.33E-08
EP-marine	kg N eq.	1.49E-03	MND	MND	0.00E+00	1.66E-06	0.00E+00	2.39E-05	-1.54E-04
EP-terrestrial	mol N eq.	1.55E-02	MND	MND	0.00E+00	1.80E-05	0.00E+00	3.96E-04	-1.70E-03
POCP	kg NMVOC eq.	4.66E-03	MND	MND	0.00E+00	3.64E-06	0.00E+00	6.66E-05	-4.44E-04
ADPE (disc.2)	kg Sb eq.	7.04E-04	MND	MND	0.00E+00	1.58E-10	0.00E+00	1.98E-09	-2.61E-08
ADPF (disc.2)	MJ, (NCV)	2.29E+01	MND	MND	0.00E+00	2.86E-02	0.00E+00	2.83E-01	-5.38E+00
WDP (disc.2)	m3 World eq.	2.72E-01	MND	MND	0.00E+00	8.88E-06	0.00E+00	6.15E-02	-1.76E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.								
Disclaimer 2	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 experience with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2.43E-08	MND	MND	0.00E+00	3.45E-11	0.00E+00	1.04E-09	-5.95E-09
IRP (disc.1)	kBq U235 eq.	4.67E-03	MND	MND	0.00E+00	5.86E-06	0.00E+00	9.01E-04	-2.01E-04
ETP-fw (disc.2)	CTUe	5.69E+00	MND	MND	0.00E+00	2.46E-02	0.00E+00	1.94E-01	-8.72E-01
HTP-c (disc.2)	CTUh	9.71E-11	MND	MND	0.00E+00	4.87E-13	0.00E+00	9.23E-12	-2.98E-11
HTP-nc (disc.2)	CTUh	2.24E-09	MND	MND	0.00E+00	2.53E-11	0.00E+00	7.60E-10	-6.04E-10
SQP (disc.2)	Dimensionless	1.91E+00	MND	MND	0.00E+00	7.66E-03	0.00E+00	5.87E-02	-1.24E-01
Acronyms	PM – Particulate matter emissions (potential incidence of disease);IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.								
Disclaimer 1	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.								
Disclaimer 2	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 experience with the indicator.								

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1.88E+00	MND	MND	0.00E+00	2.03E-03	0.00E+00	7.56E-02	-5.92E-01
PERM	MJ, (NCV)	1.70E-01	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, (NCV)	2.05E+00	MND	MND	0.00E+00	2.03E-03	0.00E+00	7.56E-02	-5.92E-01
PENRE	MJ, (NCV)	2.26E+01	MND	MND	0.00E+00	2.86E-02	0.00E+00	8.11E+00	-5.38E+00
PENRM	MJ, (NCV)	7.82E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	-7.82E+00	0.00E+00
PENRT	MJ, (NCV)	3.04E+01	MND	MND	0.00E+00	2.86E-02	0.00E+00	2.83E-01	-5.38E+00
SM	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, (NCV)	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	7.68E-03	MND	MND	0.00E+00	6.35E-07	0.00E+00	1.46E-03	-4.27E-04
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.								

OUTPUT FLOWS

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.00E-02	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.18E+00	0.00E+00
EET	MJ	0.00E+00	MND	MND	0.00E+00	0.00E+00	0.00E+00	2.11E+00	0.00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.								

WASTE

Impact category	Unit	A1-A3	A4-A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	9.49E-04	MND	MND	0.00E+00	1.32E-12	0.00E+00	1.57E-10	-2.44E-10
NHWD	kg	8.98E-02	MND	MND	0.00E+00	5.50E-06	0.00E+00	5.90E-02	-1.99E-03
RWD	kg	4.61E-05	MND	MND	0.00E+00	4.50E-08	0.00E+00	6.87E-06	-1.85E-06
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.								

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Source and quality of electricity data	Electricity consumption in Module A3 is modelled using the Polish national grid (ecoinvent 3.9.1, Cutoff, PL) with the default GWP factor replaced by 0.599 kg CO_2e/kWh (poLCA-EN-PL-2024, KOBiZE 2024), extended to include upstream fuel supply chain and fugitive methane contributions.
Electricity CO_2 / kWh	0.599 kg CO_2e / kWh
Source and quality of background data	LCA for Experts Software System and Database for Life Cycle Engineering, version 10.9.5.2 and
Geographic scope of background data	Poland / European market mix, as applicable per material

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EPD VERIFICATION:

The verification procedure of this Environmental Product Declaration (EPD) was carried out in accordance with ISO 14025. The EPD is valid for five years from the date of publication and may be updated earlier in case of significant changes. Renewal of validity requires review and, if necessary, updating.

EPD CONTRIBUTORS

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EPD verifier	Daniel Wałach, Ph.D.

Note: The sole ownership, liability, and liability of this declaration are with the owner. Construction product declarations may not be comparable if they do not comply with EN 15804. For detailed information on comparability, please refer to EN 15804 and ISO 14025.

EPD POLSKA CERTIFICATE

Program EPD Polska
Operator: MULTICERT Sp. z o.o.

FOLIAREX

CERTIFICATE

TYPE III EPD DECLARATION

(ENVIRONMENTAL PRODUCT DECLARATION)

Reg. No. EPD-P 01.05.2026

EPD Environmental Product Declaration
EPD VERIFIED
EPD POLAND

This document confirms that the Environmental Product Declaration developed by **„Foliarex" Sp. z o.o.** for

Roofing Membranes, Vapour Barriers and Construction Foils

manufactured in accordance with **EN 13859-1**, **EN 13859-2** and **EN 13984** standards meets the requirements of standards **EN 15804:2012+A2:2019** and **ISO 14025**, and that the data contained therein has been prepared correctly.

The Declaration was published on May 18, 2026 and is valid until May 18, 2031, or until it is deregistered or its publication on the website www.epd.org.pl is discontinued.

Authenticity of this certificate can be confirmed in.
the public register at www.epd.org.pl

Daniel Wałach, Ph.D.
EPD Polska Verifier

MULTICERT JEDNOSTKA CERTYFIKUJĄCA

Grzegorz Suwara
CEO Multicert Sp. z o.o.

Warsaw, May 18, 2026