HARPUN

EPD

Environmental product declaration for plastic elements by Harpun A/S

Owner:	Harpun A/S
Valid from:	20-11-2023
Valid until:	20-11-2028

Environmental product declaration in conformity with **ISO 14025** and **EN 15804**

General information	
Owner of EPD	Harpun A/S Vestermarksvej 5 6630 Rødding, Denmark VAT no. 12483503
Type of EPD	☐ Industry EPD ☒ Product EPD
Scope	Cradle-to-gate with options (module A1-A5, C1-C4, and D)
Publication date	2023-11-20 (see Harpun's website)
Valid until date	2028-11-20
EPD version	Version 1
Validity	This EPD was verified in accordance with ISO 14025 and has a validity of 5 years from the publication date. Note that this EPD was conducted and based on the general guidelines from EPD Denmark (excl. layout and use of logos).
Standard compliance	The development of this EPD conforms to the European standard DS/EN 15804:2012+A2:2019
Product category rules	This EPD was based on the core PCR rules in the European Standard DS/EN 15804:2012+A2:2019
Comparability	EPDs for construction products may not be comparable if their development does not meet the requirements in DS/EN 15804:2012+A2:2019. Furthermore, to ensure comparability the datasets used in the EPD should be aligned with DS/EN 15804:2012+A2:2019, the background system should be based on the same databases and model choices.
Intended use	The intended use of this EPD is to present scientifically sound environmental data for the declared construction products to professionals in the construction sector with the aim of evaluating the environmental performance of buildings.
EPD developer	Better Green ApS Virumvej 64 2830 Virum, Denmark
Verification type	☐ Internal verifier ☒ External verifier
Verifier	Linda Høibye (Life Cycle Assessment Consulting) Forupsvej 4, 7120 Vejle Øst, Denmark
Verifier statement	Independent verification of the declaration and data, according to EN ISO 14025:  Linda Høibye

Life cycle assessment information	
Products covered	**Number of declared datasets: 44** The declared datasets represent the following 10 product categories of plastic elements by Harpun A/S: Wedges, Wall brackets, Flooring wedge system, Sound reducers, Adjustment panels, QuickFix/QuickFix mini, Glass panels, Concrete accessories, Mix boxes/bags and Terrace concept. A total number of 179 individual products are covered by the 44 declared datasets.
Year of production data	2022
Production sites	Two production sites are covered by this EPD: Rødding site: Vestermarksvej 5 6630 Rødding, Denmark Slangerup site: Lindholmvej 15 3550 Slangerup, Denmark
Guarantees of Origin	No guarantees of origin for renewable electricity or biogas are used in A3.
Scope	Cradle-to-gate with options (module A1-A5, C1-C4, and D)
Functional unit	No functional unit because module B (use stage) is not declared.
Declared unit	1 kg of plastic element

Table 1 System boundary according to EN 15804:2012+A2:2019.

System boundary (X = included in LCA; MND = module not declared)																
A					B							C				D
Product			Con-struction		Use							End of life				Outside scope
Raw materials	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy	Operational water	De-construction	Waste transport	Waste processing	Disposal	Reuse- recovery- recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Product information

Product description

This EPD describes the environmental impacts for Harpun plastic elements. To cover 179 individual products and 10 product groups, 44 datasets are declared. The 44 datasets are average values of the individual products they cover. It has been ensured that there is less than +/- 10% deviation of the individual products from the average for all core indicators across all declared modules.

The product categories covered in this EPD are:

- Wedges (8 products)
- Wall brackets (4 products)
- Flooring wedge system (9 products)
- Sound reducers (8 products)
- Adjustment panels (44 products)
- QuickFix/QuickFix mini (12 products)
- Glass panels (56 products)
- Concrete accessories (4 products)
- Mix boxes/bags (33 products)
- Terrace concept (1 products)

The average declared products are presented in Table 2 along with the product category and individual products covered by each group. The table also contains information about the weight per individual product, which can be used to convert the impacts of the declared unit (1 kg product) to the impacts per product

The declared products are manufactured at two production sites in Denmark: Slangerup and Rødding. Data from both production sites have been used for this EPD covering the production in 2022. The declared products represent a weighted average of the two production sites, where the weighting is based on the production volumes in kg in 2022 for each site.

The average composition of each declared product can be seen in Table 3.

Table 2 Overview of declared products, the average group no. the product is declared within and the weight per piece (kg).

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
1	Concrete accessories	Betonkile White 52 pcs/box	0.330
		Betonkile Grå 52 pcs/box	0.330
2		Tentor cap 6-16 mm Rød 800 pcs/box	0.009
		Tentor cap 16-32 mm Rød 250 pcs/box	0.020
3	Glass panels	Glasklods 50x22x1 mm Blå 1.000 pcs/box	0.001
		Glaskods 50x26x1 mm Blå 1.000 pcs/box	0.001
		Glasklods 50x30x3 mm -7° Grå 1.000 pcs/box	0.001
		Glasklods 50x22x3 mm -7° Grå 1.000 pcs/box	0.001
		Glasklods 50x15x2 mm Hvid 1.000 pcs/box	0.002
		Glasklods 50x27x1 mm Blå 1.000 pcs/box	0.002
		Glasklods 50x20x2 mm Hvid 1.000 pcs/box	0.002
		Glasklods 50x15x3 mm Grå 1.000 pcs/box	0.002
		Glasklods 50x22x2 mm Hvid 1.000 pcs/box	0.002
		Glasklods 50x24x2 mm Hvid 1.000 pcs/box	0.002
		Glasklods 50x26x2 mm Hvid 1.000 pcs/box	0.003
		Glasklods 50x27x2 mm Hvid 1.000 pcs/box	0.003
		Glasklods 50x20x3 mm Grå 1.000 pcs/box	0.003
		Glasklods 100x22x1 mm Blå 1.000 pcs/box	0.003
		Glasklods 50x15x4 mm Sort 1.000 pcs/box	0.003
		Glasklods 50x30x3 mm Grå 1.000 pcs/box	0.003
		Glasklods 50x22x3 mm Grå 1.000 pcs/box	0.003
		Glasklods 50x30x2 mm Hvid 1.000 pcs/box	0.003
		Glasklods 100x27x4 mm Sort 1.000 pcs/box	0.009
		Glasklods 50x24x3 mm Grå 1.000 pcs/box	0.003
		Glasklods 50x27x5 mm Brun 1.000 pcs/box	0.006
		Glasklods 50x24x1 mm -7° Blå 1.000 pcs/box	0.004
		Glasklods 100x23x4 mm -7° Sort 1.000 pcs/box	0.012
		Glasklods 50x24x4 mm -7° Sort 1.000 pcs/box	0.006
		Glasklods 50x36x2 mm Hvid 1.000 pcs/box	0.004
		Glasklods 50x26x3 mm Grå 1.000 pcs/box	0.004

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
3	Glass panels	Glasklods 50x22x5 mm Brun 1.000 pcs/box	0.005
		Glasklods 100x30x1 mm Blå 1.000 pcs/box	0.004
		Glasklods 100x22x2 mm Hvid 1.000 pcs/box	0.004
		Glasklods 50x20x4 mm Sort 1.000 pcs/box	0.004
		Glasklods 50x22x4 mm Sort 1.000 pcs/box	0.004
		Glasklods 50x24x4 mm Sort 1.000 pcs/box	0.004
		Glasklods 50x23x4 mm -7° Sort 1.000 pcs/box	0.008
		Glasklods 50x30x5 mm Brun 1.000 pcs/box	0.008
		Glasklods 100x24x2 mm Hvid 1.000 pcs/box	0.005
		Glasklods 50x26x4 mm Sort 1.000 pcs/box	0.005
		Glasklods 50x27x4 mm Sort 1.000 pcs/box	0.005
		Glasklods 100x27x2 mm Hvid 1.000 pcs/box	0.005
		Glasklods 50x30x4 mm Sort 1.000 pcs/box	0.006
		Glasklods 100x22x3 mm Grå 1.000 pcs/box	0.006
		Glasklods 100x30x5 mm Brun 1.000 pcs/box	0.016
		Glasklods 50x27x3 mm Grå 1.000 pcs/box	0.006
		Glasklods 100x30x2 mm Hvid 1.000 pcs/box	0.007
		Glasklods 50x27x4 mm -7° Sort 1.000 pcs/box	0.007
		Glasklods 100x24x3 mm Grå 1.000 pcs/box	0.007
		Glasklods 100x25x1 mm -7° Rød 1.000 pcs/box	0.007
		Glasklods 100x27x3 mm Grå 1.000 pcs/box	0.008
		Glasklods 100x22x4 mm Sort 1.000 pcs/box	0.008
		Glasklods 100x24x4 mm Sort 1.000 pcs/box	0.009
		Glasklods 100x30x3 mm Grå 1.000 pcs/box	0.009
		Glasklods 50x35x5 mm Brun 1.000 pcs/box	0.009
		Glasklods 50x36x4 mm -7° Sort 1.000 pcs/box	0.010
		Glasklods 100x22x5 mm Brun 1.000 pcs/box	0.010
		Glasklods 100x30x4 mm Sort 1.000 pcs/box	0.013
		Glasklods 100x27x4 mm -7° Sort 1.000 pcs/box	0.013
		Glasklods 50x30x4 mm -7° Sort 1.000 pcs/box	0.007

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
4	Flooring wedge system	Skrå Fodplade 5% 110x110x3 mm Sort 90 pcs/box	0.027
		Skrå Fodplade 2,5% 110x110x3 mm Sort 100 pcs/box	0.027
5		Gulvopklodsning Bundkile 100x43x110 mm Brun 36 pcs/box	0.143
		Gulvopklodsning Bundkile 100x43x70 mm Grøn 72 pcs/box	0.071
		Gulvopklodsning Topkile 110x43x45 Grøn 150 pcs/box	0.033
		Gulvopklodsning Bundkile 100x43x90 mm Grå 45 pcs/box	0.113
		Gulvopklodsning Bundkile 100x43x50 mm Sort 108 pcs/box	0.051
		Gulvopklodsning Topkile 110x43x85 mm Brun 99 pcs/box	0.090
6		Gulvopklodsning Topkile 60x43x30 mm Sort 400 pcs/box	0.015
7	Adjustment panels	Justerbrik 80x50x2 mm Red Heavy Load 500 pcs/box	0.006
		Justerbrik 80x50x3 mm Green Heavy Load 500 pcs/box	0.006
		Justerbrik 80x50x5 mm Blå Heavy Load 500 pcs/box	0.011
		Justerbrik 80x50x10 mm Black Heavy Load 450 pcs/box	0.023
		Justerbrik 80x50x7 mm Brun Heavy Load 500 pcs/box	0.018
		Justerbrik 80x50x15 mm Yellow Heavy Load 250 pcs/box	0.037
		Justerbrik 80x50x20 mm GREY Heavy Load 250 pcs/box	0.049
8		Justerbrik 120x50x2 mm Red Medium Load 250 pcs/box	0.006
		Justerbrik 160x50x2 mm Red Heavy Load 250 pcs/box	0.009
		Justerbrik 120x50x10 mm Black Medium Load 100 pcs/box	0.031
		Justerbrik 80x50x2 mm Red Medium Load 500 pcs/box	0.005
		Justerbrik 120x50x3 mm Green Medium Load 250 psc/box	0.010
		Justerbrik Reglar 45 80x45x2 mm Rød 500 pcs/box	0.005
		Justerbrik 160x50x3 mm Green Heavy Load 250 pcs/box	0.013
		Justerbrik 120x50x15 mm Yellow Medium Load 100 pcs/box	0.044
		Justerbrik 160x50x15 mm Yellow Heavy Load 100 pcs/box	0.059
		Justerbrik 160x50x5 mm Blue Heavy Load 250 pcs/box	0.021
		Justerbrik 80x50x15 mm Yellow Medium Load 250 pcs/box	0.029
		Justerbrik 80x50x5 mm Blå Medium Load 500 pcs/box	0.011
		Justerbrik Reglar 45 80x45x3 mm Grøn 500 pcs/box	0.006
		Justerbrik 80x50x3 mm Green Medium Load 500 pcs/box	0.006

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
8	Adjustment panels	Justerbrik 100 Solid 100x100x20 mm Grå 50 pcs/box	0.170
		Justerbrik 120x50x5 mm Blue Medium Load 250 pcs/box	0.016
		Justerbrik 100 Grid 100x100x2 mm Rød 500 pcs/box	0.009
		Justerbrik 80x50x7 mm Brun Medium Load 500 pcs/box	0.014
		Justerbrik Reglar 45 80x45x5 mm Blå 500 pcs/box	0.011
		Justerbrik 80x50x30 mm MørkeGrå Medium Load 200 pcs/box	0.055
		Justerbrik 100 Grid 100x100x3 mm Grøn 450 pcs/box	0.014
		Justerbrik 80x50x50 mm Rosa Medium Load 100 pcs/box	0.141
		Justerbrik 80x50x20 mm Grey Medium Load 250 pcs/box	0.037
		Justerbrik Reglar 45 80x45x20 mm Grey 250 pcs/box	0.037
		Justerbrik 100 Solid 100x100x2 mm Rød 400 pcs/box	0.014
		Justerbrik 100 Solid 100x100x3 mm Grøn 300 pcs/box	0.023
		Justerbrik 80x50x30 mm MørkeGrå Heavy Load 180 pcs/box	0.055
		Justerbrik 100 Solid 100x100x5 mm Blå 200 pcs/box	0.038
		Justerbrik 100 Grid 100x100x5 mm Blå 500 pcs/box	0.023
		Justerbrik 100 Solid 100x100x15 mm Gul 75 pcs/box	0.120
9		Justerbrik 160x50x10 mm Black Heavy Load 100 pcs/box	0.038
		Justerbrik 80x30x20 mm Black Medium Load 200 pcs/box	0.025
		Justerbrik Reglar 45 80x45x10 mm Sort 500 pcs/box	0.019
		Justerbrik 100 Solid 100x100x10 mm Sort 100 pcs/box	0.082
		Justerbrik 80x28x12 mm Sort 300 pcs/box	0.016
		Justerbrik 80x50x10 mm Black Medium Load 500 pcs/box	0.019
		Justerbrik 100 Grid 100x100x10 mm Sort 300 pcs/box	0.041
10	Wedges	Møbel Kile 100x20x8 mm Brun 500 pcs/box	0.007
11		Kile 65x28x8 mm Rød 1.000 pcs/box	0.004
		Split Kile 88x43x15 mm Grå 500 pcs/box	0.009
		Split Kile 70x35x10 mm Gul 1.000 pcs/box	0.005
		Split Kile 77x38x10 mm Hvid 1.000 pcs/box	0.006
12		Kile 88x43x15 mm Grå 550 pcs/box	0.011
13		Split Kile 140x43x25 mm Sort 364 pcs/box	0.022

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
14	Wedges	Kile 140x43x25 mm Sort 364 pcs/box	0.023
15	Sound reducers	Gulvbrik 81x47x5 mm Sort 250 pcs/box	0.020
16		Gulvopklodsning Fodplade 110x110x3 mm Sort 150 pcs/box	0.027
17		Lyddæmper 110x110x13 mm 110 pcs/box	0.121
18		Gummibrik 110x110x10 mm 120 pcs/box	0.094
19		Sportsbrik 50x40x12 Blå 200 pcs/box	0.017
		Lydbrik 50x40x8 mm Rød 300 pcs/box	0.017
20		Gulvopklodsning Bundklik 100x100x38 mm Sort 78 pcs/box	0.062
21		Gulvopklodsning Bundklik 100x100x19 mm Rød 150 pcs/box	0.030
22	Mix boxes and bags	GDS Pose Møbelkiler 8 mm 10 pcs/bag 16 bags/box	0.007
23		Pro Box BrickMix L 90 pcs/box	0.017
24		Pro Box Mini QuickFix 450 pcs/box	0.004
		Pro Box QuickFix 250 pcs/box	0.008
25		Pro Box BrickMix XL 80 pcs/box	0.027
26		Handy box Brick mix 50 pcs/box	0.013
27		Pro Box TriaMix 240 pcs/box	0.009
28		Pro Box BrickMix 100 Grid 100x100 mm 85 pcs/box	0.025
		Pro Box DuoTriaMix 100 pcs/box	0.021
		Pro Box BrickMix Reglar 45 160 pcs/box	0.014
		Pro Box BrickMix M 140 pcs/box	0.016
29		GDS Pose Rød Kile 8 mm 16 pcs/bag 16 bags/box	0.004
		GDS Pose TriaMix 12 pcs/bag 16 bags/box	0.005
		GDS Pose QuickFix 12 pcs/bag 16 bags/box	0.007
		GDS Pose QuickFix 22 pcs/bag 16 bags/box	0.003
		Handy box Quick Fix 80 pcs/box	0.007
		Handy box Mini Quick Fix 160 pcs/box	0.004
30		Pro Box SpacerMix 500 pcs/box	0.005
31		Easy Box Split Wedges White 150 pcs/box	0.006
32		Pro Box BrickMix 100 Solid 100x100 mm 51 pcs/box	0.057
33		GDS Pose Grå Kile 15 mm 10 pcs/bag 16 bags/box	0.011

Average product no	Product category	Products covered by declared average product	Weight per piece (kg)
33	Mix boxes and bags	GDS Pose Topkile Grøn 4 pcs/bag 16 bags/box	0.033
		Easy Box Wedges Grey 100 pcs/box	0.011
34		GDS Pose Justerbrikker 6 pcs/bag 16 bags/box	0.012
		GDS Pose DuoTriaMix 6 pcs/bag 16 bags/box	0.013
35		Handy box TriaMix 70 pcs/box	0.009
36		GDS Pose Hvid Kile 10 mm 16 pcs/bag 16 bags/box	0.006
37		GDS Pose Sort Kile 25 mm 6 pcs/bag 16 bags/box	0.023
38		GDS Pose Glasklods 55 pcs/bag 16 bags/box	0.004
		Handy box Spacer mix 200 pcs/box	0.006
39		Easy Box Wedges Black 50 pcs/box	0.023
40		Easy Box Tentor cap 16/32 mm Rød 54 pcs/box	0.023
		Easy Box Tentor cap 6/16 mm Rød 180 pcs/box	0.009
41	Wall brackets	Murbeslag 28 Indmuring 86 pcs/box	0.067
		Murbeslag 28 Eftermontering 140 pcs/box	0.052
42		Murbeslag 50 Indmuring 60 pcs/box	0.082
		Murbeslag 50 Eftermontering 90 pcs/box	0.067
43	QuickFix	Mini QuickFix 50x38x1 mm Blå 500 pcs/box	0.002
		Mini QuickFix 50x38x3 mm Rød 500 pcs/box	0.003
		Mini QuickFix 50x38x4 mm Sort 500 pcs/box	0.003
		Mini QuickFix 50x38x10 mm Gul 250 pcs/box	0.008
		Mini QuickFix 50x38x5 mm Grøn 500 pcs/box	0.004
		Mini QuickFix 50x38x2 mm Hvid 500 pcs/box	0.005
		QuickFix 80x50x1 mm Blå 1.000 pcs/box	0.003
		QuickFix 80x50x2 mm Hvid 1.000 pcs/box	0.005
		QuickFix 80x50x10 mm Gul 500 pcs/box	0.011
		QuickFix 80x50x3 mm Rød 1.000 pcs/box	0.006
		QuickFix 80x50x5 mm Grøn 1.000 pcs/box	0.007
		QuickFix 80x50x4 mm Sort 1.000 pcs/box	0.007
44	Terrace concept	Terrasse concept 60 pcs/box	0.094

Table 3 Average material composition (weight %) for each average declared product.

Average product no.	P Rubber	R HDPE B Black	R HDPE B Nature	R LDPE B Nature	R LDPE B Black	P PP	P PPG	p PS	R TPE	P MB	P UV	r BA
1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.93%	0.00%	0.00%	0.03%	0.03%	0.00%
2	0.00%	0.00%	0.00%	97.52%	0.00%	0.00%	0.00%	0.00%	0.00%	2.48%	0.00%	0.00%
3	0.00%	0.00%	0.00%	97.88%	0.00%	0.00%	0.00%	0.00%	0.00%	1.94%	0.05%	0.12%
4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	98.03%	0.00%	0.98%	0.99%	0.00%
5	0.00%	0.00%	29.20%	66.82%	0.00%	0.00%	0.00%	0.00%	0.00%	1.97%	2.01%	0.00%
6	0.00%	97.96%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.04%	0.00%
7	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	98.03%	0.00%	0.00%	1.67%	0.15%	0.14%
8	0.00%	0.00%	95.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.78%	1.55%	0.69%
9	0.00%	97.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.71%	0.82%
10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.01%	0.00%	0.99%	0.00%	0.00%
11	0.00%	0.00%	97.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.31%	1.24%	0.00%
12	0.00%	0.00%	29.71%	66.88%	0.00%	0.00%	0.00%	0.00%	0.00%	1.45%	1.96%	0.00%
13	0.00%	98.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.02%	0.00%
14	0.00%	67.61%	0.00%	0.00%	30.37%	0.00%	0.00%	0.00%	0.00%	2.00%	0.00%	0.00%
15	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	97.02%	0.00%	1.98%	1.00%	0.00%
16	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	97.96%	0.45%	0.23%	0.00%
17	77.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.99%	0.00%	2.04%	0.00%	0.00%
18	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19	0.00%	0.00%	45.96%	0.00%	0.00%	0.00%	0.00%	0.00%	51.39%	1.73%	0.92%	0.00%
20	0.00%	0.00%	65.31%	31.73%	0.00%	0.00%	0.00%	0.00%	0.00%	1.96%	0.99%	0.00%
21	0.00%	0.00%	31.05%	64.96%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	2.07%	0.00%
22	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.01%	0.00%	0.99%	0.00%	0.00%
23	0.00%	0.00%	61.05%	0.00%	0.00%	35.56%	0.91%	0.00%	0.00%	1.10%	0.99%	0.39%
24	0.00%	0.00%	70.43%	0.00%	0.00%	27.50%	0.70%	0.00%	0.00%	1.37%	0.00%	0.00%
25	0.00%	66.58%	0.00%	0.00%	0.00%	25.68%	0.66%	0.00%	0.00%	0.74%	4.13%	2.21%
26	0.00%	0.00%	86.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.77%	1.20%	0.00%
27	0.00%	60.05%	0.00%	10.98%	0.00%	26.32%	0.67%	0.00%	0.00%	0.77%	1.16%	0.26%
28	0.00%	71.90%	0.00%	0.00%	0.00%	25.26%	0.65%	0.00%	0.00%	1.14%	6.82%	5.36%
29	0.00%	0.00%	98.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.58%	0.00%	0.10%
30	0.00%	0.00%	0.00%	77.38%	0.00%	20.42%	0.52%	0.00%	0.00%	0.95%	1.02%	0.41%
31	0.00%	0.00%	99.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	0.45%	0.00%
32	0.00%	78.35%	0.00%	0.00%	0.00%	18.79%	0.48%	0.00%	0.00%	1.30%	1.97%	0.00%
33	0.00%	0.00%	29.55%	67.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.76%	3.78%	0.00%
34	0.00%	95.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	1.73%	0.68%
35	0.00%	53.10%	0.00%	44.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.02%	0.00%
36	0.00%	0.00%	0.00%	98.80%	0.00%	0.00%	0.00%	0.00%	0.00%	1.68%	0.06%	0.00%
37	0.00%	30.37%	0.00%	67.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38	0.00%	0.00%	0.00%	97.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%
39	0.00%	31.00%	0.00%	69.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.99%	0.00%	0.00%
40	0.00%	0.00%	0.00%	99.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
41	0.00%	0.00%	99.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	0.00%	0.00%
42	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.65%	1.73%	0.00%
43	0.00%	0.00%	98.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	0.00%	0.00%
44	0.00%	31.52%	0.00%	36.79%	0.00%	0.00%	0.00%	28.30%	0.00%	1.65%	1.73%	0.00%

Abbreviations: HDPE B Black: High Density Polyethylene, Grade B, black. HDPE B Nature: High Density Polyethylene, Grade B, clear in color. LDPE B Nature: Low Density Polyethylene, Grade B, clear in color. LDPE B Black: Low Density Polyethylene, Grade B, black. PP: Polypropylene. PPG: Glass-filled polypropylene. PS: Polystyrene. TPE: Thermoplastic elastomer. MB: Masterbatch (polymer with color pigment). UV: UV stabilizer. BA: Blower agent.

Product packaging

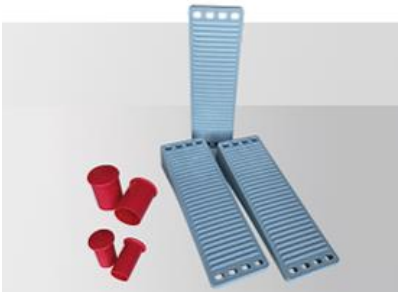
The average amount of packaging materials (kg per declared unit) of each declared product can be seen in Table 4.

Table 4 Average amount (kg) of packaging allocated for each average product per declared unit (1 kg).

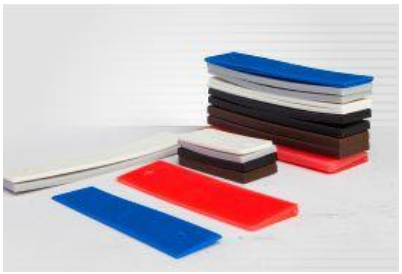
Average product no.	Euro pallet (kg)	Cardboard box (kg)	Plastic packaging (kg)
1	2.33E-03	1.39E-03	3.63E-04
2	6.74E-03	1.02E-05	2.65E-06
3	1.09E-02	1.21E-06	3.14E-07
4	1.53E-02	6.39E-05	1.66E-05
5	7.16E-03	3.33E-04	8.68E-05
6	6.55E-03	8.37E-06	2.18E-06
7	7.15E-03	1.50E-05	3.91E-06
8	8.93E-03	7.01E-05	1.83E-05
9	6.16E-03	5.01E-05	1.31E-05
10	1.08E-02	3.24E-06	8.45E-07
11	8.41E-03	1.85E-06	4.83E-07
12	6.84E-03	4.24E-06	1.10E-06
13	5.10E-03	1.30E-05	3.39E-06
14	4.71E-03	1.41E-05	3.66E-06
15	9.68E-03	4.03E-05	1.05E-05
16	7.82E-03	1.79E-05	4.67E-06
17	2.99E-03	2.42E-04	6.31E-05
18	3.53E-03	1.73E-04	4.50E-05
19	8.13E-03	1.59E-05	4.02E-06
20	8.19E-03	1.76E-04	4.58E-05
21	8.72E-03	4.47E-05	1.16E-05
22	3.38E-02	1.01E-05	2.64E-06
23	1.03E-02	0.00E+00	9.71E-06
24	7.98E-03	0.00E+00	1.10E-06
25	7.45E-03	0.00E+00	1.70E-05
26	2.36E-02	0.00E+00	1.38E-05
27	7.64E-03	0.00E+00	1.84E-06
28	7.33E-03	0.00E+00	8.95E-06
29	3.37E-02	3.06E-06	1.80E-06
30	5.92E-03	0.00E+00	5.48E-07
31	1.71E-02	0.00E+00	9.24E-08
32	5.45E-03	0.00E+00	5.72E-05
33	1.91E-02	4.31E-05	1.30E-05
34	3.43E-02	2.78E-05	7.24E-06
35	2.63E-02	0.00E+00	6.28E-06
36	2.48E-02	5.39E-06	1.40E-06
37	1.79E-02	5.33E-05	1.39E-05
38	1.28E-02	4.38E-07	9.08E-07
39	1.39E-02	0.00E+00	2.33E-05
40	1.14E-02	0.00E+00	1.23E-05
41	6.16E-03	1.27E-04	3.32E-05
42	7.39E-03	2.31E-04	6.02E-05
43	1.69E-02	2.11E-06	5.50E-07
44	7.06E-03	3.45E-04	8.99E-05

Pictures of products

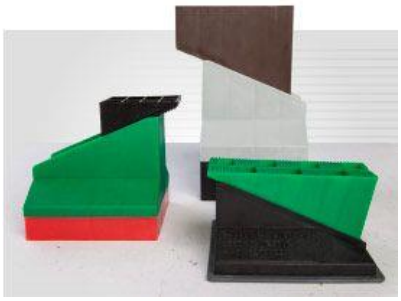
Concrete accessories:



Glass panels:



Flooring wedge systems:



Adjustment pieces:

Wedges:

Sound reducers:

Mix boxes and bags:

Wall brackets:

QuickFix/QuickFix Mini:

Terrace concept:

Use of the products

Harpun plastic elements are used in the construction sector with various applications. Importantly, these products require no maintenance during their use phase and are often left in place after construction is completed. Here, the 10 product categories are described:

(1) Concrete accessories: Harpun offers Tentor Caps ranging from Ø6 mm to Ø32 mm, which are easy to install and remove. The Tentor Caps help prevent personal injury and keep construction sites compliant with regulations. Large wedges for concrete elements during storage and transport prevent damage and discoloration, featuring ribs and drainage holes to avoid water damage.

(2) Glass panels: Harpun's glass panels, used for leveling and setting up doors and windows, come in various shapes, inclines, and sizes, suitable for many building tasks. They are available in 50 and 100 mm lengths and with a 7-degree slope.

(3) Flooring wedge system: Harpun's flooring wedge system is a versatile solution for floor elevation and sound insulation. Their universal shimming system allows mixing of all wedges to reach any desired height.

(4) Adjustment panels: The Harpun Adjustment Panel, ideal for positioning heavy concrete slabs, features patented Harpun Pegs for easy fitting. Available in two models, it can bear loads of 2 tons (Medium Load) and 6 tons (Heavy Load). The Harpun Pegs, aiding in positioning, "vanish" under slight pressure (40-90 kg).

(5) Wedges: Harpun's wedges are versatile tools for leveling floors, windows, doors, and more during construction. They are available in various sizes and colors, with each wedge type designed for a specific function.

(6) Sound reducers: Harpun's sound reducers are designed for floor fitters demanding high standards. It offers a 4 decibel reduction in footstep noise in multi-story buildings, translating to 50% noise absorption, as per DELTA Institute tests. Its universal design also allows integration with Harpun's other wedging systems.

(7) Mix boxes and bags: Harpun offers individually tailored product mixes for professional craftsmen, packaged in smart, high-quality plastic boxes with practical handles on the lids. Options include the popular Glass Block Mix (SpacerMix), the traditional Wedge Mix (TriaMix), or various Adjustable Shim Mixes, ensuring the right size is always at hand.

(8) Wall brackets: Harpun's wall brackets are designed for mounting doors and windows, providing a sturdy base for screws. These brackets are ideal for retrofitting, allowing for the adjustment of windows and doors post-insulation. Both types of wall brackets ensure that no cold conduction occurs, enhancing thermal efficiency.

(9) QuickFix/QuickFix mini: The Harpun QuickFix spacers are made from strong, quality plastic and feature the so-called "Harpun Fins", ensuring they firmly attach to the mounting screw. The QuickFix spacers are commonly used for mounting windows, doors, panels, hangings, ceilings, and facades.

(10) Terrace concept: The Terrace Concept offers the required pieces for easy adjustment and setup-up of an outdoor terrace.

Essential characteristics

Information regarding the essential characteristics of the declared products can be acquired by contacting Harpun A/S directly or visiting their website.

Hazardous substances

The declared products by Harpun do not contain substances listed on the REACH candidate list by the European Chemicals Agency (ECHA).

LCA background

Declared and functional unit

The LCI and LCIA results in this EPD relate to 1 kg product. Please refer to Table 2 for the weight (kg) per 1 piece of product. No functional unit has been defined as the function of the declared products vary and the use stage (module B) is not declared.

LCA software and background database

SimaPro v. 9.4 was used as LCA software. The ecoinvent v. 3.8 database was used as background database.

Representativity

Harpun operates two manufacturing sites (Slangerup and Rødding) and the results presented in this EPD represent a weighted average of data for the two production sites in 2022. The weighted average is based on the amount of declared products manufactured at each production site in 2022 (kg). The foreground data used in the LCA-report is based on the year 2022[1] for the two production sites in Slangerup and Rødding. Background data is based on the ecoinvent v3.8 database. The data used is less than 10 years old and in compliance with EN15804:2012+A2:2019. The geographic scope of this EPD is Denmark.

Reference Service Life (RSL)

The EPD does not include the reference service life (RSL) of the declared products since the use stage (module B) has not been declared. The products do not require any maintenance or replacement during the operation of the construction or building.

Product Category Rules

This EPD was conducted based on the requirements in EN 15804:2012+A2:2019 which serves as the core PCR.

[1] Data for TPE were gathered for year 2021.

System boundary and flow diagram

Please refer to Table 1 for the system boundary. This LCA covers module A1-A5, C1-C4 and D of all declared products. The table shows which life cycle stages are included and which modules were not declared (MND). Module B was not declared as the declared products do not require any inputs during their use phase (B1-B7). The products are left in place after installation and remain there during the building's lifetime. Installation (A5) and dismantling (C1) of the products is manual and does not have an environmental impact except for the waste treatment of the packaging discarded in A5. Both modules are declared although the impacts of C1 is 0.

For a flow diagram of the modelled systems for all declared products please refer to Figure 1.

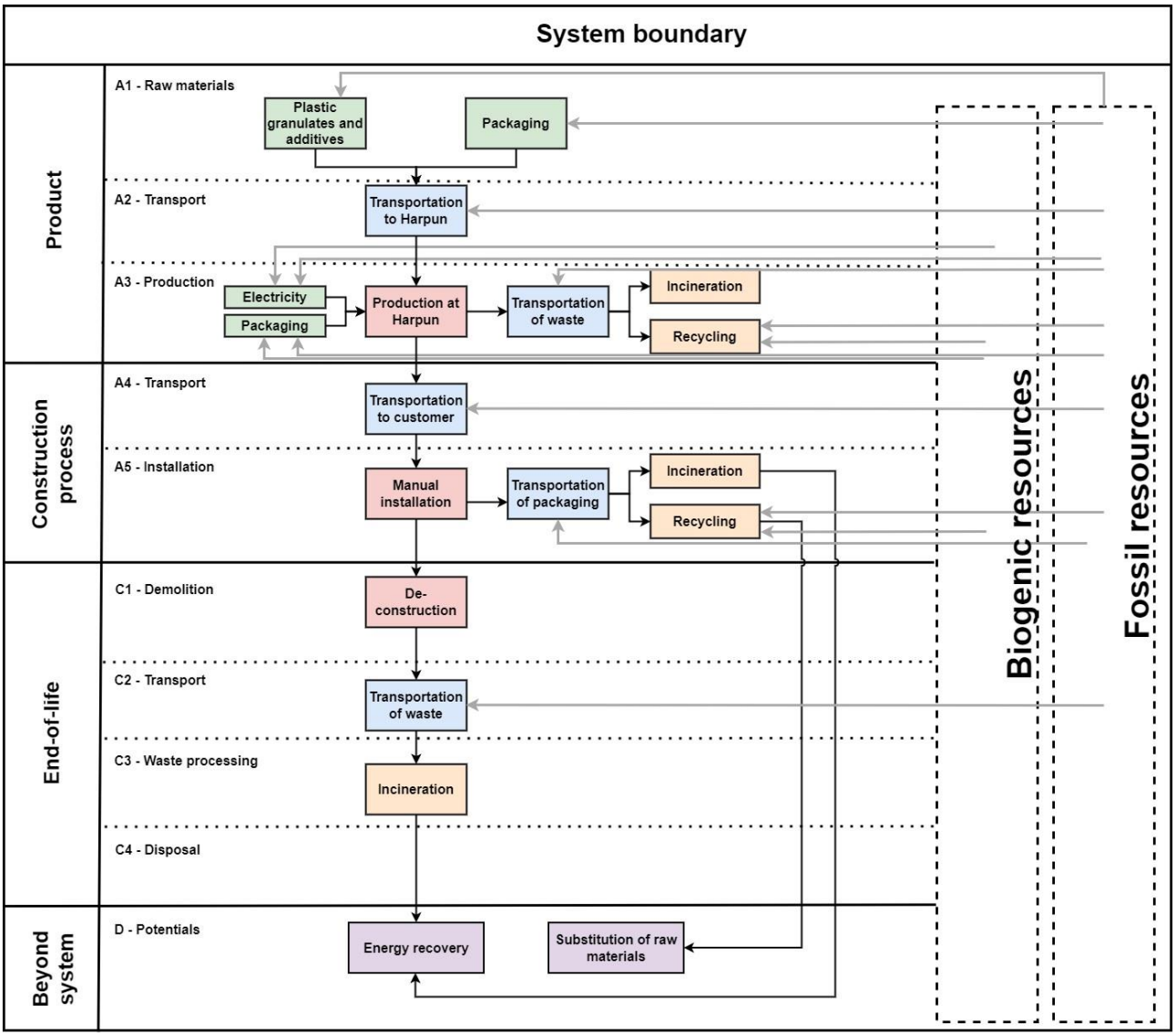


Figure 1 Flow diagram of the modelled systems for all declared products.

Life cycle stages

This EPD follows a "cradle-to-gate with options" life cycle approach and includes module A1-A5, C1-C4, and D. All relevant modules and processes are included as per the system boundary in Table 1. The modules are described in the following.

The EPD follows the general guidelines for excluding inputs and outputs, which are consistent with the rules stated in EN 15804:2012+A2:2019, section 6.3.5. According to the standard, when input data are incomplete or missing for a unit process, the limit for excluding data is 1% for both renewable and non-renewable primary energy consumption, as well as 1% of the total mass input for the process in question. For any given module - for instance, modules A1 to A3, A4 to A5, B1 to B5, B6 to B7, C1 to C4, and module D - the combined omitted input flows must not exceed 5% of the total energy and mass inputs. 100% of the materials are included for the declared products in this EPD.

A1 – Extraction and processing of raw materials

Module A1 includes the extraction and processing of the raw materials (fossil) for the production of: (1) rubber, (2) HDPE B Black, (3) HDPE B Nature, (4) LDPE B Nature, (5) LDPE B Black, (6) PP, (7) PPG, (8) PS, (9) TPE, (10) masterbatch, (11) UV stabilizer and (12) blower agent. Furthermore, module A1 also includes the production of packaging for the raw materials (big bags).

Each raw material may be purchased from several suppliers and with varying recycled content throughout the year. The weight of materials purchased from each supplier and their respective recycled content (w/w) was taken into account to calculate a weighted average for 2022.

All transport of the raw materials until they reach Harpun's suppliers are included in A1.

In module A1 all unit processes use national average grid mixes. This is because the background datasets from ecoinvent v3.8 are not available with residual mixes.

A2 – Transportation to production sites

Module A2 includes the transportation of raw materials from Harpun's suppliers to Harpun's production facilities in Rødding and Slangerup. A weighted average was calculated from the distances between Harpun's suppliers, and each production site based on the number of deliveries to each site in 2022.

Harpun procures their raw materials from different suppliers in Denmark, Germany, Sweden, and Holland. The transportation occurs with a freight lorry >32 ton (EURO 4). Some suppliers deliver goods using fully loaded trucks returning empty while other suppliers deliver Harpun's products along with items for different companies making the exact capacity utilization unclear. Therefore, a standard capacity utilization according to ecoinvent v.3.8 was selected (50% including empty returns).

A3 – Manufacturing processes

Module A3 includes all relevant processes taking place at Harpun's two production sites in Rødding and Slangerup. The production is carried out by injection-molding of plastic granules.

The production facilities consume electricity and produce some waste streams.

Electricity is the only energy source at Harpun's production facilities since heating comes from heat pumps. A mass-based allocation approach was conducted to calculate the weighted average electricity consumption (kWh) per 1 kg of product, as well as the amount of waste (kg) allocated to 1 kg of product.

Harpun does not purchase guarantees of origin for renewable electricity. The residual mix for Denmark in 2022 was used for modelling electricity consumed in production.

Waste is sorted into different fractions where 84% of the total waste is recycled and 16% incinerated. The treatment until the end-of-waste state of all waste materials has been included. The recovered materials and energy from recycling and incineration of waste, respectively, have not been attributed to Harpun's products in any module.

The production and delivery of final product packaging was included in A3. The packaging includes Euro pallets, cardboard boxes, and LDPE packaging (e.g., plastic film and LDPE bags). The product category "Mixed boxes" use a plastic box instead of a cardboard box.

The amount of packaging (kg Euro pallet, kg cardboard box and kg LDPE packaging per declared unit) varies for each product due to several factors such as the weight of each product, the size of each box, the number of products within each box etc. (see Table 4). Euro pallets are assumed to be reused 25 times before disposal.

A4 – Transportation to the construction site

Module A4 includes the transportation of the products incl. packaging to the customer. The distance to the customer is highly variable, and therefore a conservative distance of 300 km to a Danish customer is considered. The transportation is undertaken by freight lorry (>32 ton, EURO4). The capacity utilization (including empty runs) of the vehicle is assumed to be 50%.

A5 – Installation

Module A5 includes the installation of the products and packaging waste disposal. Installation is carried out manually without any environmental impacts. Transport and subsequent waste management of packaging waste is accounted for. Transport of waste to treatment facilities is modelled with an unspecified lorry and a distance of 25 km. The distance is based on ecoinvent 3.8 datasets for Danish waste treatment. Euro pallets and cardboard packaging are sent to incineration with energy recovery. According to statistics by the Danish Environmental Agency[2] for packaging waste in 2021, 77% of the LDPE packaging is incinerated and 23% is recycled. This has been used as basis for the waste treatment of LDPE packaging. The treatment until the end-of-waste state of all waste materials has been included. Credits from the incineration and recycling processes are presented in module D.

[2] Statistik for emballageforsyning og indsamling af emballageaffald 2021 - Emballagestatistik 2021 (Miljøstyrelsen, 2023)

C1 – Dismantling

The dismantling of the products at end-of-life is done manually without any environmental impacts.

C2 – Transportation for waste treatment

Module C2 includes the transportation of waste from the place of dismantling to the waste treatment facilities. Transport of waste to treatment facilities is modelled with an unspecified lorry and a distance of 25 km. The distance is based on ecoinvent 3.8 datasets for Danish waste treatment.

C3 – Incineration and recycling

Module C3 includes the waste treatment of Harpun products after dismantling from the building. According to current practices in Denmark plastic elements from construction works are typically sent to incineration with residual waste. This is because the recyclability of the plastic elements differs due to the various compositions. As it is difficult to visually identify which products are recyclable and which are not 100% of the declared products are considered incinerated with energy recovery.

The treatment until the end-of-waste state of all waste materials has been included. Credits from the incineration and recycling processes are presented in module D.

C4 – Landfill disposal

Module C4 includes disposal of waste into landfills and incineration without energy recovery. As neither of these methods are used at the end-of-life of Harpun products, this module does not contain any environmental aspects.

D - Re-use, recovery, and recycling potentials

Module D includes the credits related to energy recovered from incineration and materials recovered from recycling processes. These substitute production of electricity and heat and virgin materials, respectively. Module D includes credits related to incineration with energy recovery and recycling from waste treatment in modules A5 and C3.

In module A5, 23% of the LDPE waste was recycled and 77% incinerated with energy recovery. In module A5 100% of the wood and cardboard waste was incinerated with energy recovery. In module C3 100% of the declared products were incinerated with energy recovery at the EOL.

Recycling of 100% virgin LDPE packaging into granules was included in A5 and in module D the resulting granules substitute 100% virgin LDPE granules. Production losses during recycling were included in the modelling (based on data in ecoinvent datasets).

Incineration of LDPE, wood, and cardboard packaging, and the declared products at EOL was included in module A5 and C3 and the energy recovered substitutes production of heat and electricity in module D according to the lower heating values of incinerated materials and the efficiency of incineration. The substituted electricity is the average grid mix for Denmark and the substituted heat mix is an average mix for Denmark for 2022 (consisting of biomass, waste and different fossil fuels).

LCA results

Results for group 1

Table 5 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	2.58E+00	1.73E-02	8.82E-01	3.00E-02	3.20E-03	0.00E+00	5.46E-03	2.51E+00	0.00E+00	-2.20E-01
GWP-fossil	kg CO_2 eq.	2.57E+00	1.73E-02	9.55E-01	2.99E-02	8.75E-04	0.00E+00	5.45E-03	2.51E+00	0.00E+00	-2.09E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-6.31E-03	0.00E+00	6.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.78E-03	6.26E-06	5.77E-04	1.19E-05	4.93E-08	0.00E+00	2.22E-06	1.11E-05	0.00E+00	-4.75E-04
ODP	kg CFC 11 eq.	8.59E-08	4.16E-09	3.63E-08	7.09E-09	1.38E-11	0.00E+00	1.28E-09	3.42E-09	0.00E+00	-9.41E-09
AP	mol H^+ eq.	1.32E-02	8.79E-05	3.46E-03	2.30E-04	7.96E-07	0.00E+00	3.09E-05	3.63E-04	0.00E+00	-1.17E-03
EP-freshwater	kg P eq.	5.26E-04	1.08E-06	3.44E-04	1.79E-06	1.82E-08	0.00E+00	3.68E-07	3.67E-06	0.00E+00	-1.43E-04
EP-marine	kg N eq.	2.58E-03	3.01E-05	6.65E-04	7.00E-05	3.68E-07	0.00E+00	1.12E-05	1.84E-04	0.00E+00	-2.70E-04
EP-terrestrial	mol N eq.	2.74E-02	3.30E-04	6.74E-03	7.69E-04	3.83E-06	0.00E+00	1.22E-04	1.81E-03	0.00E+00	-3.51E-03
POCP	kg NMVOC eq.	9.47E-03	9.85E-05	1.84E-03	2.20E-04	9.81E-07	0.00E+00	3.50E-05	4.45E-04	0.00E+00	-7.16E-04
ADPm[1]	kg Sb eq.	2.23E-05	4.00E-08	2.60E-06	6.66E-08	2.37E-10	0.00E+00	1.83E-08	9.46E-08	0.00E+00	-8.20E-07
ADPf[1]	MJ	6.69E+01	2.71E-01	1.35E+01	4.62E-01	6.04E-04	0.00E+00	8.39E-02	3.30E-01	0.00E+00	-2.98E+00
WDP[1]	m^3 world eq. deprived	8.82E-01	9.35E-04	1.65E-01	1.53E-03	1.64E-05	0.00E+00	2.75E-04	2.15E-03	0.00E+00	-3.37E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 6 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.26E-07	2.08E-09	1.88E-08	3.35E-09	6.31E-12	0.00E+00	6.03E-10	2.37E-09	0.00E+00	-9.66E-09
IRP[2]	[kBq U235 eq.]	1.20E-01	1.37E-03	1.11E-01	2.32E-03	6.26E-06	0.00E+00	4.33E-04	9.39E-04	0.00E+00	-4.91E-02
ETP-fw[1]	[CTUe]	3.10E+01	2.12E-01	1.41E+01	3.55E-01	3.96E-03	0.00E+00	6.64E-02	6.94E-01	0.00E+00	-7.38E+00
HTP-c[1]	[CTUh]	1.26E-09	5.86E-12	3.23E-10	1.09E-11	5.90E-13	0.00E+00	2.65E-12	1.00E-10	0.00E+00	-1.15E-10
HTP-nc[1]	[CTUh]	5.81E-08	2.32E-10	6.62E-09	3.78E-10	4.15E-12	0.00E+00	7.65E-11	3.51E-09	0.00E+00	-3.44E-09
SQP[1]	-	4.79E+00	3.11E-01	1.07E+01	4.92E-01	4.14E-04	0.00E+00	7.16E-02	1.59E-01	0.00E+00	-1.01E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 7 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.39E+00	3.46E-03	2.93E+00	5.67E-03	1.84E-04	0.00E+00	1.21E-03	6.86E-03	0.00E+00	-3.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.39E+00	3.46E-03	2.93E+00	5.67E-03	1.84E-04	0.00E+00	1.21E-03	6.86E-03	0.00E+00	-3.83E+00
PENRE	[MJ]	6.63E+01	2.71E-01	1.35E+01	4.62E-01	6.04E-04	0.00E+00	8.39E-02	3.30E-01	0.00E+00	-2.98E+00
PENRM	[MJ]	6.00E-01	0.00E+00	3.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.69E+01	2.71E-01	1.35E+01	4.62E-01	6.04E-04	0.00E+00	8.39E-02	3.30E-01	0.00E+00	-2.98E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.00E+00	6.59E-06	2.87E-02	1.02E-05	4.08E-08	0.00E+00	1.71E-06	5.04E-05	0.00E+00	-1.48E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 8 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2,15E-05	6,57E-07	1,10E-05	1,03E-06	1,52E-08	0,00E+00	3,42E-06	2,77E-06	0,00E+00	-1,82E-06
NHWD	[kg]	4,39E-03	1,43E-05	2,70E-03	2,24E-05	2,48E-05	0,00E+00	7,45E-05	1,86E-02	0,00E+00	-6,39E-04
RWD	[kg]	4.42E-05	1.84E-06	2.03E-03	3.14E-06	4.10E-09	0.00E+00	5.68E-07	1.60E-06	0.00E+00	-3.38E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	8.36E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	4.00E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	6.79E-03	0.00E+00	0.00E+00	2.44E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.39E-02	0.00E+00	0.00E+00	4.92E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 9 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.72E-03

Results for group 2

Table 10 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.83E-01	2.91E-02	7.69E-01	3.01E-02	4.55E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.46E-01
GWP-fossil	kg CO_2 eq.	8.09E-01	2.91E-02	9.94E-01	3.00E-02	4.55E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.23E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.16E-02	0.00E+00	1.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.39E-04	1.05E-05	7.16E-04	1.19E-05	1.61E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.62E-04
ODP	kg CFC 11 eq.	6.26E-08	6.99E-09	4.12E-08	7.10E-09	8.98E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.27E-03	1.48E-04	3.67E-03	2.31E-04	2.97E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	1.82E-06	3.57E-04	1.80E-06	4.22E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	9.52E-04	5.07E-05	7.22E-04	7.01E-05	1.19E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.46E-04
EP-terrestrial	mol N eq.	8.04E-03	5.54E-04	7.38E-03	7.71E-04	1.30E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.08E-03
POCP	kg NMVOC eq.	2.49E-03	1.66E-04	2.07E-03	2.20E-04	3.59E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	5.96E-06	6.72E-08	2.88E-06	6.67E-08	1.33E-10	0.00E+00	1.83E-08	6.25E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	1.18E+01	4.56E-01	1.41E+01	4.63E-01	5.94E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
WDP[1]	m^3 world eq. deprived	1.97E-01	1.57E-03	1.85E-01	1.53E-03	2.75E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.82E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 11 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.61E-08	3.50E-09	2.18E-08	3.36E-09	4.77E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	2.31E-03	1.16E-01	2.32E-03	3.05E-06	0.00E+00	4.33E-04	6.70E-04	0.00E+00	-9.95E-02
ETP-fw[1]	[CTUe]	1.39E+01	3.56E-01	1.48E+01	3.56E-01	5.33E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.37E-10	9.86E-12	5.27E-10	1.09E-11	1.02E-13	0.00E+00	2.65E-12	4.18E-10	0.00E+00	-2.32E-10
HTP-nc[1]	[CTUh]	1.02E-08	3.90E-10	7.35E-09	3.79E-10	7.78E-13	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.95E-09
SQP[1]	-	5.99E+00	5.22E-01	2.42E+01	4.94E-01	4.92E-04	0.00E+00	7.16E-02	4.97E-02	0.00E+00	-2.03E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 12 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	5.81E-03	5.43E+00	5.68E-03	1.06E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.73E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.17E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	5.81E-03	5.43E+00	5.68E-03	1.06E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.73E+00
PENRE	[MJ]	1.10E+01	4.56E-01	1.41E+01	4.63E-01	5.94E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
PENRM	[MJ]	8.29E-01	0.00E+00	2.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.18E+01	4.56E-01	1.41E+01	4.63E-01	5.94E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
SM	[kg]	9.68E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.50E-02	1.11E-05	2.24E-02	1.03E-05	1.71E-08	0.00E+00	1.71E-06	2.75E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 13 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,38E-05	1,10E-06	1,21E-05	1,03E-06	2,49E-08	0,00E+00	3,42E-06	9,29E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,07E-02	2,40E-05	2,82E-03	2,25E-05	2,90E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.40E-05	3.10E-06	2.03E-03	3.15E-06	3.91E-09	0.00E+00	5.68E-07	3.98E-07	0.00E+00	-4.81E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	6.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	6.75E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	8.79E-03	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.85E-02	0.00E+00	0.00E+00	9.86E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 14 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.17E-03

Results for group 3

Table 15 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.77E-01	2.91E-02	6.53E-01	3.02E-02	7.05E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.03E-01	2.91E-02	1.02E+00	3.01E-02	6.43E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.88E-02	0.00E+00	1.88E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.37E-04	1.05E-05	8.57E-04	1.20E-05	2.57E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.24E-08	7.00E-09	4.57E-08	7.13E-09	1.44E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.24E-03	1.48E-04	3.85E-03	2.32E-04	4.74E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	1.83E-06	3.66E-04	1.81E-06	6.65E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	9.48E-04	5.07E-05	7.72E-04	7.04E-05	1.90E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	7.99E-03	5.55E-04	7.93E-03	7.74E-04	2.07E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.47E-03	1.66E-04	2.28E-03	2.21E-04	5.73E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.86E-06	6.72E-08	3.12E-06	6.70E-08	2.14E-10	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	1.16E+01	4.57E-01	1.46E+01	4.65E-01	9.58E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.05E+00
WDP[1]	m^3 world eq. deprived	1.93E-01	1.57E-03	2.04E-01	1.54E-03	4.29E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.83E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 16 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.58E-08	3.50E-09	2.46E-08	3.38E-09	7.68E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	2.31E-03	1.20E-01	2.33E-03	4.89E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.38E+01	3.57E-01	1.55E+01	3.57E-01	8.22E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.34E-10	9.87E-12	7.20E-10	1.10E-11	1.59E-13	0.00E+00	2.65E-12	4.10E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.01E-08	3.90E-10	8.00E-09	3.81E-10	1.22E-12	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.96E-09
SQP[1]	-	5.99E+00	5.23E-01	3.71E+01	4.96E-01	7.94E-04	0.00E+00	7.16E-02	4.97E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 17 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	5.82E-03	7.79E+00	5.70E-03	1.52E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.74E+00
PERM	[MJ]	0.00E+00	0.00E+00	5.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	5.82E-03	7.80E+00	5.70E-03	1.52E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.74E+00
PENRE	[MJ]	1.08E+01	4.57E-01	1.46E+01	4.65E-01	9.58E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.05E+00
PENRM	[MJ]	8.32E-01	0.00E+00	3.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.16E+01	4.57E-01	1.46E+01	4.65E-01	9.58E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.05E+00
SM	[kg]	9.72E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.22E-02	1.11E-05	2.24E-02	1.03E-05	2.73E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 18 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	1,11E-06	1,30E-05	1,04E-06	4,03E-08	0,00E+00	3,42E-06	9,10E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,07E-02	2,41E-05	2,92E-03	2,26E-05	4,68E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.42E-05	3.10E-06	2.03E-03	3.17E-06	6.31E-09	0.00E+00	5.68E-07	3.94E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	7.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.09E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.42E-02	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.99E-02	0.00E+00	0.00E+00	9.88E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 19 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	5.14E-03

Results for group 4

Table 20 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	4.18E+00	2.63E-03	5.32E-01	3.03E-02	1.12E-03	0.00E+00	5.46E-03	3.15E+00	0.00E+00	-4.04E-01
GWP-fossil	kg CO_2 eq.	4.14E+00	2.63E-03	1.05E+00	3.03E-02	1.29E-04	0.00E+00	5.45E-03	3.15E+00	0.00E+00	-3.83E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-2.65E-02	0.00E+00	2.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	5.10E-04	9.52E-07	1.00E-03	1.20E-05	3.79E-08	0.00E+00	2.22E-06	6.02E-06	0.00E+00	-8.71E-04
ODP	kg CFC 11 eq.	2.20E-08	6.32E-10	5.05E-08	7.17E-09	2.07E-11	0.00E+00	1.28E-09	2.05E-09	0.00E+00	-1.72E-08
AP	mol H^+ eq.	1.61E-02	1.34E-05	4.03E-03	2.33E-04	6.94E-07	0.00E+00	3.09E-05	3.51E-04	0.00E+00	-2.14E-03
EP-freshwater	kg P eq.	6.59E-05	1.65E-07	3.76E-04	1.81E-06	1.01E-08	0.00E+00	3.68E-07	2.95E-06	0.00E+00	-2.62E-04
EP-marine	kg N eq.	2.61E-03	4.58E-06	8.25E-04	7.07E-05	2.80E-07	0.00E+00	1.12E-05	1.79E-04	0.00E+00	-4.95E-04
EP-terrestrial	mol N eq.	2.82E-02	5.01E-05	8.52E-03	7.78E-04	3.05E-06	0.00E+00	1.22E-04	1.83E-03	0.00E+00	-6.42E-03
POCP	kg NMVOC eq.	1.17E-02	1.50E-05	2.49E-03	2.22E-04	8.41E-07	0.00E+00	3.50E-05	4.85E-04	0.00E+00	-1.31E-03
ADPm[1]	kg Sb eq.	1.36E-06	6.07E-09	3.37E-06	6.73E-08	3.09E-10	0.00E+00	1.83E-08	6.04E-08	0.00E+00	-1.50E-06
ADPf[1]	MJ	8.81E+01	4.13E-02	1.51E+01	4.67E-01	1.36E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.47E+00
WDP[1]	m^3 world eq. deprived	2.37E+00	1.42E-04	2.23E-01	1.55E-03	6.71E-06	0.00E+00	2.75E-04	4.57E-03	0.00E+00	-6.18E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 21 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.79E-07	3.16E-10	2.75E-08	3.39E-09	1.10E-11	0.00E+00	6.03E-10	2.69E-09	0.00E+00	-1.77E-08
IRP[2]	[kBq U235 eq.]	8.75E-03	2.09E-04	1.23E-01	2.34E-03	7.08E-06	0.00E+00	4.33E-04	6.48E-04	0.00E+00	-9.01E-02
ETP-fw[1]	[CTUe]	1.90E+01	3.22E-02	1.61E+01	3.59E-01	1.32E-03	0.00E+00	6.64E-02	2.45E+00	0.00E+00	-1.35E+01
HTP-c[1]	[CTUh]	8.05E-10	8.91E-13	9.22E-10	1.10E-11	2.48E-13	0.00E+00	2.65E-12	5.01E-10	0.00E+00	-2.10E-10
HTP-nc[1]	[CTUh]	1.08E-08	3.53E-11	8.68E-09	3.83E-10	1.88E-12	0.00E+00	7.65E-11	3.26E-09	0.00E+00	-6.30E-09
SQP[1]	-	1.19E+00	4.72E-02	5.06E+01	4.98E-01	1.12E-03	0.00E+00	7.16E-02	5.05E-02	0.00E+00	-1.84E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 22 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	4.17E-01	5.25E-04	1.03E+01	5.73E-03	2.93E-05	0.00E+00	1.21E-03	7.45E-03	0.00E+00	-7.00E+00
PERM	[MJ]	0.00E+00	0.00E+00	7.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.17E-01	5.25E-04	1.03E+01	5.73E-03	2.93E-05	0.00E+00	1.21E-03	7.45E-03	0.00E+00	-7.00E+00
PENRE	[MJ]	8.72E+01	4.13E-02	1.51E+01	4.67E-01	1.36E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.47E+00
PENRM	[MJ]	9.02E-01	0.00E+00	6.04E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.81E+01	4.13E-02	1.51E+01	4.67E-01	1.36E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.47E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	5.94E-02	1.00E-06	2.29E-02	1.04E-05	3.99E-08	0.00E+00	1.71E-06	2.73E-05	0.00E+00	-1.91E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 23 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3,94E-06	9,98E-08	1,40E-05	1,04E-06	5,68E-08	0,00E+00	3,42E-06	1,23E-06	0,00E+00	-3,34E-06
NHWD	[kg]	1,26E-03	2,17E-06	3,04E-03	2,27E-05	6,63E-05	0,00E+00	7,45E-05	1,65E-02	0,00E+00	-1,17E-03
RWD	[kg]	8.34E-06	2.80E-07	2.03E-03	3.18E-06	8.96E-09	0.00E+00	5.68E-07	3.84E-07	0.00E+00	-4.35E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.54E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	2.01E-02	0.00E+00	0.00E+00	4.49E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	4.23E-02	0.00E+00	0.00E+00	8.94E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 24 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	7.22E-03

Results for group 5

Table 25 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.00E+00	4.32E-02	7.58E-01	3.01E-02	1.19E-03	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.42E-01
GWP-fossil	kg CO_2 eq.	9.34E-01	4.31E-02	9.97E-01	3.00E-02	2.48E-04	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.20E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.29E-02	0.00E+00	1.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.83E-04	1.56E-05	7.34E-04	1.19E-05	2.73E-08	0.00E+00	2.22E-06	6.48E-06	0.00E+00	-9.54E-04
ODP	kg CFC 11 eq.	6.36E-08	1.04E-08	4.17E-08	7.11E-09	1.20E-11	0.00E+00	1.28E-09	2.19E-09	0.00E+00	-1.88E-08
AP	mol H^+ eq.	3.83E-03	2.19E-04	3.69E-03	2.31E-04	4.76E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.35E-03
EP-freshwater	kg P eq.	3.03E-04	2.71E-06	3.58E-04	1.80E-06	8.36E-09	0.00E+00	3.68E-07	2.99E-06	0.00E+00	-2.88E-04
EP-marine	kg N eq.	1.03E-03	7.52E-05	7.28E-04	7.02E-05	2.03E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.42E-04
EP-terrestrial	mol N eq.	9.04E-03	8.23E-04	7.44E-03	7.72E-04	2.16E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.03E-03
POCP	kg NMVOC eq.	2.93E-03	2.46E-04	2.09E-03	2.21E-04	5.80E-07	0.00E+00	3.50E-05	4.64E-04	0.00E+00	-1.43E-03
ADPm[1]	kg Sb eq.	6.91E-06	9.97E-08	2.90E-06	6.68E-08	1.86E-10	0.00E+00	1.83E-08	6.29E-08	0.00E+00	-1.65E-06
ADPf[1]	MJ	1.64E+01	6.77E-01	1.42E+01	4.64E-01	7.23E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
WDP[1]	m^3 world eq. deprived	2.69E-01	2.33E-03	1.87E-01	1.53E-03	6.50E-06	0.00E+00	2.75E-04	4.83E-03	0.00E+00	-6.77E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 26 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.04E-08	5.19E-09	2.21E-08	3.36E-09	6.15E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.93E-08
IRP[2]	[kBq U235 eq.]	1.44E-01	3.43E-03	1.16E-01	2.33E-03	4.45E-06	0.00E+00	4.33E-04	6.72E-04	0.00E+00	-9.87E-02
ETP-fw[1]	[CTUe]	1.51E+01	5.29E-01	1.49E+01	3.56E-01	1.44E-03	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.48E+01
HTP-c[1]	[CTUh]	7.52E-10	1.46E-11	5.47E-10	1.09E-11	2.37E-13	0.00E+00	2.65E-12	4.50E-10	0.00E+00	-2.30E-10
HTP-nc[1]	[CTUh]	1.10E-08	5.79E-10	7.43E-09	3.80E-10	1.73E-12	0.00E+00	7.65E-11	2.79E-09	0.00E+00	-6.90E-09
SQP[1]	-	5.86E+00	7.75E-01	2.55E+01	4.94E-01	5.79E-04	0.00E+00	7.16E-02	5.01E-02	0.00E+00	-2.02E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 27 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	8.62E-03	5.67E+00	5.69E-03	5.31E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.52E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	8.62E-03	5.67E+00	5.69E-03	5.31E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PENRE	[MJ]	1.56E+01	6.77E-01	1.42E+01	4.64E-01	7.23E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
PENRM	[MJ]	8.16E-01	0.00E+00	9.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.64E+01	6.77E-01	1.42E+01	4.64E-01	7.23E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
SM	[kg]	8.97E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.33E-01	1.64E-05	2.39E-02	1.03E-05	2.63E-08	0.00E+00	1.71E-06	2.78E-05	0.00E+00	-2.10E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 28 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,41E-05	1,64E-06	1,22E-05	1,03E-06	2,80E-08	0,00E+00	3,42E-06	1,01E-06	0,00E+00	-3,66E-06
NHWD	[kg]	1,02E-02	3,57E-05	2,83E-03	2,25E-05	3,42E-05	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,28E-03
RWD	[kg]	5.23E-05	4.60E-06	2.03E-03	3.15E-06	4.79E-09	0.00E+00	5.68E-07	4.16E-07	0.00E+00	-4.79E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.56E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.02E-02	0.00E+00	0.00E+00	4.94E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.14E-02	0.00E+00	0.00E+00	9.76E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 29 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.52E-03

Results for group 6

Table 30 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.98E-01	1.52E-02	7.74E-01	3.01E-02	4.39E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.25E-01	1.52E-02	9.92E-01	3.00E-02	4.33E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.13E-02	0.00E+00	1.13E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.40E-04	5.51E-06	7.10E-04	1.19E-05	1.56E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.24E-08	3.66E-09	4.10E-08	7.10E-09	8.72E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.32E-03	7.72E-05	3.66E-03	2.31E-04	2.88E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	9.54E-07	3.57E-04	1.80E-06	4.08E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	9.59E-04	2.65E-05	7.20E-04	7.01E-05	1.16E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	8.14E-03	2.90E-04	7.35E-03	7.71E-04	1.26E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.53E-03	8.66E-05	2.06E-03	2.20E-04	3.48E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.97E-06	3.51E-08	2.87E-06	6.67E-08	1.30E-10	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.25E+01	2.39E-01	1.41E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	2.02E-01	8.22E-04	1.85E-01	1.53E-03	2.66E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 31 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.65E-08	1.83E-09	2.17E-08	3.36E-09	4.64E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.48E-01	1.21E-03	1.16E-01	2.32E-03	2.96E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.39E+01	1.86E-01	1.48E+01	3.56E-01	5.14E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.35E-10	5.16E-12	5.19E-10	1.09E-11	9.86E-14	0.00E+00	2.65E-12	4.08E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.01E-08	2.04E-10	7.32E-09	3.79E-10	7.52E-13	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.95E+00	2.73E-01	2.37E+01	4.94E-01	4.78E-04	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 32 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	3.04E-03	5.32E+00	5.68E-03	1.01E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.08E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	3.04E-03	5.33E+00	5.68E-03	1.01E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	1.17E+01	2.39E-01	1.41E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.33E-01	0.00E+00	2.16E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.25E+01	2.39E-01	1.41E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	9.60E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.07E-02	5.79E-06	2.23E-02	1.03E-05	1.66E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 33 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	5,77E-07	1,20E-05	1,03E-06	2,42E-08	0,00E+00	3,42E-06	9,06E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,06E-02	1,26E-05	2,81E-03	2,25E-05	2,82E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.39E-05	1.62E-06	2.03E-03	3.15E-06	3.80E-09	0.00E+00	5.68E-07	3.93E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	5.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	6.56E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	8.54E-03	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.80E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 34 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.08E-03

Results for group 7

Table 35 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	2.57E+00	1.74E-02	7.58E-01	3.01E-02	4.92E-04	0.00E+00	5.46E-03	2.52E+00	0.00E+00	-2.20E-01
GWP-fossil	kg CO_2 eq.	2.56E+00	1.74E-02	9.96E-01	3.00E-02	5.09E-05	0.00E+00	5.45E-03	2.52E+00	0.00E+00	-2.09E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.23E-02	0.00E+00	1.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.78E-03	6.29E-06	7.30E-04	1.19E-05	1.72E-08	0.00E+00	2.22E-06	1.11E-05	0.00E+00	-4.75E-04
ODP	kg CFC 11 eq.	8.65E-08	4.18E-09	4.17E-08	7.11E-09	9.56E-12	0.00E+00	1.28E-09	3.41E-09	0.00E+00	-9.41E-09
AP	mol H^+ eq.	1.32E-02	8.83E-05	3.69E-03	2.31E-04	3.17E-07	0.00E+00	3.09E-05	3.62E-04	0.00E+00	-1.17E-03
EP-freshwater	kg P eq.	5.27E-04	1.09E-06	3.58E-04	1.80E-06	4.52E-09	0.00E+00	3.68E-07	3.68E-06	0.00E+00	-1.43E-04
EP-marine	kg N eq.	2.57E-03	3.03E-05	7.27E-04	7.02E-05	1.27E-07	0.00E+00	1.12E-05	1.83E-04	0.00E+00	-2.70E-04
EP-terrestrial	mol N eq.	2.73E-02	3.31E-04	7.43E-03	7.71E-04	1.39E-06	0.00E+00	1.22E-04	1.81E-03	0.00E+00	-3.51E-03
POCP	kg NMVOC eq.	9.44E-03	9.89E-05	2.09E-03	2.20E-04	3.84E-07	0.00E+00	3.50E-05	4.45E-04	0.00E+00	-7.15E-04
ADPm[1]	kg Sb eq.	2.25E-05	4.01E-08	2.90E-06	6.68E-08	1.42E-10	0.00E+00	1.83E-08	9.45E-08	0.00E+00	-8.20E-07
ADPf[1]	MJ	6.68E+01	2.73E-01	1.42E+01	4.63E-01	6.31E-04	0.00E+00	8.39E-02	3.27E-01	0.00E+00	-2.98E+00
WDP[1]	m^3 world eq. deprived	8.91E-01	9.39E-04	1.87E-01	1.53E-03	2.97E-06	0.00E+00	2.75E-04	2.21E-03	0.00E+00	-3.37E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 36 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.26E-07	2.09E-09	2.21E-08	3.36E-09	5.08E-12	0.00E+00	6.03E-10	2.38E-09	0.00E+00	-9.66E-09
IRP[2]	[kBq U235 eq.]	1.20E-01	1.38E-03	1.16E-01	2.32E-03	3.25E-06	0.00E+00	4.33E-04	9.38E-04	0.00E+00	-4.91E-02
ETP-fw[1]	[CTUe]	3.12E+01	2.13E-01	1.49E+01	3.56E-01	5.77E-04	0.00E+00	6.64E-02	6.96E-01	0.00E+00	-7.38E+00
HTP-c[1]	[CTUh]	1.27E-09	5.89E-12	5.46E-10	1.09E-11	1.10E-13	0.00E+00	2.65E-12	1.47E-10	0.00E+00	-1.15E-10
HTP-nc[1]	[CTUh]	5.77E-08	2.33E-10	7.42E-09	3.80E-10	8.37E-13	0.00E+00	7.65E-11	3.51E-09	0.00E+00	-3.44E-09
SQP[1]	-	4.82E+00	3.12E-01	2.55E+01	4.94E-01	5.22E-04	0.00E+00	7.16E-02	1.58E-01	0.00E+00	-1.01E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 37 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.39E+00	3.47E-03	5.66E+00	5.68E-03	1.18E-05	0.00E+00	1.21E-03	6.92E-03	0.00E+00	-3.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.39E+00	3.47E-03	5.66E+00	5.68E-03	1.18E-05	0.00E+00	1.21E-03	6.92E-03	0.00E+00	-3.83E+00
PENRE	[MJ]	6.62E+01	2.73E-01	1.42E+01	4.63E-01	6.31E-04	0.00E+00	8.39E-02	3.27E-01	0.00E+00	-2.98E+00
PENRM	[MJ]	5.88E-01	0.00E+00	2.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.68E+01	2.73E-01	1.42E+01	4.63E-01	6.31E-04	0.00E+00	8.39E-02	3.27E-01	0.00E+00	-2.98E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	4.92E+00	6.62E-06	2.24E-02	1.03E-05	1.83E-08	0.00E+00	1.71E-06	5.04E-05	0.00E+00	-1.48E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 38 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2,17E-05	6,60E-07	1,22E-05	1,03E-06	2,65E-08	0,00E+00	3,42E-06	2,83E-06	0,00E+00	-1,82E-06
NHWD	[kg]	4,43E-03	1,44E-05	2,83E-03	2,25E-05	3,08E-05	0,00E+00	7,45E-05	1,85E-02	0,00E+00	-6,39E-04
RWD	[kg]	4.37E-05	1.85E-06	2.03E-03	3.15E-06	4.15E-09	0.00E+00	5.68E-07	1.60E-06	0.00E+00	-3.38E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	8.99E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.17E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	9.33E-03	0.00E+00	0.00E+00	2.46E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.97E-02	0.00E+00	0.00E+00	4.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 39 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.37E-03

Results for group 8

Table 40 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.23E+00	7.57E-02	7.08E-01	3.01E-02	7.27E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.42E-01
GWP-fossil	kg CO_2 eq.	1.17E+00	7.56E-02	1.01E+00	3.01E-02	9.53E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.20E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.55E-02	0.00E+00	1.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.54E-04	2.74E-05	7.90E-04	1.20E-05	2.32E-08	0.00E+00	2.22E-06	6.48E-06	0.00E+00	-9.54E-04
ODP	kg CFC 11 eq.	6.40E-08	1.82E-08	4.36E-08	7.12E-09	1.23E-11	0.00E+00	1.28E-09	2.19E-09	0.00E+00	-1.88E-08
AP	mol H^+ eq.	4.79E-03	3.84E-04	3.76E-03	2.31E-04	4.22E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.35E-03
EP-freshwater	kg P eq.	3.23E-04	4.74E-06	3.62E-04	1.80E-06	6.27E-09	0.00E+00	3.68E-07	2.99E-06	0.00E+00	-2.87E-04
EP-marine	kg N eq.	1.17E-03	1.32E-04	7.49E-04	7.03E-05	1.71E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.42E-04
EP-terrestrial	mol N eq.	1.08E-02	1.44E-03	7.67E-03	7.73E-04	1.86E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.03E-03
POCP	kg NMVOC eq.	3.77E-03	4.31E-04	2.18E-03	2.21E-04	5.11E-07	0.00E+00	3.50E-05	4.64E-04	0.00E+00	-1.43E-03
ADPm[1]	kg Sb eq.	8.21E-06	1.75E-07	3.00E-06	6.69E-08	1.85E-10	0.00E+00	1.83E-08	6.29E-08	0.00E+00	-1.65E-06
ADPf[1]	MJ	2.52E+01	1.19E+00	1.44E+01	4.64E-01	8.03E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
WDP[1]	m^3 world eq. deprived	3.92E-01	4.09E-03	1.95E-01	1.54E-03	4.28E-06	0.00E+00	2.75E-04	4.83E-03	0.00E+00	-6.77E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 41 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.79E-08	9.10E-09	2.33E-08	3.37E-09	6.51E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.93E-08
IRP[2]	[kBq U235 eq.]	1.36E-01	6.00E-03	1.18E-01	2.33E-03	4.26E-06	0.00E+00	4.33E-04	6.73E-04	0.00E+00	-9.87E-02
ETP-fw[1]	[CTUe]	1.70E+01	9.27E-01	1.52E+01	3.57E-01	8.60E-04	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.48E+01
HTP-c[1]	[CTUh]	7.62E-10	2.56E-11	6.28E-10	1.10E-11	1.58E-13	0.00E+00	2.65E-12	4.51E-10	0.00E+00	-2.30E-10
HTP-nc[1]	[CTUh]	1.22E-08	1.01E-09	7.69E-09	3.80E-10	1.19E-12	0.00E+00	7.65E-11	2.79E-09	0.00E+00	-6.90E-09
SQP[1]	-	5.56E+00	1.36E+00	3.10E+01	4.95E-01	6.62E-04	0.00E+00	7.16E-02	5.01E-02	0.00E+00	-2.02E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 42 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.14E+00	1.51E-02	6.67E+00	5.69E-03	2.14E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PERM	[MJ]	0.00E+00	0.00E+00	4.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.14E+00	1.51E-02	6.67E+00	5.69E-03	2.14E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PENRE	[MJ]	2.44E+01	1.19E+00	1.44E+01	4.64E-01	8.03E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
PENRM	[MJ]	8.16E-01	0.00E+00	4.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.52E+01	1.19E+00	1.44E+01	4.64E-01	8.03E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
SM	[kg]	7.68E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.83E-01	2.88E-05	2.27E-02	1.03E-05	2.41E-08	0.00E+00	1.71E-06	2.78E-05	0.00E+00	-2.10E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 43 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,40E-05	2,87E-06	1,26E-05	1,04E-06	3,33E-08	0,00E+00	3,42E-06	1,01E-06	0,00E+00	-3,66E-06
NHWD	[kg]	9,40E-03	6,25E-05	2,87E-03	2,25E-05	3,90E-05	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,28E-03
RWD	[kg]	4.96E-05	8.06E-06	2.03E-03	3.16E-06	5.29E-09	0.00E+00	5.68E-07	4.17E-07	0.00E+00	-4.79E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	4.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	9.02E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.18E-02	0.00E+00	0.00E+00	4.94E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.49E-02	0.00E+00	0.00E+00	9.76E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 44 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	4.23E-03

Results for group 9

Table 45 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	9.06E-01	1.52E-02	7.85E-01	3.00E-02	5.05E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.46E-01
GWP-fossil	kg CO_2 eq.	8.33E-01	1.52E-02	9.90E-01	3.00E-02	6.68E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.23E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.07E-02	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.44E-04	5.52E-06	6.97E-04	1.19E-05	1.60E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.62E-04
ODP	kg CFC 11 eq.	6.27E-08	3.66E-09	4.06E-08	7.10E-09	8.52E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.37E-03	7.74E-05	3.65E-03	2.30E-04	2.92E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.92E-04	9.56E-07	3.56E-04	1.80E-06	4.34E-09	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	9.65E-04	2.66E-05	7.15E-04	7.01E-05	1.19E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.46E-04
EP-terrestrial	mol N eq.	8.21E-03	2.90E-04	7.30E-03	7.71E-04	1.28E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.08E-03
POCP	kg NMVOC eq.	2.56E-03	8.68E-05	2.04E-03	2.20E-04	3.53E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	6.10E-06	3.52E-08	2.84E-06	6.67E-08	1.27E-10	0.00E+00	1.83E-08	6.25E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	1.27E+01	2.39E-01	1.40E+01	4.63E-01	5.54E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
WDP[1]	m^3 world eq. deprived	2.07E-01	8.23E-04	1.83E-01	1.53E-03	2.97E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.82E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 46 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.68E-08	1.83E-09	2.14E-08	3.36E-09	4.50E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.48E-01	1.21E-03	1.16E-01	2.32E-03	2.94E-06	0.00E+00	4.33E-04	6.70E-04	0.00E+00	-9.94E-02
ETP-fw[1]	[CTUe]	1.41E+01	1.87E-01	1.47E+01	3.56E-01	5.98E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.38E-10	5.17E-12	5.00E-10	1.09E-11	1.10E-13	0.00E+00	2.65E-12	4.19E-10	0.00E+00	-2.32E-10
HTP-nc[1]	[CTUh]	1.03E-08	2.04E-10	7.26E-09	3.79E-10	8.25E-13	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.95E-09
SQP[1]	-	5.95E+00	2.74E-01	2.24E+01	4.93E-01	4.56E-04	0.00E+00	7.16E-02	4.97E-02	0.00E+00	-2.03E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 47 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	3.05E-03	5.10E+00	5.68E-03	1.50E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.73E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.92E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	3.05E-03	5.10E+00	5.68E-03	1.50E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.73E+00
PENRE	[MJ]	1.19E+01	2.39E-01	1.40E+01	4.63E-01	5.54E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
PENRM	[MJ]	8.28E-01	0.00E+00	2.99E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.27E+01	2.39E-01	1.40E+01	4.63E-01	5.54E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
SM	[kg]	9.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.43E-02	5.80E-06	2.25E-02	1.03E-05	1.67E-08	0.00E+00	1.71E-06	2.75E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 48 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,38E-05	5,79E-07	1,19E-05	1,03E-06	2,30E-08	0,00E+00	3,42E-06	9,32E-07	0,00E+00	-3,68E-06
NHWD	[kg]	1,06E-02	1,26E-05	2,80E-03	2,25E-05	2,69E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.37E-05	1.62E-06	2.03E-03	3.15E-06	3.65E-09	0.00E+00	5.68E-07	3.99E-07	0.00E+00	-4.81E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	6.22E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	8.14E-03	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.71E-02	0.00E+00	0.00E+00	9.85E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 49 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.92E-03

Results for group 10

Table 50 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	4.20E+00	2.44E-03	6.56E-01	3.02E-02	7.02E-04	0.00E+00	5.46E-03	3.16E+00	0.00E+00	-4.06E-01
GWP-fossil	kg CO_2 eq.	4.16E+00	2.44E-03	1.02E+00	3.01E-02	6.49E-05	0.00E+00	5.45E-03	3.16E+00	0.00E+00	-3.85E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.86E-02	0.00E+00	1.86E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	4.99E-04	8.84E-07	8.53E-04	1.20E-05	2.55E-08	0.00E+00	2.22E-06	6.00E-06	0.00E+00	-8.75E-04
ODP	kg CFC 11 eq.	2.11E-08	5.87E-10	4.56E-08	7.13E-09	1.43E-11	0.00E+00	1.28E-09	2.04E-09	0.00E+00	-1.73E-08
AP	mol H^+ eq.	1.61E-02	1.24E-05	3.84E-03	2.31E-04	4.70E-07	0.00E+00	3.09E-05	3.51E-04	0.00E+00	-2.15E-03
EP-freshwater	kg P eq.	6.11E-05	1.53E-07	3.66E-04	1.81E-06	6.61E-09	0.00E+00	3.68E-07	2.94E-06	0.00E+00	-2.64E-04
EP-marine	kg N eq.	2.62E-03	4.25E-06	7.71E-04	7.04E-05	1.88E-07	0.00E+00	1.12E-05	1.79E-04	0.00E+00	-4.97E-04
EP-terrestrial	mol N eq.	2.83E-02	4.65E-05	7.92E-03	7.74E-04	2.05E-06	0.00E+00	1.22E-04	1.84E-03	0.00E+00	-6.45E-03
POCP	kg NMVOC eq.	1.18E-02	1.39E-05	2.27E-03	2.21E-04	5.68E-07	0.00E+00	3.50E-05	4.85E-04	0.00E+00	-1.31E-03
ADPm[1]	kg Sb eq.	1.05E-06	5.64E-09	3.11E-06	6.70E-08	2.12E-10	0.00E+00	1.83E-08	6.01E-08	0.00E+00	-1.51E-06
ADPf[1]	MJ	8.84E+01	3.83E-02	1.46E+01	4.65E-01	9.49E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
WDP[1]	m^3 world eq. deprived	2.38E+00	1.32E-04	2.03E-01	1.54E-03	4.28E-06	0.00E+00	2.75E-04	4.57E-03	0.00E+00	-6.21E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 51 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.80E-07	2.94E-10	2.45E-08	3.38E-09	7.62E-12	0.00E+00	6.03E-10	2.69E-09	0.00E+00	-1.77E-08
IRP[2]	[kBq U235 eq.]	7.86E-03	1.94E-04	1.19E-01	2.33E-03	4.85E-06	0.00E+00	4.33E-04	6.46E-04	0.00E+00	-9.05E-02
ETP-fw[1]	[CTUe]	1.88E+01	2.99E-02	1.54E+01	3.57E-01	8.20E-04	0.00E+00	6.64E-02	2.47E+00	0.00E+00	-1.36E+01
HTP-c[1]	[CTUh]	7.99E-10	8.28E-13	7.15E-10	1.10E-11	1.59E-13	0.00E+00	2.65E-12	4.81E-10	0.00E+00	-2.11E-10
HTP-nc[1]	[CTUh]	1.06E-08	3.28E-11	7.98E-09	3.81E-10	1.21E-12	0.00E+00	7.65E-11	3.26E-09	0.00E+00	-6.33E-09
SQP[1]	-	1.14E+00	4.39E-02	3.68E+01	4.96E-01	7.87E-04	0.00E+00	7.16E-02	5.03E-02	0.00E+00	-1.85E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 52 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	4.08E-01	4.88E-04	7.73E+00	5.70E-03	1.53E-05	0.00E+00	1.21E-03	7.43E-03	0.00E+00	-7.03E+00
PERM	[MJ]	0.00E+00	0.00E+00	5.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.08E-01	4.88E-04	7.74E+00	5.70E-03	1.53E-05	0.00E+00	1.21E-03	7.43E-03	0.00E+00	-7.03E+00
PENRE	[MJ]	8.75E+01	3.83E-02	1.46E+01	4.65E-01	9.49E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
PENRM	[MJ]	9.11E-01	0.00E+00	3.32E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.84E+01	3.83E-02	1.46E+01	4.65E-01	9.49E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.22E-02	9.30E-07	2.25E-02	1.03E-05	2.71E-08	0.00E+00	1.71E-06	2.71E-05	0.00E+00	-1.92E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 53 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3,63E-06	9,27E-08	1,30E-05	1,04E-06	3,99E-08	0,00E+00	3,42E-06	1,18E-06	0,00E+00	-3,35E-06
NHWD	[kg]	1,21E-03	2,02E-06	2,92E-03	2,26E-05	4,64E-05	0,00E+00	7,45E-05	1,65E-02	0,00E+00	-1,17E-03
RWD	[kg]	8.29E-06	2.60E-07	2.03E-03	3.16E-06	6.25E-09	0.00E+00	5.68E-07	3.72E-07	0.00E+00	-4.36E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.94E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.08E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.41E-02	0.00E+00	0.00E+00	4.50E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.97E-02	0.00E+00	0.00E+00	8.99E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 54 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	5.09E-03

Results for group 11

Table 55 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.21E+00	7.65E-02	7.23E-01	3.01E-02	5.44E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.46E-01
GWP-fossil	kg CO_2 eq.	1.15E+00	7.64E-02	1.00E+00	3.01E-02	5.01E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.23E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.45E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.44E-04	2.77E-05	7.72E-04	1.19E-05	1.98E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.62E-04
ODP	kg CFC 11 eq.	6.32E-08	1.84E-08	4.30E-08	7.12E-09	1.11E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	4.67E-03	3.88E-04	3.74E-03	2.31E-04	3.65E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	3.19E-04	4.80E-06	3.61E-04	1.80E-06	5.13E-09	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	1.16E-03	1.33E-04	7.42E-04	7.03E-05	1.46E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.46E-04
EP-terrestrial	mol N eq.	1.06E-02	1.46E-03	7.60E-03	7.72E-04	1.59E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.08E-03
POCP	kg NMVOC eq.	3.71E-03	4.35E-04	2.15E-03	2.21E-04	4.41E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	7.86E-06	1.77E-07	2.97E-06	6.68E-08	1.65E-10	0.00E+00	1.83E-08	6.25E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	2.47E+01	1.20E+00	1.43E+01	4.64E-01	7.38E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
WDP[1]	m^3 world eq. deprived	3.77E-01	4.13E-03	1.93E-01	1.54E-03	3.32E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.82E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 56 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.71E-08	9.20E-09	2.29E-08	3.37E-09	5.92E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.36E-01	6.07E-03	1.17E-01	2.33E-03	3.77E-06	0.00E+00	4.33E-04	6.70E-04	0.00E+00	-9.94E-02
ETP-fw[1]	[CTUe]	1.66E+01	9.37E-01	1.51E+01	3.56E-01	6.36E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.52E-10	2.59E-11	6.04E-10	1.10E-11	1.23E-13	0.00E+00	2.65E-12	4.19E-10	0.00E+00	-2.32E-10
HTP-nc[1]	[CTUh]	1.19E-08	1.03E-09	7.61E-09	3.80E-10	9.40E-13	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.95E-09
SQP[1]	-	5.55E+00	1.37E+00	2.94E+01	4.94E-01	6.12E-04	0.00E+00	7.16E-02	4.98E-02	0.00E+00	-2.03E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 57 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.13E+00	1.53E-02	6.37E+00	5.69E-03	1.18E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.72E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.13E+00	1.53E-02	6.38E+00	5.69E-03	1.18E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.72E+00
PENRE	[MJ]	2.39E+01	1.20E+00	1.43E+01	4.64E-01	7.38E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
PENRM	[MJ]	8.28E-01	0.00E+00	2.56E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.47E+01	1.20E+00	1.43E+01	4.64E-01	7.38E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
SM	[kg]	7.80E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.81E-01	2.91E-05	2.24E-02	1.03E-05	2.11E-08	0.00E+00	1.71E-06	2.75E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 58 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,36E-05	2,90E-06	1,25E-05	1,03E-06	3,10E-08	0,00E+00	3,42E-06	9,33E-07	0,00E+00	-3,68E-06
NHWD	[kg]	9,44E-03	6,32E-05	2,86E-03	2,25E-05	3,61E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.02E-05	8.15E-06	2.03E-03	3.16E-06	4.86E-09	0.00E+00	5.68E-07	3.99E-07	0.00E+00	-4.81E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.09E-02	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.31E-02	0.00E+00	0.00E+00	9.85E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 59 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.95E-03

Results for group 12

Table 60 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	9.96E-01	4.35E-02	7.66E-01	3.01E-02	4.49E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.44E-01
GWP-fossil	kg CO_2 eq.	9.27E-01	4.34E-02	9.94E-01	3.00E-02	4.24E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.21E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.18E-02	0.00E+00	1.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.79E-04	1.57E-05	7.19E-04	1.19E-05	1.62E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.57E-04
ODP	kg CFC 11 eq.	6.33E-08	1.04E-08	4.13E-08	7.10E-09	9.07E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.89E-08
AP	mol H^+ eq.	3.78E-03	2.21E-04	3.68E-03	2.31E-04	2.98E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.36E-03
EP-freshwater	kg P eq.	3.02E-04	2.73E-06	3.57E-04	1.80E-06	4.21E-09	0.00E+00	3.68E-07	2.99E-06	0.00E+00	-2.88E-04
EP-marine	kg N eq.	1.02E-03	7.57E-05	7.23E-04	7.01E-05	1.20E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.43E-04
EP-terrestrial	mol N eq.	8.96E-03	8.28E-04	7.39E-03	7.71E-04	1.30E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.05E-03
POCP	kg NMVOC eq.	2.91E-03	2.47E-04	2.08E-03	2.20E-04	3.61E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	6.78E-06	1.00E-07	2.88E-06	6.67E-08	1.35E-10	0.00E+00	1.83E-08	6.28E-08	0.00E+00	-1.65E-06
ADPf[1]	MJ	1.62E+01	6.82E-01	1.41E+01	4.63E-01	6.01E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.01E+00
WDP[1]	m^3 world eq. deprived	2.63E-01	2.35E-03	1.86E-01	1.53E-03	2.73E-06	0.00E+00	2.75E-04	4.83E-03	0.00E+00	-6.79E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 61 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.00E-08	5.23E-09	2.19E-08	3.36E-09	4.82E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.94E-08
IRP[2]	[kBq U235 eq.]	1.45E-01	3.45E-03	1.16E-01	2.32E-03	3.07E-06	0.00E+00	4.33E-04	6.71E-04	0.00E+00	-9.90E-02
ETP-fw[1]	[CTUe]	1.50E+01	5.33E-01	1.48E+01	3.56E-01	5.24E-04	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.48E+01
HTP-c[1]	[CTUh]	7.48E-10	1.47E-11	5.32E-10	1.09E-11	1.01E-13	0.00E+00	2.65E-12	4.38E-10	0.00E+00	-2.31E-10
HTP-nc[1]	[CTUh]	1.09E-08	5.83E-10	7.37E-09	3.79E-10	7.72E-13	0.00E+00	7.65E-11	2.78E-09	0.00E+00	-6.92E-09
SQP[1]	-	5.86E+00	7.81E-01	2.45E+01	4.94E-01	4.98E-04	0.00E+00	7.16E-02	4.99E-02	0.00E+00	-2.02E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 62 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	8.68E-03	5.48E+00	5.68E-03	9.94E-06	0.00E+00	1.21E-03	7.69E-03	0.00E+00	-7.69E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	8.68E-03	5.49E+00	5.68E-03	9.94E-06	0.00E+00	1.21E-03	7.69E-03	0.00E+00	-7.69E+00
PENRE	[MJ]	1.54E+01	6.82E-01	1.41E+01	4.63E-01	6.01E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.01E+00
PENRM	[MJ]	8.21E-01	0.00E+00	2.15E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.62E+01	6.82E-01	1.41E+01	4.63E-01	6.01E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.01E+00
SM	[kg]	9.02E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.32E-01	1.66E-05	2.23E-02	1.03E-05	1.72E-08	0.00E+00	1.71E-06	2.77E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 63 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,39E-05	1,65E-06	1,21E-05	1,03E-06	2,53E-08	0,00E+00	3,42E-06	9,77E-07	0,00E+00	-3,67E-06
NHWD	[kg]	1,02E-02	3,59E-05	2,82E-03	2,25E-05	2,94E-05	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,28E-03
RWD	[kg]	5.25E-05	4.63E-06	2.03E-03	3.15E-06	3.95E-09	0.00E+00	5.68E-07	4.09E-07	0.00E+00	-4.80E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.54E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	6.84E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	8.90E-03	0.00E+00	0.00E+00	4.95E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.88E-02	0.00E+00	0.00E+00	9.80E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 64 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.22E-03

Results for group 13

Table 65 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.97E-01	1.52E-02	8.14E-01	3.00E-02	3.56E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.24E-01	1.52E-02	9.82E-01	3.00E-02	3.77E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-8.80E-03	0.00E+00	8.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.40E-04	5.51E-06	6.61E-04	1.19E-05	1.24E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.24E-08	3.66E-09	3.95E-08	7.09E-09	6.83E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.32E-03	7.72E-05	3.60E-03	2.30E-04	2.27E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	9.54E-07	3.53E-04	1.80E-06	3.25E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	9.59E-04	2.65E-05	7.03E-04	7.00E-05	9.14E-08	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	8.13E-03	2.90E-04	7.16E-03	7.70E-04	9.94E-07	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.53E-03	8.66E-05	1.99E-03	2.20E-04	2.75E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.96E-06	3.51E-08	2.78E-06	6.66E-08	1.02E-10	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.25E+01	2.39E-01	1.39E+01	4.62E-01	4.50E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	2.01E-01	8.22E-04	1.78E-01	1.53E-03	2.14E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 66 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.65E-08	1.83E-09	2.07E-08	3.36E-09	3.63E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.48E-01	1.21E-03	1.15E-01	2.32E-03	2.33E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.39E+01	1.86E-01	1.46E+01	3.55E-01	4.17E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.35E-10	5.15E-12	4.51E-10	1.09E-11	7.93E-14	0.00E+00	2.65E-12	4.07E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.01E-08	2.04E-10	7.10E-09	3.79E-10	6.03E-13	0.00E+00	7.65E-11	2.76E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.95E+00	2.73E-01	1.92E+01	4.93E-01	3.73E-04	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 67 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	3.04E-03	4.50E+00	5.67E-03	8.68E-06	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	3.04E-03	4.50E+00	5.67E-03	8.68E-06	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	1.17E+01	2.39E-01	1.39E+01	4.62E-01	4.50E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.33E-01	0.00E+00	1.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.25E+01	2.39E-01	1.39E+01	4.62E-01	4.50E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	9.60E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.04E-02	5.79E-06	2.23E-02	1.03E-05	1.31E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 68 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	5,77E-07	1,17E-05	1,03E-06	1,89E-08	0,00E+00	3,42E-06	9,04E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,06E-02	1,26E-05	2,77E-03	2,25E-05	2,20E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.39E-05	1.62E-06	2.03E-03	3.15E-06	2.97E-09	0.00E+00	5.68E-07	3.92E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	7.79E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	5.11E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	6.66E-03	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.40E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 69 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.40E-03

Results for group 14

Table 70 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.96E-01	1.65E-02	8.25E-01	3.00E-02	3.33E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.23E-01	1.65E-02	9.80E-01	3.00E-02	3.61E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-8.14E-03	0.00E+00	8.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.38E-04	5.97E-06	6.48E-04	1.19E-05	1.15E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.22E-08	3.96E-09	3.91E-08	7.09E-09	6.33E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.31E-03	8.38E-05	3.59E-03	2.30E-04	2.11E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	1.03E-06	3.52E-04	1.80E-06	3.03E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	9.57E-04	2.87E-05	6.98E-04	7.00E-05	8.49E-08	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	8.11E-03	3.14E-04	7.10E-03	7.70E-04	9.23E-07	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.54E-03	9.39E-05	1.97E-03	2.20E-04	2.55E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.97E-06	3.81E-08	2.76E-06	6.66E-08	9.41E-11	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.25E+01	2.59E-01	1.39E+01	4.62E-01	4.17E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	2.08E-01	8.91E-04	1.76E-01	1.53E-03	2.00E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 71 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.64E-08	1.98E-09	2.05E-08	3.36E-09	3.36E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.48E-01	1.31E-03	1.14E-01	2.32E-03	2.16E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.39E+01	2.02E-01	1.45E+01	3.55E-01	3.91E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.34E-10	5.59E-12	4.33E-10	1.09E-11	7.41E-14	0.00E+00	2.65E-12	4.07E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.01E-08	2.21E-10	7.04E-09	3.79E-10	5.63E-13	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.96E+00	2.96E-01	1.80E+01	4.93E-01	3.45E-04	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 72 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.17E+00	3.29E-03	4.28E+00	5.67E-03	8.29E-06	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.17E+00	3.29E-03	4.28E+00	5.67E-03	8.29E-06	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	1.16E+01	2.59E-01	1.39E+01	4.62E-01	4.17E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.33E-01	0.00E+00	1.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.25E+01	2.59E-01	1.39E+01	4.62E-01	4.17E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	9.60E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.92E-02	6.28E-06	2.23E-02	1.02E-05	1.21E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 73 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	6,26E-07	1,16E-05	1,03E-06	1,74E-08	0,00E+00	3,42E-06	9,05E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,06E-02	1,36E-05	2,76E-03	2,24E-05	2,03E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.39E-05	1.76E-06	2.03E-03	3.15E-06	2.74E-09	0.00E+00	5.68E-07	3.92E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	8.43E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	4.73E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	6.16E-03	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.30E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 74 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.22E-03

Results for group 15

Table 75 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	5.14E+00	4.85E-03	7.39E-01	3.01E-02	5.42E-04	0.00E+00	5.46E-03	3.22E+00	0.00E+00	-3.13E-01
GWP-fossil	kg CO_2 eq.	5.11E+00	4.84E-03	1.00E+00	3.01E-02	5.66E-05	0.00E+00	5.45E-03	3.22E+00	0.00E+00	-2.97E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.35E-02	0.00E+00	1.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	6.88E-04	1.76E-06	7.53E-04	1.19E-05	1.89E-08	0.00E+00	2.22E-06	4.52E-05	0.00E+00	-6.75E-04
ODP	kg CFC 11 eq.	9.19E-08	1.17E-09	4.24E-08	7.11E-09	1.05E-11	0.00E+00	1.28E-09	1.54E-08	0.00E+00	-1.34E-08
AP	mol H^+ eq.	1.72E-02	2.46E-05	3.72E-03	2.31E-04	3.48E-07	0.00E+00	3.09E-05	5.92E-04	0.00E+00	-1.66E-03
EP-freshwater	kg P eq.	3.05E-04	3.04E-07	3.59E-04	1.80E-06	4.97E-09	0.00E+00	3.68E-07	1.33E-05	0.00E+00	-2.03E-04
EP-marine	kg N eq.	3.06E-03	8.45E-06	7.35E-04	7.02E-05	1.40E-07	0.00E+00	1.12E-05	3.01E-04	0.00E+00	-3.84E-04
EP-terrestrial	mol N eq.	2.99E-02	9.24E-05	7.52E-03	7.72E-04	1.52E-06	0.00E+00	1.22E-04	2.70E-03	0.00E+00	-4.98E-03
POCP	kg NMVOC eq.	1.35E-02	2.76E-05	2.12E-03	2.21E-04	4.21E-07	0.00E+00	3.50E-05	6.87E-04	0.00E+00	-1.02E-03
ADPm[1]	kg Sb eq.	3.60E-06	1.12E-08	2.94E-06	6.68E-08	1.56E-10	0.00E+00	1.83E-08	3.74E-07	0.00E+00	-1.16E-06
ADPf[1]	MJ	9.82E+01	7.61E-02	1.42E+01	4.64E-01	6.91E-04	0.00E+00	8.39E-02	4.46E-01	0.00E+00	-4.24E+00
WDP[1]	m^3 world eq. deprived	2.64E+00	2.62E-04	1.90E-01	1.53E-03	3.27E-06	0.00E+00	2.75E-04	2.71E-02	0.00E+00	-4.78E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 76 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	2.50E-07	5.83E-10	2.25E-08	3.37E-09	5.56E-12	0.00E+00	6.03E-10	4.05E-09	0.00E+00	-1.37E-08
IRP[2]	[kBq U235 eq.]	2.70E-02	3.85E-04	1.17E-01	2.33E-03	3.57E-06	0.00E+00	4.33E-04	3.66E-03	0.00E+00	-6.97E-02
ETP-fw[1]	[CTUe]	5.21E+01	5.94E-02	1.50E+01	3.56E-01	6.35E-04	0.00E+00	6.64E-02	6.21E+00	0.00E+00	-1.05E+01
HTP-c[1]	[CTUh]	1.03E-09	1.64E-12	5.77E-10	1.09E-11	1.21E-13	0.00E+00	2.65E-12	5.11E-10	0.00E+00	-1.63E-10
HTP-nc[1]	[CTUh]	1.58E-08	6.50E-11	7.52E-09	3.80E-10	9.20E-13	0.00E+00	7.65E-11	4.37E-09	0.00E+00	-4.89E-09
SQP[1]	-	1.92E+00	8.71E-02	2.76E+01	4.94E-01	5.72E-04	0.00E+00	7.16E-02	1.33E-01	0.00E+00	-1.43E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 77 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	5.50E-01	9.69E-04	6.04E+00	5.69E-03	1.31E-05	0.00E+00	1.21E-03	4.12E-02	0.00E+00	-5.43E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.50E-01	9.69E-04	6.04E+00	5.69E-03	1.31E-05	0.00E+00	1.21E-03	4.12E-02	0.00E+00	-5.43E+00
PENRE	[MJ]	9.74E+01	7.61E-02	1.42E+01	4.64E-01	6.91E-04	0.00E+00	8.39E-02	4.46E-01	0.00E+00	-4.24E+00
PENRM	[MJ]	8.52E-01	0.00E+00	2.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	9.82E+01	7.61E-02	1.42E+01	4.64E-01	6.91E-04	0.00E+00	8.39E-02	4.46E-01	0.00E+00	-4.24E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	9.51E+00	1.85E-06	2.24E-02	1.03E-05	2.00E-08	0.00E+00	1.71E-06	6.59E-05	0.00E+00	-1.29E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 78 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,36E-05	1,84E-07	1,23E-05	1,03E-06	2,90E-08	0,00E+00	3,42E-06	1,79E-06	0,00E+00	-2,59E-06
NHWD	[kg]	1,79E-03	4,01E-06	2,84E-03	2,25E-05	3,37E-05	0,00E+00	7,45E-05	1,70E-02	0,00E+00	-9,08E-04
RWD	[kg]	3.19E-04	5.17E-07	2.03E-03	3.16E-06	4.55E-09	0.00E+00	5.68E-07	1.96E-06	0.00E+00	-2.94E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.85E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.02E-02	0.00E+00	0.00E+00	3.03E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.15E-02	0.00E+00	0.00E+00	6.06E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 79 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.69E-03

Results for group 16

Table 80 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	4.16E+00	2.82E-03	6.88E-01	3.01E-02	7.10E-04	0.00E+00	5.46E-03	3.15E+00	0.00E+00	-4.02E-01
GWP-fossil	kg CO_2 eq.	4.12E+00	2.82E-03	1.01E+00	3.01E-02	8.12E-05	0.00E+00	5.45E-03	3.15E+00	0.00E+00	-3.81E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.67E-02	0.00E+00	1.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	5.21E-04	1.02E-06	8.15E-04	1.20E-05	2.40E-08	0.00E+00	2.22E-06	6.03E-06	0.00E+00	-8.67E-04
ODP	kg CFC 11 eq.	2.30E-08	6.79E-10	4.44E-08	7.13E-09	1.31E-11	0.00E+00	1.28E-09	2.05E-09	0.00E+00	-1.71E-08
AP	mol H^+ eq.	1.61E-02	1.43E-05	3.79E-03	2.31E-04	4.39E-07	0.00E+00	3.09E-05	3.50E-04	0.00E+00	-2.13E-03
EP-freshwater	kg P eq.	7.07E-05	1.77E-07	3.64E-04	1.80E-06	6.36E-09	0.00E+00	3.68E-07	2.96E-06	0.00E+00	-2.61E-04
EP-marine	kg N eq.	2.60E-03	4.92E-06	7.58E-04	7.03E-05	1.77E-07	0.00E+00	1.12E-05	1.79E-04	0.00E+00	-4.92E-04
EP-terrestrial	mol N eq.	2.81E-02	5.38E-05	7.77E-03	7.73E-04	1.93E-06	0.00E+00	1.22E-04	1.83E-03	0.00E+00	-6.39E-03
POCP	kg NMVOC eq.	1.17E-02	1.61E-05	2.21E-03	2.21E-04	5.31E-07	0.00E+00	3.50E-05	4.84E-04	0.00E+00	-1.30E-03
ADPm[1]	kg Sb eq.	1.67E-06	6.52E-09	3.05E-06	6.69E-08	1.95E-10	0.00E+00	1.83E-08	6.07E-08	0.00E+00	-1.50E-06
ADPf[1]	MJ	8.78E+01	4.43E-02	1.45E+01	4.65E-01	8.60E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.45E+00
WDP[1]	m^3 world eq. deprived	2.36E+00	1.53E-04	1.98E-01	1.54E-03	4.24E-06	0.00E+00	2.75E-04	4.58E-03	0.00E+00	-6.15E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 81 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.79E-07	3.40E-10	2.38E-08	3.37E-09	6.94E-12	0.00E+00	6.03E-10	2.69E-09	0.00E+00	-1.76E-08
IRP[2]	[kBq U235 eq.]	9.68E-03	2.24E-04	1.19E-01	2.33E-03	4.48E-06	0.00E+00	4.33E-04	6.51E-04	0.00E+00	-8.96E-02
ETP-fw[1]	[CTUe]	1.92E+01	3.46E-02	1.53E+01	3.57E-01	8.35E-04	0.00E+00	6.64E-02	2.44E+00	0.00E+00	-1.34E+01
HTP-c[1]	[CTUh]	8.12E-10	9.57E-13	6.62E-10	1.10E-11	1.57E-13	0.00E+00	2.65E-12	5.23E-10	0.00E+00	-2.09E-10
HTP-nc[1]	[CTUh]	1.10E-08	3.79E-11	7.81E-09	3.80E-10	1.19E-12	0.00E+00	7.65E-11	3.27E-09	0.00E+00	-6.27E-09
SQP[1]	-	1.25E+00	5.07E-02	3.33E+01	4.95E-01	7.11E-04	0.00E+00	7.16E-02	5.07E-02	0.00E+00	-1.83E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 82 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	4.27E-01	5.64E-04	7.09E+00	5.70E-03	1.85E-05	0.00E+00	1.21E-03	7.48E-03	0.00E+00	-6.97E+00
PERM	[MJ]	0.00E+00	0.00E+00	4.57E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.27E-01	5.64E-04	7.09E+00	5.70E-03	1.85E-05	0.00E+00	1.21E-03	7.48E-03	0.00E+00	-6.97E+00
PENRE	[MJ]	8.69E+01	4.43E-02	1.45E+01	4.65E-01	8.60E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.44E+00
PENRM	[MJ]	8.93E-01	0.00E+00	3.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.78E+01	4.43E-02	1.45E+01	4.65E-01	8.60E-04	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.44E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.69E-02	1.08E-06	2.26E-02	1.03E-05	2.52E-08	0.00E+00	1.71E-06	2.76E-05	0.00E+00	-1.91E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 83 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	4,25E-06	1,07E-07	1,27E-05	1,04E-06	3,59E-08	0,00E+00	3,42E-06	1,28E-06	0,00E+00	-3,32E-06
NHWD	[kg]	1,32E-03	2,33E-06	2,89E-03	2,26E-05	4,19E-05	0,00E+00	7,45E-05	1,65E-02	0,00E+00	-1,16E-03
RWD	[kg]	8.39E-06	3.01E-07	2.03E-03	3.16E-06	5.66E-09	0.00E+00	5.68E-07	3.97E-07	0.00E+00	-4.34E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.41E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	9.72E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.27E-02	0.00E+00	0.00E+00	4.48E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.67E-02	0.00E+00	0.00E+00	8.88E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 84 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	4.57E-03

Results for group 17

Table 85 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	3.08E+00	2.50E-02	8.73E-01	3.00E-02	7.23E-04	0.00E+00	5.46E-03	3.14E+00	0.00E+00	-3.02E-01
GWP-fossil	kg CO_2 eq.	3.06E+00	2.50E-02	9.69E-01	2.99E-02	1.67E-04	0.00E+00	5.45E-03	3.14E+00	0.00E+00	-2.87E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-5.55E-03	0.00E+00	5.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.77E-03	9.06E-06	5.93E-04	1.19E-05	1.46E-08	0.00E+00	2.22E-06	4.35E-05	0.00E+00	-6.52E-04
ODP	kg CFC 11 eq.	5.50E-07	6.01E-09	3.72E-08	7.08E-09	5.82E-12	0.00E+00	1.28E-09	1.46E-08	0.00E+00	-1.29E-08
AP	mol H^+ eq.	1.46E-02	1.27E-04	3.52E-03	2.30E-04	2.50E-07	0.00E+00	3.09E-05	4.58E-04	0.00E+00	-1.61E-03
EP-freshwater	kg P eq.	9.79E-04	1.57E-06	3.49E-04	1.79E-06	4.74E-09	0.00E+00	3.68E-07	1.40E-05	0.00E+00	-1.96E-04
EP-marine	kg N eq.	2.43E-03	4.36E-05	6.78E-04	6.99E-05	1.09E-07	0.00E+00	1.12E-05	1.72E-04	0.00E+00	-3.71E-04
EP-terrestrial	mol N eq.	2.52E-02	4.77E-04	6.88E-03	7.68E-04	1.15E-06	0.00E+00	1.22E-04	1.90E-03	0.00E+00	-4.82E-03
POCP	kg NMVOC eq.	1.20E-02	1.42E-04	1.89E-03	2.20E-04	3.06E-07	0.00E+00	3.50E-05	5.14E-04	0.00E+00	-9.82E-04
ADPm[1]	kg Sb eq.	4.09E-05	5.78E-08	2.66E-06	6.65E-08	9.18E-11	0.00E+00	1.83E-08	3.93E-07	0.00E+00	-1.13E-06
ADPf[1]	MJ	8.37E+01	3.93E-01	1.37E+01	4.62E-01	3.32E-04	0.00E+00	8.39E-02	4.16E-01	0.00E+00	-4.10E+00
WDP[1]	m^3 world eq. deprived	1.94E+00	1.35E-03	1.69E-01	1.53E-03	3.86E-06	0.00E+00	2.75E-04	2.52E-02	0.00E+00	-4.63E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 86 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.88E-07	3.01E-09	1.94E-08	3.35E-09	2.91E-12	0.00E+00	6.03E-10	3.78E-09	0.00E+00	-1.33E-08
IRP[2]	[kBq U235 eq.]	3.44E-01	1.99E-03	1.13E-01	2.32E-03	2.24E-06	0.00E+00	4.33E-04	3.68E-03	0.00E+00	-6.74E-02
ETP-fw[1]	[CTUe]	4.48E+01	3.07E-01	1.43E+01	3.55E-01	8.82E-04	0.00E+00	6.64E-02	5.87E+00	0.00E+00	-1.01E+01
HTP-c[1]	[CTUh]	1.42E-09	8.48E-12	3.55E-10	1.09E-11	1.40E-13	0.00E+00	2.65E-12	3.61E-10	0.00E+00	-1.58E-10
HTP-nc[1]	[CTUh]	2.92E-08	3.36E-10	6.78E-09	3.78E-10	1.01E-12	0.00E+00	7.65E-11	2.44E-09	0.00E+00	-4.72E-09
SQP[1]	-	1.19E+01	4.49E-01	1.27E+01	4.92E-01	2.60E-04	0.00E+00	7.16E-02	1.62E-01	0.00E+00	-1.38E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 87 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2.77E+00	5.00E-03	3.31E+00	5.66E-03	3.56E-05	0.00E+00	1.21E-03	4.19E-02	0.00E+00	-5.25E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.51E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.77E+00	5.00E-03	3.31E+00	5.66E-03	3.56E-05	0.00E+00	1.21E-03	4.19E-02	0.00E+00	-5.25E+00
PENRE	[MJ]	8.28E+01	3.93E-01	1.37E+01	4.62E-01	3.32E-04	0.00E+00	8.39E-02	4.16E-01	0.00E+00	-4.10E+00
PENRM	[MJ]	8.75E-01	0.00E+00	6.40E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.37E+01	3.93E-01	1.37E+01	4.62E-01	3.32E-04	0.00E+00	8.39E-02	4.16E-01	0.00E+00	-4.10E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.60E+00	9.53E-06	2.34E-02	1.02E-05	1.36E-08	0.00E+00	1.71E-06	5.75E-05	0.00E+00	-1.43E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 88 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3,56E-05	9,50E-07	1,12E-05	1,03E-06	1,22E-08	0,00E+00	3,42E-06	1,13E-05	0,00E+00	-2,50E-06
NHWD	[kg]	3,72E-03	2,07E-05	2,72E-03	2,24E-05	1,54E-05	0,00E+00	7,45E-05	1,40E-02	0,00E+00	-8,77E-04
RWD	[kg]	2.61E-04	2.67E-06	2.03E-03	3.14E-06	2.21E-09	0.00E+00	5.68E-07	1.61E-06	0.00E+00	-3.25E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	3.28E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	4.54E-03	0.00E+00	0.00E+00	3.35E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	9.50E-03	0.00E+00	0.00E+00	6.74E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 89 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.51E-03

Results for group 18

Table 90 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	2.76E+00	3.15E-02	8.58E-01	3.00E-02	6.05E-04	0.00E+00	5.46E-03	3.14E+00	0.00E+00	-2.73E-01
GWP-fossil	kg CO_2 eq.	2.75E+00	3.15E-02	9.72E-01	2.99E-02	1.27E-04	0.00E+00	5.45E-03	3.14E+00	0.00E+00	-2.59E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-6.37E-03	0.00E+00	6.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	2.14E-03	1.14E-05	6.10E-04	1.19E-05	1.37E-08	0.00E+00	2.22E-06	5.45E-05	0.00E+00	-5.90E-04
ODP	kg CFC 11 eq.	7.05E-07	7.58E-09	3.78E-08	7.08E-09	5.99E-12	0.00E+00	1.28E-09	1.83E-08	0.00E+00	-1.17E-08
AP	mol H^+ eq.	1.42E-02	1.60E-04	3.54E-03	2.30E-04	2.39E-07	0.00E+00	3.09E-05	4.89E-04	0.00E+00	-1.45E-03
EP-freshwater	kg P eq.	1.25E-03	1.98E-06	3.50E-04	1.79E-06	4.22E-09	0.00E+00	3.68E-07	1.73E-05	0.00E+00	-1.77E-04
EP-marine	kg N eq.	2.39E-03	5.49E-05	6.84E-04	6.99E-05	1.02E-07	0.00E+00	1.12E-05	1.70E-04	0.00E+00	-3.35E-04
EP-terrestrial	mol N eq.	2.44E-02	6.01E-04	6.95E-03	7.69E-04	1.09E-06	0.00E+00	1.22E-04	1.92E-03	0.00E+00	-4.35E-03
POCP	kg NMVOC eq.	1.20E-02	1.80E-04	1.91E-03	2.20E-04	2.91E-07	0.00E+00	3.50E-05	5.22E-04	0.00E+00	-8.88E-04
ADPm[1]	kg Sb eq.	5.24E-05	7.28E-08	2.69E-06	6.65E-08	9.28E-11	0.00E+00	1.83E-08	4.90E-07	0.00E+00	-1.02E-06
ADPf[1]	MJ	8.25E+01	4.95E-01	1.37E+01	4.62E-01	3.59E-04	0.00E+00	8.39E-02	4.99E-01	0.00E+00	-3.70E+00
WDP[1]	m^3 world eq. deprived	1.82E+00	1.70E-03	1.71E-01	1.53E-03	3.30E-06	0.00E+00	2.75E-04	3.12E-02	0.00E+00	-4.18E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 91 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.91E-07	3.79E-09	1.97E-08	3.35E-09	3.06E-12	0.00E+00	6.03E-10	4.09E-09	0.00E+00	-1.20E-08
IRP[2]	[kBq U235 eq.]	4.42E-01	2.50E-03	1.13E-01	2.32E-03	2.22E-06	0.00E+00	4.33E-04	4.57E-03	0.00E+00	-6.09E-02
ETP-fw[1]	[CTUe]	5.24E+01	3.86E-01	1.43E+01	3.55E-01	7.33E-04	0.00E+00	6.64E-02	6.87E+00	0.00E+00	-9.16E+00
HTP-c[1]	[CTUh]	1.60E-09	1.07E-11	3.79E-10	1.09E-11	1.20E-13	0.00E+00	2.65E-12	3.14E-10	0.00E+00	-1.43E-10
HTP-nc[1]	[CTUh]	3.45E-08	4.23E-10	6.86E-09	3.78E-10	8.74E-13	0.00E+00	7.65E-11	2.20E-09	0.00E+00	-4.27E-09
SQP[1]	-	1.50E+01	5.66E-01	1.43E+01	4.92E-01	2.87E-04	0.00E+00	7.16E-02	1.94E-01	0.00E+00	-1.25E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 92 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	3.46E+00	6.30E-03	3.61E+00	5.66E-03	2.73E-05	0.00E+00	1.21E-03	5.20E-02	0.00E+00	-4.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.74E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.46E+00	6.30E-03	3.61E+00	5.66E-03	2.73E-05	0.00E+00	1.21E-03	5.20E-02	0.00E+00	-4.75E+00
PENRE	[MJ]	8.16E+01	4.95E-01	1.37E+01	4.62E-01	3.59E-04	0.00E+00	8.39E-02	4.99E-01	0.00E+00	-3.70E+00
PENRM	[MJ]	8.70E-01	0.00E+00	4.98E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.25E+01	4.95E-01	1.37E+01	4.62E-01	3.59E-04	0.00E+00	8.39E-02	4.99E-01	0.00E+00	-3.70E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	7.23E+00	1.20E-05	2.31E-02	1.02E-05	1.32E-08	0.00E+00	1.71E-06	6.62E-05	0.00E+00	-1.29E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 93 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	4,47E-05	1,20E-06	1,14E-05	1,03E-06	1,38E-08	0,00E+00	3,42E-06	1,42E-05	0,00E+00	-2,26E-06
NHWD	[kg]	4,43E-03	2,61E-05	2,74E-03	2,24E-05	1,70E-05	0,00E+00	7,45E-05	1,33E-02	0,00E+00	-7,93E-04
RWD	[kg]	3.35E-04	3.36E-06	2.03E-03	3.14E-06	2.38E-09	0.00E+00	5.68E-07	1.97E-06	0.00E+00	-2.93E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.03E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	3.74E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	5.05E-03	0.00E+00	0.00E+00	3.02E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.06E-02	0.00E+00	0.00E+00	6.11E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 94 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.74E-03

Results for group 19

Table 95 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	3.28E+00	3.87E-02	7.30E-01	3.01E-02	5.57E-04	0.00E+00	5.46E-03	3.11E+00	0.00E+00	-3.75E-01
GWP-fossil	kg CO_2 eq.	3.23E+00	3.86E-02	1.00E+00	3.01E-02	5.69E-05	0.00E+00	5.45E-03	3.11E+00	0.00E+00	-3.56E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.40E-02	0.00E+00	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.12E-04	1.40E-05	7.63E-04	1.19E-05	1.96E-08	0.00E+00	2.22E-06	2.68E-05	0.00E+00	-8.09E-04
ODP	kg CFC 11 eq.	7.84E-08	9.30E-09	4.27E-08	7.11E-09	1.09E-11	0.00E+00	1.28E-09	9.14E-09	0.00E+00	-1.60E-08
AP	mol H^+ eq.	1.12E-02	1.96E-04	3.73E-03	2.31E-04	3.60E-07	0.00E+00	3.09E-05	4.69E-04	0.00E+00	-1.99E-03
EP-freshwater	kg P eq.	3.13E-04	2.43E-06	3.60E-04	1.80E-06	5.13E-09	0.00E+00	3.68E-07	8.37E-06	0.00E+00	-2.44E-04
EP-marine	kg N eq.	2.16E-03	6.74E-05	7.39E-04	7.02E-05	1.45E-07	0.00E+00	1.12E-05	2.36E-04	0.00E+00	-4.60E-04
EP-terrestrial	mol N eq.	2.08E-02	7.37E-04	7.56E-03	7.72E-04	1.57E-06	0.00E+00	1.22E-04	2.24E-03	0.00E+00	-5.97E-03
POCP	kg NMVOC eq.	8.89E-03	2.20E-04	2.14E-03	2.21E-04	4.35E-07	0.00E+00	3.50E-05	5.81E-04	0.00E+00	-1.22E-03
ADPm[1]	kg Sb eq.	5.71E-06	8.94E-08	2.96E-06	6.68E-08	1.61E-10	0.00E+00	1.83E-08	2.26E-07	0.00E+00	-1.40E-06
ADPf[1]	MJ	6.34E+01	6.07E-01	1.43E+01	4.64E-01	7.17E-04	0.00E+00	8.39E-02	2.97E-01	0.00E+00	-5.08E+00
WDP[1]	m^3 world eq. deprived	1.57E+00	2.09E-03	1.91E-01	1.53E-03	3.36E-06	0.00E+00	2.75E-04	1.65E-02	0.00E+00	-5.74E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 96 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.58E-07	4.65E-09	2.27E-08	3.37E-09	5.77E-12	0.00E+00	6.03E-10	3.39E-09	0.00E+00	-1.64E-08
IRP[2]	[kBq U235 eq.]	7.87E-02	3.07E-03	1.17E-01	2.33E-03	3.69E-06	0.00E+00	4.33E-04	2.24E-03	0.00E+00	-8.36E-02
ETP-fw[1]	[CTUe]	3.53E+01	4.74E-01	1.50E+01	3.56E-01	6.52E-04	0.00E+00	6.64E-02	3.60E+00	0.00E+00	-1.26E+01
HTP-c[1]	[CTUh]	8.98E-10	1.31E-11	5.91E-10	1.10E-11	1.24E-13	0.00E+00	2.65E-12	4.76E-10	0.00E+00	-1.95E-10
HTP-nc[1]	[CTUh]	1.40E-08	5.19E-10	7.57E-09	3.80E-10	9.48E-13	0.00E+00	7.65E-11	3.61E-09	0.00E+00	-5.85E-09
SQP[1]	-	3.65E+00	6.95E-01	2.85E+01	4.94E-01	5.94E-04	0.00E+00	7.16E-02	9.35E-02	0.00E+00	-1.71E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 97 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	8.28E-01	7.73E-03	6.21E+00	5.69E-03	1.32E-05	0.00E+00	1.21E-03	2.53E-02	0.00E+00	-6.51E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	8.28E-01	7.73E-03	6.22E+00	5.69E-03	1.32E-05	0.00E+00	1.21E-03	2.53E-02	0.00E+00	-6.51E+00
PENRE	[MJ]	6.26E+01	6.07E-01	1.43E+01	4.64E-01	7.17E-04	0.00E+00	8.39E-02	2.97E-01	0.00E+00	-5.08E+00
PENRM	[MJ]	8.38E-01	0.00E+00	2.79E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.34E+01	6.07E-01	1.43E+01	4.64E-01	7.17E-04	0.00E+00	8.39E-02	2.97E-01	0.00E+00	-5.08E+00
SM	[kg]	3.68E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.31E+00	1.47E-05	2.24E-02	1.03E-05	2.07E-08	0.00E+00	1.71E-06	4.77E-05	0.00E+00	-1.68E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 98 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	1,47E-06	1,24E-05	1,03E-06	3,01E-08	0,00E+00	3,42E-06	1,40E-06	0,00E+00	-3,10E-06
NHWD	[kg]	5,41E-03	3,20E-05	2,85E-03	2,25E-05	3,50E-05	0,00E+00	7,45E-05	1,80E-02	0,00E+00	-1,09E-03
RWD	[kg]	1.91E-04	4.12E-06	2.03E-03	3.16E-06	4.72E-09	0.00E+00	5.68E-07	1.22E-06	0.00E+00	-3.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	9.25E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	8.15E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.06E-02	0.00E+00	0.00E+00	3.94E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.24E-02	0.00E+00	0.00E+00	7.84E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 99 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.83E-03

Results for group 20

Table 100 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.11E+00	6.08E-02	7.29E-01	3.01E-02	9.12E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.45E-01
GWP-fossil	kg CO_2 eq.	1.04E+00	6.07E-02	1.00E+00	3.01E-02	1.56E-04	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.22E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.44E-02	0.00E+00	1.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.13E-04	2.20E-05	7.67E-04	1.19E-05	2.48E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.60E-04
ODP	kg CFC 11 eq.	6.32E-08	1.46E-08	4.28E-08	7.12E-09	1.22E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.89E-08
AP	mol H^+ eq.	4.25E-03	3.09E-04	3.73E-03	2.31E-04	4.42E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.36E-03
EP-freshwater	kg P eq.	3.11E-04	3.81E-06	3.60E-04	1.80E-06	7.10E-09	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.89E-04
EP-marine	kg N eq.	1.09E-03	1.06E-04	7.40E-04	7.03E-05	1.83E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.45E-04
EP-terrestrial	mol N eq.	9.83E-03	1.16E-03	7.57E-03	7.72E-04	1.97E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.07E-03
POCP	kg NMVOC eq.	3.33E-03	3.46E-04	2.14E-03	2.21E-04	5.37E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	7.34E-06	1.40E-07	2.96E-06	6.68E-08	1.85E-10	0.00E+00	1.83E-08	6.26E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	2.07E+01	9.54E-01	1.43E+01	4.64E-01	7.69E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.03E+00
WDP[1]	m^3 world eq. deprived	3.23E-01	3.29E-03	1.92E-01	1.54E-03	5.16E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.80E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 101 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.38E-08	7.32E-09	2.28E-08	3.37E-09	6.35E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.94E-08
IRP[2]	[kBq U235 eq.]	1.40E-01	4.83E-03	1.17E-01	2.33E-03	4.32E-06	0.00E+00	4.33E-04	6.71E-04	0.00E+00	-9.92E-02
ETP-fw[1]	[CTUe]	1.58E+01	7.45E-01	1.51E+01	3.56E-01	1.09E-03	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.50E-10	2.06E-11	5.94E-10	1.10E-11	1.89E-13	0.00E+00	2.65E-12	4.28E-10	0.00E+00	-2.32E-10
HTP-nc[1]	[CTUh]	1.14E-08	8.16E-10	7.58E-09	3.80E-10	1.40E-12	0.00E+00	7.65E-11	2.78E-09	0.00E+00	-6.93E-09
SQP[1]	-	5.69E+00	1.09E+00	2.87E+01	4.94E-01	6.27E-04	0.00E+00	7.16E-02	4.98E-02	0.00E+00	-2.03E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 102 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.14E+00	1.21E-02	6.25E+00	5.69E-03	3.41E-05	0.00E+00	1.21E-03	7.68E-03	0.00E+00	-7.71E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.14E+00	1.21E-02	6.25E+00	5.69E-03	3.41E-05	0.00E+00	1.21E-03	7.68E-03	0.00E+00	-7.71E+00
PENRE	[MJ]	1.98E+01	9.54E-01	1.43E+01	4.64E-01	7.69E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.03E+00
PENRM	[MJ]	8.25E-01	0.00E+00	6.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.07E+01	9.54E-01	1.43E+01	4.64E-01	7.69E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.03E+00
SM	[kg]	8.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	4.68E-01	2.32E-05	2.32E-02	1.03E-05	2.49E-08	0.00E+00	1.71E-06	2.76E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 103 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,38E-05	2,31E-06	1,24E-05	1,03E-06	3,11E-08	0,00E+00	3,42E-06	9,53E-07	0,00E+00	-3,68E-06
NHWD	[kg]	9,82E-03	5,03E-05	2,85E-03	2,25E-05	3,70E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.13E-05	6.48E-06	2.03E-03	3.16E-06	5.08E-09	0.00E+00	5.68E-07	4.04E-07	0.00E+00	-4.81E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	8.40E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.11E-02	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.34E-02	0.00E+00	0.00E+00	9.83E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 104 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.93E-03

Results for group 21

Table 105 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.01E+00	4.41E-02	7.14E-01	3.01E-02	6.58E-04	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.42E-01
GWP-fossil	kg CO_2 eq.	9.41E-01	4.40E-02	1.01E+00	3.01E-02	7.84E-05	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.20E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.51E-02	0.00E+00	1.51E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.85E-04	1.60E-05	7.83E-04	1.20E-05	2.19E-08	0.00E+00	2.22E-06	6.48E-06	0.00E+00	-9.54E-04
ODP	kg CFC 11 eq.	6.36E-08	1.06E-08	4.34E-08	7.12E-09	1.19E-11	0.00E+00	1.28E-09	2.19E-09	0.00E+00	-1.88E-08
AP	mol H^+ eq.	3.86E-03	2.24E-04	3.76E-03	2.31E-04	4.00E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.35E-03
EP-freshwater	kg P eq.	3.03E-04	2.76E-06	3.62E-04	1.80E-06	5.84E-09	0.00E+00	3.68E-07	2.99E-06	0.00E+00	-2.88E-04
EP-marine	kg N eq.	1.03E-03	7.68E-05	7.46E-04	7.03E-05	1.62E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.42E-04
EP-terrestrial	mol N eq.	9.09E-03	8.40E-04	7.64E-03	7.73E-04	1.76E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.03E-03
POCP	kg NMVOC eq.	2.96E-03	2.51E-04	2.17E-03	2.21E-04	4.84E-07	0.00E+00	3.50E-05	4.64E-04	0.00E+00	-1.43E-03
ADPm[1]	kg Sb eq.	6.95E-06	1.02E-07	2.99E-06	6.69E-08	1.77E-10	0.00E+00	1.83E-08	6.29E-08	0.00E+00	-1.65E-06
ADPf[1]	MJ	1.67E+01	6.91E-01	1.43E+01	4.64E-01	7.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
WDP[1]	m^3 world eq. deprived	2.72E-01	2.38E-03	1.94E-01	1.54E-03	3.91E-06	0.00E+00	2.75E-04	4.83E-03	0.00E+00	-6.77E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 106 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.06E-08	5.30E-09	2.31E-08	3.37E-09	6.28E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.93E-08
IRP[2]	[kBq U235 eq.]	1.44E-01	3.50E-03	1.18E-01	2.33E-03	4.07E-06	0.00E+00	4.33E-04	6.73E-04	0.00E+00	-9.87E-02
ETP-fw[1]	[CTUe]	1.52E+01	5.40E-01	1.51E+01	3.57E-01	7.75E-04	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.48E+01
HTP-c[1]	[CTUh]	7.52E-10	1.49E-11	6.19E-10	1.10E-11	1.45E-13	0.00E+00	2.65E-12	4.51E-10	0.00E+00	-2.30E-10
HTP-nc[1]	[CTUh]	1.11E-08	5.91E-10	7.66E-09	3.80E-10	1.09E-12	0.00E+00	7.65E-11	2.79E-09	0.00E+00	-6.90E-09
SQP[1]	-	5.86E+00	7.91E-01	3.03E+01	4.95E-01	6.42E-04	0.00E+00	7.16E-02	5.01E-02	0.00E+00	-2.02E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 107 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	8.80E-03	6.55E+00	5.69E-03	1.78E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PERM	[MJ]	0.00E+00	0.00E+00	4.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	8.80E-03	6.55E+00	5.69E-03	1.78E-05	0.00E+00	1.21E-03	7.71E-03	0.00E+00	-7.67E+00
PENRE	[MJ]	1.58E+01	6.91E-01	1.43E+01	4.64E-01	7.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
PENRM	[MJ]	8.16E-01	0.00E+00	3.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.67E+01	6.91E-01	1.43E+01	4.64E-01	7.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.99E+00
SM	[kg]	8.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.46E-01	1.68E-05	2.26E-02	1.03E-05	2.29E-08	0.00E+00	1.71E-06	2.78E-05	0.00E+00	-2.10E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 108 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,41E-05	1,67E-06	1,25E-05	1,04E-06	3,24E-08	0,00E+00	3,42E-06	1,01E-06	0,00E+00	-3,66E-06
NHWD	[kg]	1,02E-02	3,64E-05	2,87E-03	2,25E-05	3,79E-05	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,28E-03
RWD	[kg]	5.22E-05	4.70E-06	2.03E-03	3.16E-06	5.12E-09	0.00E+00	5.68E-07	4.17E-07	0.00E+00	-4.79E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	8.78E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.15E-02	0.00E+00	0.00E+00	4.94E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.41E-02	0.00E+00	0.00E+00	9.76E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 109 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	4.12E-03

Results for group 22

Table 110 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	4.20E+00	2.44E-03	1.89E-02	3.09E-02	2.19E-03	0.00E+00	5.46E-03	3.16E+00	0.00E+00	-4.06E-01
GWP-fossil	kg CO_2 eq.	4.16E+00	2.44E-03	1.18E+00	3.08E-02	2.03E-04	0.00E+00	5.45E-03	3.16E+00	0.00E+00	-3.85E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-5.83E-02	0.00E+00	5.83E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	4.99E-04	8.84E-07	1.63E-03	1.22E-05	7.97E-08	0.00E+00	2.22E-06	6.00E-06	0.00E+00	-8.75E-04
ODP	kg CFC 11 eq.	2.11E-08	5.87E-10	7.03E-08	7.30E-09	4.47E-11	0.00E+00	1.28E-09	2.04E-09	0.00E+00	-1.73E-08
AP	mol H^+ eq.	1.61E-02	1.24E-05	4.80E-03	2.37E-04	1.47E-06	0.00E+00	3.09E-05	3.51E-04	0.00E+00	-2.15E-03
EP-freshwater	kg P eq.	6.11E-05	1.53E-07	4.18E-04	1.85E-06	2.07E-08	0.00E+00	3.68E-07	2.94E-06	0.00E+00	-2.64E-04
EP-marine	kg N eq.	2.62E-03	4.25E-06	1.05E-03	7.20E-05	5.88E-07	0.00E+00	1.12E-05	1.79E-04	0.00E+00	-4.97E-04
EP-terrestrial	mol N eq.	2.83E-02	4.65E-05	1.10E-02	7.92E-04	6.41E-06	0.00E+00	1.22E-04	1.84E-03	0.00E+00	-6.45E-03
POCP	kg NMVOC eq.	1.18E-02	1.39E-05	3.40E-03	2.26E-04	1.78E-06	0.00E+00	3.50E-05	4.85E-04	0.00E+00	-1.31E-03
ADPm[1]	kg Sb eq.	1.05E-06	5.64E-09	4.43E-06	6.85E-08	6.63E-10	0.00E+00	1.83E-08	6.01E-08	0.00E+00	-1.51E-06
ADPf[1]	MJ	8.84E+01	3.83E-02	1.74E+01	4.76E-01	2.97E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
WDP[1]	m^3 world eq. deprived	2.38E+00	1.32E-04	3.05E-01	1.57E-03	1.34E-05	0.00E+00	2.75E-04	4.57E-03	0.00E+00	-6.21E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 111 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.80E-07	2.94E-10	3.98E-08	3.45E-09	2.38E-11	0.00E+00	6.03E-10	2.69E-09	0.00E+00	-1.77E-08
IRP[2]	[kBq U235 eq.]	7.86E-03	1.94E-04	1.39E-01	2.39E-03	1.51E-05	0.00E+00	4.33E-04	6.46E-04	0.00E+00	-9.05E-02
ETP-fw[1]	[CTUe]	1.88E+01	2.99E-02	1.89E+01	3.65E-01	2.56E-03	0.00E+00	6.64E-02	2.47E+00	0.00E+00	-1.36E+01
HTP-c[1]	[CTUh]	7.99E-10	8.28E-13	1.77E-09	1.12E-11	4.95E-13	0.00E+00	2.65E-12	4.81E-10	0.00E+00	-2.11E-10
HTP-nc[1]	[CTUh]	1.06E-08	3.28E-11	1.15E-08	3.90E-10	3.79E-12	0.00E+00	7.65E-11	3.26E-09	0.00E+00	-6.33E-09
SQP[1]	-	1.14E+00	4.39E-02	1.08E+02	5.07E-01	2.46E-03	0.00E+00	7.16E-02	5.03E-02	0.00E+00	-1.85E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 112 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	4.08E-01	4.88E-04	2.07E+01	5.83E-03	4.77E-05	0.00E+00	1.21E-03	7.43E-03	0.00E+00	-7.03E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.08E-01	4.88E-04	2.07E+01	5.83E-03	4.77E-05	0.00E+00	1.21E-03	7.43E-03	0.00E+00	-7.03E+00
PENRE	[MJ]	8.75E+01	3.83E-02	1.74E+01	4.76E-01	2.97E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
PENRM	[MJ]	9.11E-01	0.00E+00	1.04E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.84E+01	3.83E-02	1.74E+01	4.76E-01	2.97E-03	0.00E+00	8.39E-02	1.31E-01	0.00E+00	-5.50E+00
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.22E-02	9.30E-07	2.32E-02	1.05E-05	8.48E-08	0.00E+00	1.71E-06	2.71E-05	0.00E+00	-1.92E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 113 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3,63E-06	9,27E-08	1,82E-05	1,06E-06	1,25E-07	0,00E+00	3,42E-06	1,18E-06	0,00E+00	-3,35E-06
NHWD	[kg]	1,21E-03	2,02E-06	3,51E-03	2,31E-05	1,45E-04	0,00E+00	7,45E-05	1,65E-02	0,00E+00	-1,17E-03
RWD	[kg]	8.29E-06	2.60E-07	2.03E-03	3.24E-06	1.95E-08	0.00E+00	5.68E-07	3.72E-07	0.00E+00	-4.36E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	6.07E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	3.38E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	4.40E-02	0.00E+00	0.00E+00	4.50E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	9.27E-02	0.00E+00	0.00E+00	8.99E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 114 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.59E-02

Results for group 23

Table 115 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.71E+00	5.79E-02	6.70E-01	3.02E-02	6.85E-04	0.00E+00	5.46E-03	2.82E+00	0.00E+00	-4.03E-01
GWP-fossil	kg CO_2 eq.	1.67E+00	5.78E-02	1.02E+00	3.01E-02	8.20E-05	0.00E+00	5.45E-03	2.82E+00	0.00E+00	-3.83E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.78E-02	0.00E+00	1.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.05E-03	2.10E-05	8.36E-04	1.20E-05	2.45E-08	0.00E+00	2.22E-06	6.28E-06	0.00E+00	-8.70E-04
ODP	kg CFC 11 eq.	5.84E-08	1.39E-08	4.51E-08	7.13E-09	1.36E-11	0.00E+00	1.28E-09	2.11E-09	0.00E+00	-1.72E-08
AP	mol H^+ eq.	6.78E-03	2.94E-04	3.82E-03	2.31E-04	4.48E-07	0.00E+00	3.09E-05	3.31E-04	0.00E+00	-2.14E-03
EP-freshwater	kg P eq.	3.59E-04	3.63E-06	3.65E-04	1.81E-06	6.46E-09	0.00E+00	3.68E-07	2.90E-06	0.00E+00	-2.62E-04
EP-marine	kg N eq.	1.45E-03	1.01E-04	7.65E-04	7.04E-05	1.80E-07	0.00E+00	1.12E-05	1.62E-04	0.00E+00	-4.94E-04
EP-terrestrial	mol N eq.	1.43E-02	1.10E-03	7.85E-03	7.74E-04	1.96E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.41E-03
POCP	kg NMVOC eq.	5.43E-03	3.29E-04	2.25E-03	2.21E-04	5.43E-07	0.00E+00	3.50E-05	4.61E-04	0.00E+00	-1.31E-03
ADPm[1]	kg Sb eq.	1.07E-05	1.34E-07	3.08E-06	6.70E-08	2.00E-10	0.00E+00	1.83E-08	6.08E-08	0.00E+00	-1.50E-06
ADPf[1]	MJ	4.53E+01	9.08E-01	1.45E+01	4.65E-01	9.03E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.47E+00
WDP[1]	m^3 world eq. deprived	6.18E-01	3.13E-03	2.01E-01	1.54E-03	3.97E-06	0.00E+00	2.75E-04	4.66E-03	0.00E+00	-6.17E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 116 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	7.38E-08	6.96E-09	2.42E-08	3.37E-09	7.24E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.77E-08
IRP[2]	[kBq U235 eq.]	1.10E-01	4.59E-03	1.19E-01	2.33E-03	4.67E-06	0.00E+00	4.33E-04	6.50E-04	0.00E+00	-9.00E-02
ETP-fw[1]	[CTUe]	2.02E+01	7.09E-01	1.54E+01	3.57E-01	7.80E-04	0.00E+00	6.64E-02	6.75E-01	0.00E+00	-1.35E+01
HTP-c[1]	[CTUh]	7.41E-10	1.96E-11	6.92E-10	1.10E-11	1.52E-13	0.00E+00	2.65E-12	4.11E-10	0.00E+00	-2.10E-10
HTP-nc[1]	[CTUh]	1.46E-08	7.76E-10	7.91E-09	3.81E-10	1.16E-12	0.00E+00	7.65E-11	2.64E-09	0.00E+00	-6.29E-09
SQP[1]	-	4.81E+00	1.04E+00	3.53E+01	4.95E-01	7.51E-04	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-1.84E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 117 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.07E+00	1.16E-02	7.45E+00	5.70E-03	1.82E-05	0.00E+00	1.21E-03	7.42E-03	0.00E+00	-6.99E+00
PERM	[MJ]	0.00E+00	0.00E+00	4.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.07E+00	1.16E-02	7.46E+00	5.70E-03	1.82E-05	0.00E+00	1.21E-03	7.42E-03	0.00E+00	-6.99E+00
PENRE	[MJ]	4.45E+01	9.08E-01	1.45E+01	4.65E-01	9.03E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.47E+00
PENRM	[MJ]	8.27E-01	0.00E+00	3.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	4.53E+01	9.08E-01	1.45E+01	4.65E-01	9.03E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.47E+00
SM	[kg]	4.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	1.49E+00	2.20E-05	2.25E-02	1.03E-05	2.55E-08	0.00E+00	1.71E-06	2.72E-05	0.00E+00	-1.92E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 118 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,27E-05	2,20E-06	1,29E-05	1,04E-06	3,81E-08	0,00E+00	3,42E-06	9,14E-07	0,00E+00	-3,33E-06
NHWD	[kg]	7,15E-03	4,78E-05	2,91E-03	2,26E-05	4,44E-05	0,00E+00	7,45E-05	1,80E-02	0,00E+00	-1,17E-03
RWD	[kg]	4.17E-05	6.17E-06	2.03E-03	3.16E-06	5.98E-09	0.00E+00	5.68E-07	3.99E-07	0.00E+00	-4.37E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.23E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.03E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.34E-02	0.00E+00	0.00E+00	4.49E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.83E-02	0.00E+00	0.00E+00	8.93E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 119 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	4.85E-03

Results for group 24

Table 120 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.58E+00	6.27E-02	7.34E-01	3.01E-02	5.15E-04	0.00E+00	5.46E-03	2.86E+00	0.00E+00	-4.16E-01
GWP-fossil	kg CO_2 eq.	1.53E+00	6.26E-02	1.00E+00	3.01E-02	4.89E-05	0.00E+00	5.45E-03	2.86E+00	0.00E+00	-3.95E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.38E-02	0.00E+00	1.38E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.01E-03	2.27E-05	7.58E-04	1.19E-05	1.88E-08	0.00E+00	2.22E-06	6.31E-06	0.00E+00	-8.97E-04
ODP	kg CFC 11 eq.	5.89E-08	1.51E-08	4.26E-08	7.11E-09	1.05E-11	0.00E+00	1.28E-09	2.13E-09	0.00E+00	-1.77E-08
AP	mol H^+ eq.	6.21E-03	3.19E-04	3.72E-03	2.31E-04	3.46E-07	0.00E+00	3.09E-05	3.31E-04	0.00E+00	-2.21E-03
EP-freshwater	kg P eq.	3.48E-04	3.93E-06	3.60E-04	1.80E-06	4.87E-09	0.00E+00	3.68E-07	2.90E-06	0.00E+00	-2.70E-04
EP-marine	kg N eq.	1.37E-03	1.09E-04	7.37E-04	7.02E-05	1.38E-07	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.09E-04
EP-terrestrial	mol N eq.	1.33E-02	1.20E-03	7.54E-03	7.72E-04	1.51E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.61E-03
POCP	kg NMVOC eq.	4.99E-03	3.57E-04	2.13E-03	2.21E-04	4.18E-07	0.00E+00	3.50E-05	4.62E-04	0.00E+00	-1.35E-03
ADPm[1]	kg Sb eq.	9.81E-06	1.45E-07	2.95E-06	6.68E-08	1.56E-10	0.00E+00	1.83E-08	6.08E-08	0.00E+00	-1.55E-06
ADPf[1]	MJ	4.02E+01	9.84E-01	1.43E+01	4.64E-01	6.99E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
WDP[1]	m^3 world eq. deprived	5.52E-01	3.39E-03	1.91E-01	1.53E-03	3.12E-06	0.00E+00	2.75E-04	4.69E-03	0.00E+00	-6.36E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 121 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	6.94E-08	7.55E-09	2.26E-08	3.37E-09	5.61E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.82E-08
IRP[2]	[kBq U235 eq.]	1.17E-01	4.98E-03	1.17E-01	2.33E-03	3.57E-06	0.00E+00	4.33E-04	6.52E-04	0.00E+00	-9.27E-02
ETP-fw[1]	[CTUe]	1.91E+01	7.69E-01	1.50E+01	3.56E-01	5.99E-04	0.00E+00	6.64E-02	6.83E-01	0.00E+00	-1.39E+01
HTP-c[1]	[CTUh]	7.36E-10	2.13E-11	5.84E-10	1.09E-11	1.16E-13	0.00E+00	2.65E-12	3.88E-10	0.00E+00	-2.16E-10
HTP-nc[1]	[CTUh]	1.38E-08	8.41E-10	7.55E-09	3.80E-10	8.89E-13	0.00E+00	7.65E-11	2.66E-09	0.00E+00	-6.48E-09
SQP[1]	-	4.97E+00	1.13E+00	2.81E+01	4.94E-01	5.80E-04	0.00E+00	7.16E-02	4.91E-02	0.00E+00	-1.90E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 122 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.08E+00	1.25E-02	6.13E+00	5.69E-03	1.14E-05	0.00E+00	1.21E-03	7.45E-03	0.00E+00	-7.21E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.75E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.08E+00	1.25E-02	6.13E+00	5.69E-03	1.14E-05	0.00E+00	1.21E-03	7.45E-03	0.00E+00	-7.21E+00
PENRE	[MJ]	3.94E+01	9.84E-01	1.43E+01	4.64E-01	6.99E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
PENRM	[MJ]	8.37E-01	0.00E+00	2.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	4.02E+01	9.84E-01	1.43E+01	4.64E-01	6.99E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
SM	[kg]	5.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	1.30E+00	2.39E-05	2.24E-02	1.03E-05	1.99E-08	0.00E+00	1.71E-06	2.70E-05	0.00E+00	-1.97E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 123 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,27E-05	2,38E-06	1,24E-05	1,03E-06	2,95E-08	0,00E+00	3,42E-06	8,60E-07	0,00E+00	-3,44E-06
NHWD	[kg]	7,70E-03	5,19E-05	2,85E-03	2,25E-05	3,42E-05	0,00E+00	7,45E-05	1,84E-02	0,00E+00	-1,20E-03
RWD	[kg]	4.40E-05	6.68E-06	2.03E-03	3.16E-06	4.61E-09	0.00E+00	5.68E-07	3.85E-07	0.00E+00	-4.48E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.52E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.98E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.04E-02	0.00E+00	0.00E+00	4.61E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.19E-02	0.00E+00	0.00E+00	9.21E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 124 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.75E-03

Results for group 25

Table 125 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.42E+00	1.86E-02	7.49E-01	3.01E-02	5.17E-04	0.00E+00	5.46E-03	2.85E+00	0.00E+00	-4.04E-01
GWP-fossil	kg CO_2 eq.	1.36E+00	1.86E-02	9.98E-01	3.00E-02	8.18E-05	0.00E+00	5.45E-03	2.85E+00	0.00E+00	-3.84E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.28E-02	0.00E+00	1.28E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.81E-04	6.74E-06	7.40E-04	1.19E-05	1.81E-08	0.00E+00	2.22E-06	6.38E-06	0.00E+00	-8.73E-04
ODP	kg CFC 11 eq.	6.19E-08	4.47E-09	4.20E-08	7.11E-09	9.81E-12	0.00E+00	1.28E-09	2.15E-09	0.00E+00	-1.72E-08
AP	mol H^+ eq.	5.67E-03	9.45E-05	3.70E-03	2.31E-04	3.26E-07	0.00E+00	3.09E-05	3.31E-04	0.00E+00	-2.15E-03
EP-freshwater	kg P eq.	3.39E-04	1.17E-06	3.59E-04	1.80E-06	4.87E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.63E-04
EP-marine	kg N eq.	1.28E-03	3.24E-05	7.31E-04	7.02E-05	1.31E-07	0.00E+00	1.12E-05	1.62E-04	0.00E+00	-4.96E-04
EP-terrestrial	mol N eq.	1.22E-02	3.55E-04	7.47E-03	7.72E-04	1.43E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.43E-03
POCP	kg NMVOC eq.	4.36E-03	1.06E-04	2.11E-03	2.20E-04	3.94E-07	0.00E+00	3.50E-05	4.62E-04	0.00E+00	-1.31E-03
ADPm[1]	kg Sb eq.	9.85E-06	4.30E-08	2.92E-06	6.68E-08	1.43E-10	0.00E+00	1.83E-08	6.26E-08	0.00E+00	-1.51E-06
ADPf[1]	MJ	3.31E+01	2.92E-01	1.42E+01	4.64E-01	6.51E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.48E+00
WDP[1]	m^3 world eq. deprived	4.81E-01	1.01E-03	1.89E-01	1.53E-03	2.80E-06	0.00E+00	2.75E-04	4.72E-03	0.00E+00	-6.19E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 126 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	6.47E-08	2.24E-09	2.23E-08	3.36E-09	5.22E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.77E-08
IRP[2]	[kBq U235 eq.]	1.24E-01	1.48E-03	1.17E-01	2.33E-03	3.44E-06	0.00E+00	4.33E-04	6.64E-04	0.00E+00	-9.02E-02
ETP-fw[1]	[CTUe]	1.86E+01	2.28E-01	1.49E+01	3.56E-01	5.69E-04	0.00E+00	6.64E-02	6.88E-01	0.00E+00	-1.35E+01
HTP-c[1]	[CTUh]	7.65E-10	6.31E-12	5.60E-10	1.09E-11	1.12E-13	0.00E+00	2.65E-12	5.14E-10	0.00E+00	-2.11E-10
HTP-nc[1]	[CTUh]	1.38E-08	2.50E-10	7.46E-09	3.80E-10	8.58E-13	0.00E+00	7.65E-11	2.73E-09	0.00E+00	-6.31E-09
SQP[1]	-	5.32E+00	3.34E-01	2.64E+01	4.94E-01	5.44E-04	0.00E+00	7.16E-02	5.04E-02	0.00E+00	-1.84E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 127 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.11E+00	3.72E-03	5.83E+00	5.69E-03	1.74E-05	0.00E+00	1.21E-03	7.60E-03	0.00E+00	-7.01E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.11E+00	3.72E-03	5.83E+00	5.69E-03	1.74E-05	0.00E+00	1.21E-03	7.60E-03	0.00E+00	-7.01E+00
PENRE	[MJ]	3.23E+01	2.92E-01	1.42E+01	4.64E-01	6.52E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.48E+00
PENRM	[MJ]	7.88E-01	0.00E+00	3.70E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	3.31E+01	2.92E-01	1.42E+01	4.64E-01	6.52E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.48E+00
SM	[kg]	6.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	8.46E-01	7.09E-06	2.25E-02	1.03E-05	1.81E-08	0.00E+00	1.71E-06	2.83E-05	0.00E+00	-1.94E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 128 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,40E-05	7,07E-07	1,22E-05	1,03E-06	2,76E-08	0,00E+00	3,42E-06	1,16E-06	0,00E+00	-3,34E-06
NHWD	[kg]	8,42E-03	1,54E-05	2,83E-03	2,25E-05	3,22E-05	0,00E+00	7,45E-05	1,80E-02	0,00E+00	-1,17E-03
RWD	[kg]	4.47E-05	1.98E-06	2.03E-03	3.15E-06	4.34E-09	0.00E+00	5.68E-07	4.55E-07	0.00E+00	-4.42E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.47E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	9.73E-03	0.00E+00	0.00E+00	4.55E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.05E-02	0.00E+00	0.00E+00	8.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 129 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.50E-03

Results for group 26

Table 130 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.34E+00	7.04E-02	3.03E-01	3.06E-02	1.55E-03	0.00E+00	5.46E-03	2.94E+00	0.00E+00	-4.21E-01
GWP-fossil	kg CO_2 eq.	1.28E+00	7.03E-02	1.11E+00	3.05E-02	1.68E-04	0.00E+00	5.45E-03	2.94E+00	0.00E+00	-3.99E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-4.06E-02	0.00E+00	4.06E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.02E-03	2.55E-05	1.28E-03	1.21E-05	5.58E-08	0.00E+00	2.22E-06	6.58E-06	0.00E+00	-9.07E-04
ODP	kg CFC 11 eq.	6.90E-08	1.69E-08	5.93E-08	7.22E-09	3.11E-11	0.00E+00	1.28E-09	2.21E-09	0.00E+00	-1.79E-08
AP	mol H^+ eq.	5.54E-03	3.57E-04	4.37E-03	2.34E-04	1.02E-06	0.00E+00	3.09E-05	3.32E-04	0.00E+00	-2.23E-03
EP-freshwater	kg P eq.	3.43E-04	4.41E-06	3.95E-04	1.83E-06	1.46E-08	0.00E+00	3.68E-07	3.09E-06	0.00E+00	-2.73E-04
EP-marine	kg N eq.	1.25E-03	1.23E-04	9.24E-04	7.13E-05	4.10E-07	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.15E-04
EP-terrestrial	mol N eq.	1.20E-02	1.34E-03	9.61E-03	7.84E-04	4.47E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.68E-03
POCP	kg NMVOC eq.	4.17E-03	4.01E-04	2.90E-03	2.24E-04	1.24E-06	0.00E+00	3.50E-05	4.63E-04	0.00E+00	-1.36E-03
ADPm[1]	kg Sb eq.	1.05E-05	1.63E-07	3.85E-06	6.79E-08	4.59E-10	0.00E+00	1.83E-08	6.56E-08	0.00E+00	-1.57E-06
ADPf[1]	MJ	2.86E+01	1.10E+00	1.61E+01	4.71E-01	2.06E-03	0.00E+00	8.39E-02	1.34E-01	0.00E+00	-5.70E+00
WDP[1]	m^3 world eq. deprived	4.85E-01	3.80E-03	2.60E-01	1.56E-03	9.14E-06	0.00E+00	2.75E-04	4.86E-03	0.00E+00	-6.43E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 131 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	6.30E-08	8.47E-09	3.30E-08	3.42E-09	1.65E-11	0.00E+00	6.03E-10	2.66E-09	0.00E+00	-1.84E-08
IRP[2]	[kBq U235 eq.]	1.32E-01	5.59E-03	1.30E-01	2.36E-03	1.06E-05	0.00E+00	4.33E-04	6.90E-04	0.00E+00	-9.38E-02
ETP-fw[1]	[CTUe]	1.93E+01	8.63E-01	1.74E+01	3.62E-01	1.78E-03	0.00E+00	6.64E-02	7.17E-01	0.00E+00	-1.41E+01
HTP-c[1]	[CTUh]	8.24E-10	2.39E-11	1.30E-09	1.11E-11	3.45E-13	0.00E+00	2.65E-12	6.56E-10	0.00E+00	-2.19E-10
HTP-nc[1]	[CTUh]	1.43E-08	9.44E-10	9.96E-09	3.86E-10	2.64E-12	0.00E+00	7.65E-11	2.89E-09	0.00E+00	-6.56E-09
SQP[1]	-	5.62E+00	1.26E+00	7.61E+01	5.02E-01	1.72E-03	0.00E+00	7.16E-02	5.21E-02	0.00E+00	-1.92E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 132 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	1.41E-02	1.49E+01	5.78E-03	3.81E-05	0.00E+00	1.21E-03	7.93E-03	0.00E+00	-7.29E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.11E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	1.41E-02	1.50E+01	5.78E-03	3.81E-05	0.00E+00	1.21E-03	7.93E-03	0.00E+00	-7.29E+00
PENRE	[MJ]	2.79E+01	1.10E+00	1.61E+01	4.71E-01	2.06E-03	0.00E+00	8.39E-02	1.34E-01	0.00E+00	-5.70E+00
PENRM	[MJ]	7.37E-01	0.00E+00	8.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.86E+01	1.10E+00	1.61E+01	4.71E-01	2.06E-03	0.00E+00	8.39E-02	1.34E-01	0.00E+00	-5.70E+00
SM	[kg]	6.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.92E-01	2.68E-05	2.29E-02	1.04E-05	5.85E-08	0.00E+00	1.71E-06	3.00E-05	0.00E+00	-2.04E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 133 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,59E-05	2,67E-06	1,59E-05	1,05E-06	8,70E-08	0,00E+00	3,42E-06	1,49E-06	0,00E+00	-3,48E-06
NHWD	[kg]	9,15E-03	5,82E-05	3,25E-03	2,29E-05	1,01E-04	0,00E+00	7,45E-05	1,83E-02	0,00E+00	-1,22E-03
RWD	[kg]	4.61E-05	7.50E-06	2.03E-03	3.20E-06	1.36E-08	0.00E+00	5.68E-07	5.31E-07	0.00E+00	-4.65E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	2.36E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	3.07E-02	0.00E+00	0.00E+00	4.80E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	6.47E-02	0.00E+00	0.00E+00	9.15E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 134 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.11E-02

Results for group 27

Table 135 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.35E+00	1.99E-02	7.44E-01	3.01E-02	4.95E-04	0.00E+00	5.46E-03	2.86E+00	0.00E+00	-4.16E-01
GWP-fossil	kg CO_2 eq.	1.29E+00	1.99E-02	1.00E+00	3.00E-02	4.86E-05	0.00E+00	5.45E-03	2.86E+00	0.00E+00	-3.95E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.32E-02	0.00E+00	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.42E-04	7.21E-06	7.46E-04	1.19E-05	1.80E-08	0.00E+00	2.22E-06	6.32E-06	0.00E+00	-8.97E-04
ODP	kg CFC 11 eq.	5.90E-08	4.79E-09	4.22E-08	7.11E-09	1.01E-11	0.00E+00	1.28E-09	2.13E-09	0.00E+00	-1.77E-08
AP	mol H^+ eq.	5.23E-03	1.01E-04	3.71E-03	2.31E-04	3.31E-07	0.00E+00	3.09E-05	3.31E-04	0.00E+00	-2.21E-03
EP-freshwater	kg P eq.	3.27E-04	1.25E-06	3.59E-04	1.80E-06	4.68E-09	0.00E+00	3.68E-07	2.91E-06	0.00E+00	-2.70E-04
EP-marine	kg N eq.	1.23E-03	3.47E-05	7.33E-04	7.02E-05	1.33E-07	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.09E-04
EP-terrestrial	mol N eq.	1.15E-02	3.80E-04	7.49E-03	7.72E-04	1.44E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.61E-03
POCP	kg NMVOC eq.	4.11E-03	1.13E-04	2.11E-03	2.21E-04	4.00E-07	0.00E+00	3.50E-05	4.62E-04	0.00E+00	-1.35E-03
ADPm[1]	kg Sb eq.	8.57E-06	4.60E-08	2.93E-06	6.68E-08	1.49E-10	0.00E+00	1.83E-08	6.11E-08	0.00E+00	-1.55E-06
ADPf[1]	MJ	3.09E+01	3.13E-01	1.42E+01	4.64E-01	6.69E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
WDP[1]	m^3 world eq. deprived	4.25E-01	1.08E-03	1.89E-01	1.53E-03	2.98E-06	0.00E+00	2.75E-04	4.70E-03	0.00E+00	-6.36E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 136 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	6.16E-08	2.40E-09	2.24E-08	3.37E-09	5.37E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.82E-08
IRP[2]	[kBq U235 eq.]	1.26E-01	1.58E-03	1.17E-01	2.33E-03	3.43E-06	0.00E+00	4.33E-04	6.54E-04	0.00E+00	-9.27E-02
ETP-fw[1]	[CTUe]	1.73E+01	2.44E-01	1.50E+01	3.56E-01	5.74E-04	0.00E+00	6.64E-02	6.84E-01	0.00E+00	-1.39E+01
HTP-c[1]	[CTUh]	7.30E-10	6.75E-12	5.68E-10	1.09E-11	1.11E-13	0.00E+00	2.65E-12	4.02E-10	0.00E+00	-2.16E-10
HTP-nc[1]	[CTUh]	1.26E-08	2.67E-10	7.49E-09	3.80E-10	8.52E-13	0.00E+00	7.65E-11	2.67E-09	0.00E+00	-6.48E-09
SQP[1]	-	5.30E+00	3.58E-01	2.70E+01	4.94E-01	5.56E-04	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-1.90E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 137 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.10E+00	3.98E-03	5.94E+00	5.69E-03	1.13E-05	0.00E+00	1.21E-03	7.47E-03	0.00E+00	-7.21E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.59E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.10E+00	3.98E-03	5.94E+00	5.69E-03	1.13E-05	0.00E+00	1.21E-03	7.47E-03	0.00E+00	-7.21E+00
PENRE	[MJ]	3.01E+01	3.13E-01	1.42E+01	4.64E-01	6.69E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
PENRM	[MJ]	8.32E-01	0.00E+00	2.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	3.09E+01	3.13E-01	1.42E+01	4.64E-01	6.69E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.63E+00
SM	[kg]	6.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	8.22E-01	7.59E-06	2.24E-02	1.03E-05	1.90E-08	0.00E+00	1.71E-06	2.71E-05	0.00E+00	-1.97E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 138 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,30E-05	7,56E-07	1,23E-05	1,03E-06	2,82E-08	0,00E+00	3,42E-06	8,92E-07	0,00E+00	-3,44E-06
NHWD	[kg]	8,58E-03	1,65E-05	2,84E-03	2,25E-05	3,28E-05	0,00E+00	7,45E-05	1,83E-02	0,00E+00	-1,20E-03
RWD	[kg]	4.66E-05	2.12E-06	2.03E-03	3.15E-06	4.41E-09	0.00E+00	5.68E-07	3.92E-07	0.00E+00	-4.49E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	4.24E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.64E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	9.93E-03	0.00E+00	0.00E+00	4.62E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.09E-02	0.00E+00	0.00E+00	9.20E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 139 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.59E-03

Results for group 28

Table 140 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.34E+00	1.83E-02	7.52E-01	3.01E-02	4.91E-04	0.00E+00	5.46E-03	2.87E+00	0.00E+00	-4.16E-01
GWP-fossil	kg CO_2 eq.	1.28E+00	1.82E-02	9.98E-01	3.00E-02	6.29E-05	0.00E+00	5.45E-03	2.87E+00	0.00E+00	-3.95E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.26E-02	0.00E+00	1.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.40E-04	6.61E-06	7.36E-04	1.19E-05	1.75E-08	0.00E+00	2.22E-06	6.33E-06	0.00E+00	-8.98E-04
ODP	kg CFC 11 eq.	5.93E-08	4.39E-09	4.19E-08	7.11E-09	9.67E-12	0.00E+00	1.28E-09	2.13E-09	0.00E+00	-1.77E-08
AP	mol H^+ eq.	5.18E-03	9.27E-05	3.70E-03	2.31E-04	3.19E-07	0.00E+00	3.09E-05	3.32E-04	0.00E+00	-2.21E-03
EP-freshwater	kg P eq.	3.26E-04	1.14E-06	3.58E-04	1.80E-06	4.63E-09	0.00E+00	3.68E-07	2.92E-06	0.00E+00	-2.71E-04
EP-marine	kg N eq.	1.22E-03	3.18E-05	7.29E-04	7.02E-05	1.28E-07	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.10E-04
EP-terrestrial	mol N eq.	1.14E-02	3.48E-04	7.45E-03	7.72E-04	1.39E-06	0.00E+00	1.22E-04	1.73E-03	0.00E+00	-6.62E-03
POCP	kg NMVOC eq.	4.07E-03	1.04E-04	2.10E-03	2.20E-04	3.86E-07	0.00E+00	3.50E-05	4.62E-04	0.00E+00	-1.35E-03
ADPm[1]	kg Sb eq.	8.54E-06	4.22E-08	2.91E-06	6.68E-08	1.42E-10	0.00E+00	1.83E-08	6.12E-08	0.00E+00	-1.55E-06
ADPf[1]	MJ	3.04E+01	2.86E-01	1.42E+01	4.64E-01	6.42E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.64E+00
WDP[1]	m^3 world eq. deprived	4.20E-01	9.86E-04	1.88E-01	1.53E-03	2.81E-06	0.00E+00	2.75E-04	4.71E-03	0.00E+00	-6.37E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 141 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	6.12E-08	2.20E-09	2.22E-08	3.36E-09	5.14E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.82E-08
IRP[2]	[kBq U235 eq.]	1.27E-01	1.45E-03	1.17E-01	2.33E-03	3.33E-06	0.00E+00	4.33E-04	6.55E-04	0.00E+00	-9.29E-02
ETP-fw[1]	[CTUe]	1.72E+01	2.24E-01	1.49E+01	3.56E-01	5.55E-04	0.00E+00	6.64E-02	6.85E-01	0.00E+00	-1.39E+01
HTP-c[1]	[CTUh]	7.32E-10	6.19E-12	5.54E-10	1.09E-11	1.08E-13	0.00E+00	2.65E-12	4.07E-10	0.00E+00	-2.17E-10
HTP-nc[1]	[CTUh]	1.26E-08	2.45E-10	7.45E-09	3.80E-10	8.30E-13	0.00E+00	7.65E-11	2.68E-09	0.00E+00	-6.49E-09
SQP[1]	-	5.32E+00	3.28E-01	2.61E+01	4.94E-01	5.34E-04	0.00E+00	7.16E-02	4.93E-02	0.00E+00	-1.90E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 142 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.10E+00	3.65E-03	5.76E+00	5.68E-03	1.38E-05	0.00E+00	1.21E-03	7.48E-03	0.00E+00	-7.22E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.45E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.10E+00	3.65E-03	5.77E+00	5.68E-03	1.38E-05	0.00E+00	1.21E-03	7.48E-03	0.00E+00	-7.22E+00
PENRE	[MJ]	2.96E+01	2.86E-01	1.42E+01	4.64E-01	6.42E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.64E+00
PENRM	[MJ]	8.30E-01	0.00E+00	2.97E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	3.04E+01	2.86E-01	1.42E+01	4.64E-01	6.42E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.64E+00
SM	[kg]	7.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	7.98E-01	6.95E-06	2.24E-02	1.03E-05	1.81E-08	0.00E+00	1.71E-06	2.72E-05	0.00E+00	-1.97E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 143 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,30E-05	6,93E-07	1,22E-05	1,03E-06	2,71E-08	0,00E+00	3,42E-06	9,04E-07	0,00E+00	-3,44E-06
NHWD	[kg]	8,64E-03	1,51E-05	2,83E-03	2,25E-05	3,16E-05	0,00E+00	7,45E-05	1,84E-02	0,00E+00	-1,21E-03
RWD	[kg]	4.68E-05	1.94E-06	2.03E-03	3.15E-06	4.25E-09	0.00E+00	5.68E-07	3.95E-07	0.00E+00	-4.50E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.34E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	9.55E-03	0.00E+00	0.00E+00	4.63E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.01E-02	0.00E+00	0.00E+00	9.22E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 144 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.45E-03

Results for group 29

Table 145 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.20E+00	7.70E-02	2.22E-02	3.09E-02	2.17E-03	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.48E-01
GWP-fossil	kg CO_2 eq.	1.14E+00	7.69E-02	1.17E+00	3.08E-02	2.00E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.25E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-5.81E-02	0.00E+00	5.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.38E-04	2.79E-05	1.62E-03	1.22E-05	7.92E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.66E-04
ODP	kg CFC 11 eq.	6.27E-08	1.85E-08	7.02E-08	7.29E-09	4.45E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.91E-08
AP	mol H^+ eq.	4.60E-03	3.91E-04	4.79E-03	2.37E-04	1.46E-06	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.38E-03
EP-freshwater	kg P eq.	3.18E-04	4.83E-06	4.18E-04	1.85E-06	2.05E-08	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	1.15E-03	1.34E-04	1.05E-03	7.20E-05	5.85E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.48E-04
EP-terrestrial	mol N eq.	1.05E-02	1.47E-03	1.10E-02	7.92E-04	6.37E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.11E-03
POCP	kg NMVOC eq.	3.67E-03	4.38E-04	3.39E-03	2.26E-04	1.77E-06	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	7.65E-06	1.78E-07	4.43E-06	6.85E-08	6.60E-10	0.00E+00	1.83E-08	6.23E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	2.44E+01	1.21E+00	1.74E+01	4.76E-01	2.95E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.07E+00
WDP[1]	m^3 world eq. deprived	3.69E-01	4.16E-03	3.04E-01	1.57E-03	1.32E-05	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.85E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 146 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.66E-08	9.26E-09	3.97E-08	3.45E-09	2.37E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.96E-08
IRP[2]	[kBq U235 eq.]	1.36E-01	6.11E-03	1.39E-01	2.39E-03	1.51E-05	0.00E+00	4.33E-04	6.68E-04	0.00E+00	-9.99E-02
ETP-fw[1]	[CTUe]	1.64E+01	9.43E-01	1.89E+01	3.65E-01	2.53E-03	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.50E+01
HTP-c[1]	[CTUh]	7.46E-10	2.61E-11	1.77E-09	1.12E-11	4.91E-13	0.00E+00	2.65E-12	4.00E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.17E-08	1.03E-09	1.15E-08	3.89E-10	3.76E-12	0.00E+00	7.65E-11	2.76E-09	0.00E+00	-6.98E-09
SQP[1]	-	5.54E+00	1.38E+00	1.07E+02	5.07E-01	2.45E-03	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 147 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.13E+00	1.54E-02	2.07E+01	5.83E-03	4.71E-05	0.00E+00	1.21E-03	7.65E-03	0.00E+00	-7.76E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.58E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.13E+00	1.54E-02	2.07E+01	5.83E-03	4.71E-05	0.00E+00	1.21E-03	7.65E-03	0.00E+00	-7.76E+00
PENRE	[MJ]	2.35E+01	1.21E+00	1.74E+01	4.76E-01	2.95E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.07E+00
PENRM	[MJ]	8.36E-01	0.00E+00	1.03E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.44E+01	1.21E+00	1.74E+01	4.76E-01	2.95E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.07E+00
SM	[kg]	7.86E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.80E-01	2.93E-05	2.32E-02	1.05E-05	8.43E-08	0.00E+00	1.71E-06	2.73E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 148 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,35E-05	2,92E-06	1,82E-05	1,06E-06	1,24E-07	0,00E+00	3,42E-06	8,87E-07	0,00E+00	-3,70E-06
NHWD	[kg]	9,46E-03	6,36E-05	3,50E-03	2,31E-05	1,44E-04	0,00E+00	7,45E-05	1,92E-02	0,00E+00	-1,30E-03
RWD	[kg]	5.05E-05	8.20E-06	2.03E-03	3.24E-06	1.94E-08	0.00E+00	5.68E-07	3.88E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	4.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	3.37E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	4.38E-02	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	9.23E-02	0.00E+00	0.00E+00	9.91E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 149 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.58E-02

Results for group 30

Table 150 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.23E+00	2.86E-02	7.91E-01	3.00E-02	3.82E-04	0.00E+00	5.46E-03	2.89E+00	0.00E+00	-4.23E-01
GWP-fossil	kg CO_2 eq.	1.17E+00	2.86E-02	9.88E-01	3.00E-02	3.57E-05	0.00E+00	5.45E-03	2.89E+00	0.00E+00	-4.02E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.02E-02	0.00E+00	1.02E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.14E-04	1.04E-05	6.89E-04	1.19E-05	1.39E-08	0.00E+00	2.22E-06	6.35E-06	0.00E+00	-9.13E-04
ODP	kg CFC 11 eq.	5.96E-08	6.88E-09	4.04E-08	7.10E-09	7.82E-12	0.00E+00	1.28E-09	2.14E-09	0.00E+00	-1.80E-08
AP	mol H^+ eq.	4.71E-03	1.45E-04	3.64E-03	2.30E-04	2.57E-07	0.00E+00	3.09E-05	3.32E-04	0.00E+00	-2.25E-03
EP-freshwater	kg P eq.	3.17E-04	1.80E-06	3.55E-04	1.80E-06	3.61E-09	0.00E+00	3.68E-07	2.92E-06	0.00E+00	-2.75E-04
EP-marine	kg N eq.	1.15E-03	4.99E-05	7.12E-04	7.01E-05	1.03E-07	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.19E-04
EP-terrestrial	mol N eq.	1.06E-02	5.45E-04	7.27E-03	7.70E-04	1.12E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-6.73E-03
POCP	kg NMVOC eq.	3.69E-03	1.63E-04	2.03E-03	2.20E-04	3.10E-07	0.00E+00	3.50E-05	4.63E-04	0.00E+00	-1.37E-03
ADPm[1]	kg Sb eq.	7.82E-06	6.61E-08	2.83E-06	6.67E-08	1.16E-10	0.00E+00	1.83E-08	6.13E-08	0.00E+00	-1.58E-06
ADPf[1]	MJ	2.60E+01	4.49E-01	1.40E+01	4.63E-01	5.19E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.74E+00
WDP[1]	m^3 world eq. deprived	3.65E-01	1.55E-03	1.82E-01	1.53E-03	2.32E-06	0.00E+00	2.75E-04	4.73E-03	0.00E+00	-6.48E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 151 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.75E-08	3.44E-09	2.13E-08	3.36E-09	4.16E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.85E-08
IRP[2]	[kBq U235 eq.]	1.32E-01	2.27E-03	1.15E-01	2.32E-03	2.65E-06	0.00E+00	4.33E-04	6.57E-04	0.00E+00	-9.44E-02
ETP-fw[1]	[CTUe]	1.64E+01	3.51E-01	1.47E+01	3.56E-01	4.45E-04	0.00E+00	6.64E-02	6.90E-01	0.00E+00	-1.42E+01
HTP-c[1]	[CTUh]	7.28E-10	9.70E-12	4.90E-10	1.09E-11	8.62E-14	0.00E+00	2.65E-12	3.96E-10	0.00E+00	-2.20E-10
HTP-nc[1]	[CTUh]	1.19E-08	3.84E-10	7.23E-09	3.79E-10	6.60E-13	0.00E+00	7.65E-11	2.69E-09	0.00E+00	-6.60E-09
SQP[1]	-	5.47E+00	5.14E-01	2.17E+01	4.93E-01	4.31E-04	0.00E+00	7.16E-02	4.93E-02	0.00E+00	-1.93E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 152 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.12E+00	5.72E-03	4.97E+00	5.68E-03	8.37E-06	0.00E+00	1.21E-03	7.50E-03	0.00E+00	-7.34E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.78E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.12E+00	5.72E-03	4.97E+00	5.68E-03	8.37E-06	0.00E+00	1.21E-03	7.50E-03	0.00E+00	-7.34E+00
PENRE	[MJ]	2.52E+01	4.49E-01	1.40E+01	4.63E-01	5.19E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.74E+00
PENRM	[MJ]	8.34E-01	0.00E+00	1.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.60E+01	4.49E-01	1.40E+01	4.63E-01	5.19E-04	0.00E+00	8.39E-02	1.32E-01	0.00E+00	-5.74E+00
SM	[kg]	7.68E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.22E-01	1.09E-05	2.23E-02	1.03E-05	1.48E-08	0.00E+00	1.71E-06	2.71E-05	0.00E+00	-2.01E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 153 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,31E-05	1,09E-06	1,19E-05	1,03E-06	2,19E-08	0,00E+00	3,42E-06	8,79E-07	0,00E+00	-3,50E-06
NHWD	[kg]	9,11E-03	2,37E-05	2,80E-03	2,25E-05	2,54E-05	0,00E+00	7,45E-05	1,85E-02	0,00E+00	-1,23E-03
RWD	[kg]	4.86E-05	3.05E-06	2.03E-03	3.15E-06	3.42E-09	0.00E+00	5.68E-07	3.89E-07	0.00E+00	-4.57E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.26E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	5.92E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	7.70E-03	0.00E+00	0.00E+00	4.70E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.62E-02	0.00E+00	0.00E+00	9.38E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 154 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.78E-03

Results for group 31

Table 155 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.18E+00	7.79E-02	4.83E-01	3.04E-02	1.10E-03	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.52E-01
GWP-fossil	kg CO_2 eq.	1.12E+00	7.78E-02	1.06E+00	3.03E-02	9.95E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.29E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-2.94E-02	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.26E-04	2.82E-05	1.06E-03	1.20E-05	4.01E-08	0.00E+00	2.22E-06	6.44E-06	0.00E+00	-9.74E-04
ODP	kg CFC 11 eq.	6.18E-08	1.87E-08	5.23E-08	7.18E-09	2.25E-11	0.00E+00	1.28E-09	2.17E-09	0.00E+00	-1.92E-08
AP	mol H^+ eq.	4.46E-03	3.96E-04	4.10E-03	2.33E-04	7.39E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.40E-03
EP-freshwater	kg P eq.	3.14E-04	4.89E-06	3.80E-04	1.82E-06	1.04E-08	0.00E+00	3.68E-07	2.95E-06	0.00E+00	-2.94E-04
EP-marine	kg N eq.	1.13E-03	1.36E-04	8.46E-04	7.09E-05	2.96E-07	0.00E+00	1.12E-05	1.65E-04	0.00E+00	-5.53E-04
EP-terrestrial	mol N eq.	1.03E-02	1.48E-03	8.75E-03	7.79E-04	3.22E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.18E-03
POCP	kg NMVOC eq.	3.60E-03	4.44E-04	2.58E-03	2.23E-04	8.94E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.46E-03
ADPm[1]	kg Sb eq.	7.24E-06	1.80E-07	3.47E-06	6.74E-08	3.34E-10	0.00E+00	1.83E-08	6.18E-08	0.00E+00	-1.68E-06
ADPf[1]	MJ	2.38E+01	1.22E+00	1.54E+01	4.68E-01	1.50E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
WDP[1]	m^3 world eq. deprived	3.52E-01	4.21E-03	2.31E-01	1.55E-03	6.69E-06	0.00E+00	2.75E-04	4.81E-03	0.00E+00	-6.91E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 156 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.57E-08	9.37E-09	2.87E-08	3.40E-09	1.20E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.97E-08
IRP[2]	[kBq U235 eq.]	1.37E-01	6.18E-03	1.25E-01	2.35E-03	7.63E-06	0.00E+00	4.33E-04	6.65E-04	0.00E+00	-1.01E-01
ETP-fw[1]	[CTUe]	1.60E+01	9.55E-01	1.64E+01	3.59E-01	1.28E-03	0.00E+00	6.64E-02	7.09E-01	0.00E+00	-1.51E+01
HTP-c[1]	[CTUh]	7.35E-10	2.64E-11	1.00E-09	1.10E-11	2.48E-13	0.00E+00	2.65E-12	3.63E-10	0.00E+00	-2.35E-10
HTP-nc[1]	[CTUh]	1.13E-08	1.04E-09	8.95E-09	3.83E-10	1.90E-12	0.00E+00	7.65E-11	2.74E-09	0.00E+00	-7.04E-09
SQP[1]	-	5.53E+00	1.40E+00	5.61E+01	4.99E-01	1.24E-03	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-2.06E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 157 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.13E+00	1.56E-02	1.13E+01	5.74E-03	2.35E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	8.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.13E+00	1.56E-02	1.13E+01	5.74E-03	2.35E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PENRE	[MJ]	2.29E+01	1.22E+00	1.54E+01	4.68E-01	1.50E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
PENRM	[MJ]	8.50E-01	0.00E+00	5.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.38E+01	1.22E+00	1.54E+01	4.68E-01	1.50E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
SM	[kg]	8.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.78E-01	2.97E-05	2.26E-02	1.04E-05	4.27E-08	0.00E+00	1.71E-06	2.69E-05	0.00E+00	-2.13E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 158 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,31E-05	2,96E-06	1,44E-05	1,04E-06	6,30E-08	0,00E+00	3,42E-06	8,00E-07	0,00E+00	-3,73E-06
NHWD	[kg]	9,50E-03	6,44E-05	3,08E-03	2,27E-05	7,32E-05	0,00E+00	7,45E-05	1,93E-02	0,00E+00	-1,31E-03
RWD	[kg]	5.12E-05	8.30E-06	2.03E-03	3.18E-06	9.85E-09	0.00E+00	5.68E-07	3.68E-07	0.00E+00	-4.85E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.13E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.71E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	2.22E-02	0.00E+00	0.00E+00	5.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	4.68E-02	0.00E+00	0.00E+00	1.00E+01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 159 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	8.02E-03

Results for group 32

Table 160 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.23E+00	1.75E-02	8.05E-01	3.00E-02	4.80E-04	0.00E+00	5.46E-03	2.90E+00	0.00E+00	-4.24E-01
GWP-fossil	kg CO_2 eq.	1.17E+00	1.75E-02	9.85E-01	3.00E-02	1.61E-04	0.00E+00	5.45E-03	2.90E+00	0.00E+00	-4.02E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-9.40E-03	0.00E+00	9.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.16E-04	6.33E-06	6.73E-04	1.19E-05	1.47E-08	0.00E+00	2.22E-06	6.37E-06	0.00E+00	-9.14E-04
ODP	kg CFC 11 eq.	6.02E-08	4.20E-09	3.99E-08	7.10E-09	7.08E-12	0.00E+00	1.28E-09	2.15E-09	0.00E+00	-1.81E-08
AP	mol H^+ eq.	4.73E-03	8.88E-05	3.62E-03	2.30E-04	2.47E-07	0.00E+00	3.09E-05	3.32E-04	0.00E+00	-2.25E-03
EP-freshwater	kg P eq.	3.18E-04	1.10E-06	3.54E-04	1.80E-06	4.46E-09	0.00E+00	3.68E-07	2.93E-06	0.00E+00	-2.75E-04
EP-marine	kg N eq.	1.15E-03	3.05E-05	7.07E-04	7.00E-05	9.91E-08	0.00E+00	1.12E-05	1.63E-04	0.00E+00	-5.19E-04
EP-terrestrial	mol N eq.	1.06E-02	3.33E-04	7.21E-03	7.70E-04	1.09E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-6.73E-03
POCP	kg NMVOC eq.	3.69E-03	9.96E-05	2.01E-03	2.20E-04	2.99E-07	0.00E+00	3.50E-05	4.63E-04	0.00E+00	-1.37E-03
ADPm[1]	kg Sb eq.	7.94E-06	4.04E-08	2.80E-06	6.67E-08	9.54E-11	0.00E+00	1.83E-08	6.16E-08	0.00E+00	-1.58E-06
ADPf[1]	MJ	2.59E+01	2.74E-01	1.40E+01	4.63E-01	4.72E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.74E+00
WDP[1]	m^3 world eq. deprived	3.66E-01	9.45E-04	1.80E-01	1.53E-03	1.72E-06	0.00E+00	2.75E-04	4.74E-03	0.00E+00	-6.48E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 161 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.76E-08	2.10E-09	2.10E-08	3.36E-09	3.75E-12	0.00E+00	6.03E-10	2.64E-09	0.00E+00	-1.85E-08
IRP[2]	[kBq U235 eq.]	1.32E-01	1.39E-03	1.15E-01	2.32E-03	2.79E-06	0.00E+00	4.33E-04	6.59E-04	0.00E+00	-9.45E-02
ETP-fw[1]	[CTUe]	1.65E+01	2.14E-01	1.46E+01	3.55E-01	4.44E-04	0.00E+00	6.64E-02	6.92E-01	0.00E+00	-1.42E+01
HTP-c[1]	[CTUh]	7.34E-10	5.93E-12	4.68E-10	1.09E-11	9.04E-14	0.00E+00	2.65E-12	4.12E-10	0.00E+00	-2.21E-10
HTP-nc[1]	[CTUh]	1.20E-08	2.35E-10	7.16E-09	3.79E-10	7.04E-13	0.00E+00	7.65E-11	2.70E-09	0.00E+00	-6.61E-09
SQP[1]	-	5.48E+00	3.14E-01	2.03E+01	4.93E-01	4.04E-04	0.00E+00	7.16E-02	4.94E-02	0.00E+00	-1.93E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 162 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.12E+00	3.49E-03	4.70E+00	5.67E-03	3.15E-05	0.00E+00	1.21E-03	7.53E-03	0.00E+00	-7.34E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.56E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.12E+00	3.49E-03	4.70E+00	5.67E-03	3.15E-05	0.00E+00	1.21E-03	7.53E-03	0.00E+00	-7.34E+00
PENRE	[MJ]	2.51E+01	2.74E-01	1.40E+01	4.63E-01	4.72E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.74E+00
PENRM	[MJ]	8.29E-01	0.00E+00	6.55E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.59E+01	2.74E-01	1.40E+01	4.63E-01	4.72E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.74E+00
SM	[kg]	7.68E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.10E-01	6.66E-06	2.27E-02	1.03E-05	1.19E-08	0.00E+00	1.71E-06	2.73E-05	0.00E+00	-2.01E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 163 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,32E-05	6,64E-07	1,18E-05	1,03E-06	2,03E-08	0,00E+00	3,42E-06	9,16E-07	0,00E+00	-3,50E-06
NHWD	[kg]	9,13E-03	1,45E-05	2,78E-03	2,25E-05	2,42E-05	0,00E+00	7,45E-05	1,85E-02	0,00E+00	-1,23E-03
RWD	[kg]	4.85E-05	1.86E-06	2.03E-03	3.15E-06	3.29E-09	0.00E+00	5.68E-07	3.97E-07	0.00E+00	-4.58E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.32E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	5.50E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	7.24E-03	0.00E+00	0.00E+00	4.71E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.53E-02	0.00E+00	0.00E+00	9.37E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 164 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.56E-03

Results for group 33

Table 165 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	9.93E-01	4.34E-02	4.28E-01	3.04E-02	1.32E-03	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.44E-01
GWP-fossil	kg CO_2 eq.	9.24E-01	4.33E-02	1.08E+00	3.04E-02	1.42E-04	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.22E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-3.29E-02	0.00E+00	3.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.77E-04	1.57E-05	1.13E-03	1.21E-05	4.61E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.58E-04
ODP	kg CFC 11 eq.	6.32E-08	1.04E-08	5.45E-08	7.19E-09	2.55E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.89E-08
AP	mol H^+ eq.	3.77E-03	2.20E-04	4.18E-03	2.33E-04	8.47E-07	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.36E-03
EP-freshwater	kg P eq.	3.01E-04	2.72E-06	3.85E-04	1.82E-06	1.21E-08	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.89E-04
EP-marine	kg N eq.	1.02E-03	7.56E-05	8.70E-04	7.10E-05	3.41E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.44E-04
EP-terrestrial	mol N eq.	8.94E-03	8.27E-04	9.01E-03	7.81E-04	3.70E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.06E-03
POCP	kg NMVOC eq.	2.90E-03	2.47E-04	2.68E-03	2.23E-04	1.02E-06	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	6.74E-06	1.00E-07	3.59E-06	6.76E-08	3.79E-10	0.00E+00	1.83E-08	6.27E-08	0.00E+00	-1.65E-06
ADPf[1]	MJ	1.61E+01	6.81E-01	1.56E+01	4.69E-01	1.68E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.02E+00
WDP[1]	m^3 world eq. deprived	2.61E-01	2.34E-03	2.40E-01	1.55E-03	7.93E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.79E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 166 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.99E-08	5.22E-09	3.00E-08	3.40E-09	1.35E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.94E-08
IRP[2]	[kBq U235 eq.]	1.45E-01	3.44E-03	1.27E-01	2.35E-03	8.69E-06	0.00E+00	4.33E-04	6.71E-04	0.00E+00	-9.91E-02
ETP-fw[1]	[CTUe]	1.49E+01	5.32E-01	1.67E+01	3.60E-01	1.55E-03	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.48E+01
HTP-c[1]	[CTUh]	7.47E-10	1.47E-11	1.09E-09	1.11E-11	2.95E-13	0.00E+00	2.65E-12	4.35E-10	0.00E+00	-2.31E-10
HTP-nc[1]	[CTUh]	1.09E-08	5.82E-10	9.26E-09	3.84E-10	2.24E-12	0.00E+00	7.65E-11	2.78E-09	0.00E+00	-6.92E-09
SQP[1]	-	5.86E+00	7.79E-01	6.22E+01	5.00E-01	1.39E-03	0.00E+00	7.16E-02	4.99E-02	0.00E+00	-2.02E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 167 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	8.67E-03	1.24E+01	5.75E-03	3.25E-05	0.00E+00	1.21E-03	7.69E-03	0.00E+00	-7.70E+00
PERM	[MJ]	0.00E+00	0.00E+00	8.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	8.67E-03	1.24E+01	5.75E-03	3.25E-05	0.00E+00	1.21E-03	7.69E-03	0.00E+00	-7.70E+00
PENRE	[MJ]	1.53E+01	6.81E-01	1.56E+01	4.69E-01	1.68E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.02E+00
PENRM	[MJ]	8.22E-01	0.00E+00	6.85E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.61E+01	6.81E-01	1.56E+01	4.69E-01	1.68E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.02E+00
SM	[kg]	9.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.30E-01	1.65E-05	2.29E-02	1.04E-05	4.87E-08	0.00E+00	1.71E-06	2.77E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 168 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,39E-05	1,65E-06	1,49E-05	1,05E-06	7,05E-08	0,00E+00	3,42E-06	9,70E-07	0,00E+00	-3,67E-06
NHWD	[kg]	1,03E-02	3,59E-05	3,13E-03	2,28E-05	8,22E-05	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.25E-05	4.62E-06	2.03E-03	3.19E-06	1.11E-08	0.00E+00	5.68E-07	4.08E-07	0.00E+00	-4.80E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.91E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	2.49E-02	0.00E+00	0.00E+00	4.95E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	5.24E-02	0.00E+00	0.00E+00	9.81E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 169 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	8.97E-03

Results for group 34

Table 170 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	9.36E-01	1.54E-02	4.50E-03	3.09E-02	2.27E-03	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.41E-01
GWP-fossil	kg CO_2 eq.	8.65E-01	1.54E-02	1.18E+00	3.08E-02	2.17E-04	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.19E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-5.92E-02	0.00E+00	5.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.60E-04	5.57E-06	1.64E-03	1.23E-05	8.14E-08	0.00E+00	2.22E-06	6.49E-06	0.00E+00	-9.52E-04
ODP	kg CFC 11 eq.	6.38E-08	3.69E-09	7.09E-08	7.30E-09	4.56E-11	0.00E+00	1.28E-09	2.19E-09	0.00E+00	-1.88E-08
AP	mol H^+ eq.	3.56E-03	7.80E-05	4.82E-03	2.37E-04	1.50E-06	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.34E-03
EP-freshwater	kg P eq.	2.97E-04	9.64E-07	4.19E-04	1.85E-06	2.12E-08	0.00E+00	3.68E-07	3.00E-06	0.00E+00	-2.87E-04
EP-marine	kg N eq.	9.86E-04	2.68E-05	1.05E-03	7.21E-05	6.02E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.40E-04
EP-terrestrial	mol N eq.	8.51E-03	2.93E-04	1.10E-02	7.92E-04	6.55E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.01E-03
POCP	kg NMVOC eq.	2.67E-03	8.75E-05	3.43E-03	2.26E-04	1.81E-06	0.00E+00	3.50E-05	4.64E-04	0.00E+00	-1.43E-03
ADPm[1]	kg Sb eq.	6.63E-06	3.55E-08	4.46E-06	6.86E-08	6.76E-10	0.00E+00	1.83E-08	6.31E-08	0.00E+00	-1.64E-06
ADPf[1]	MJ	1.37E+01	2.41E-01	1.74E+01	4.76E-01	3.02E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.98E+00
WDP[1]	m^3 world eq. deprived	2.31E-01	8.30E-04	3.07E-01	1.57E-03	1.38E-05	0.00E+00	2.75E-04	4.83E-03	0.00E+00	-6.75E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 171 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.82E-08	1.85E-09	4.02E-08	3.45E-09	2.42E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.93E-08
IRP[2]	[kBq U235 eq.]	1.47E-01	1.22E-03	1.40E-01	2.39E-03	1.54E-05	0.00E+00	4.33E-04	6.74E-04	0.00E+00	-9.84E-02
ETP-fw[1]	[CTUe]	1.46E+01	1.88E-01	1.90E+01	3.66E-01	2.65E-03	0.00E+00	6.64E-02	7.12E-01	0.00E+00	-1.47E+01
HTP-c[1]	[CTUh]	7.52E-10	5.21E-12	1.80E-09	1.12E-11	5.10E-13	0.00E+00	2.65E-12	4.63E-10	0.00E+00	-2.30E-10
HTP-nc[1]	[CTUh]	1.07E-08	2.06E-10	1.16E-08	3.90E-10	3.89E-12	0.00E+00	7.65E-11	2.79E-09	0.00E+00	-6.88E-09
SQP[1]	-	5.95E+00	2.76E-01	1.09E+02	5.07E-01	2.50E-03	0.00E+00	7.16E-02	5.02E-02	0.00E+00	-2.01E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 172 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	3.07E-03	2.10E+01	5.84E-03	5.07E-05	0.00E+00	1.21E-03	7.72E-03	0.00E+00	-7.64E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.61E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	3.07E-03	2.10E+01	5.84E-03	5.07E-05	0.00E+00	1.21E-03	7.72E-03	0.00E+00	-7.64E+00
PENRE	[MJ]	1.29E+01	2.41E-01	1.74E+01	4.76E-01	3.02E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.98E+00
PENRM	[MJ]	8.11E-01	0.00E+00	1.09E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.37E+01	2.41E-01	1.74E+01	4.76E-01	3.02E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.98E+00
SM	[kg]	9.35E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	7.91E-02	5.85E-06	2.33E-02	1.06E-05	8.65E-08	0.00E+00	1.71E-06	2.80E-05	0.00E+00	-2.10E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 173 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,42E-05	5,83E-07	1,83E-05	1,06E-06	1,27E-07	0,00E+00	3,42E-06	1,04E-06	0,00E+00	-3,65E-06
NHWD	[kg]	1,05E-02	1,27E-05	3,52E-03	2,31E-05	1,47E-04	0,00E+00	7,45E-05	1,90E-02	0,00E+00	-1,28E-03
RWD	[kg]	5.28E-05	1.64E-06	2.03E-03	3.24E-06	1.99E-08	0.00E+00	5.68E-07	4.23E-07	0.00E+00	-4.78E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	3.44E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	4.47E-02	0.00E+00	0.00E+00	4.93E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	9.42E-02	0.00E+00	0.00E+00	9.72E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 174 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.61E-02

Results for group 35

Table 175 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.96E-01	2.15E-02	2.25E-01	3.06E-02	1.71E-03	0.00E+00	5.46E-03	2.98E+00	0.00E+00	-4.46E-01
GWP-fossil	kg CO_2 eq.	8.23E-01	2.15E-02	1.13E+00	3.06E-02	1.68E-04	0.00E+00	5.45E-03	2.98E+00	0.00E+00	-4.23E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-4.54E-02	0.00E+00	4.54E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.43E-04	7.80E-06	1.38E-03	1.22E-05	6.21E-08	0.00E+00	2.22E-06	6.47E-06	0.00E+00	-9.61E-04
ODP	kg CFC 11 eq.	6.27E-08	5.18E-09	6.23E-08	7.24E-09	3.48E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.33E-03	1.09E-04	4.49E-03	2.35E-04	1.14E-06	0.00E+00	3.09E-05	3.33E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.91E-04	1.35E-06	4.01E-04	1.83E-06	1.61E-08	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.90E-04
EP-marine	kg N eq.	9.60E-04	3.75E-05	9.58E-04	7.15E-05	4.57E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.46E-04
EP-terrestrial	mol N eq.	8.15E-03	4.10E-04	9.98E-03	7.86E-04	4.98E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.08E-03
POCP	kg NMVOC eq.	2.53E-03	1.23E-04	3.03E-03	2.25E-04	1.38E-06	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.44E-03
ADPm[1]	kg Sb eq.	6.06E-06	4.97E-08	4.00E-06	6.80E-08	5.15E-10	0.00E+00	1.83E-08	6.25E-08	0.00E+00	-1.66E-06
ADPf[1]	MJ	1.24E+01	3.38E-01	1.65E+01	4.72E-01	2.31E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
WDP[1]	m^3 world eq. deprived	2.04E-01	1.16E-03	2.72E-01	1.56E-03	1.03E-05	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.82E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 176 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.66E-08	2.59E-09	3.49E-08	3.43E-09	1.85E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	1.71E-03	1.33E-01	2.37E-03	1.18E-05	0.00E+00	4.33E-04	6.70E-04	0.00E+00	-9.94E-02
ETP-fw[1]	[CTUe]	1.40E+01	2.64E-01	1.78E+01	3.63E-01	1.98E-03	0.00E+00	6.64E-02	7.11E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.38E-10	7.30E-12	1.43E-09	1.11E-11	3.84E-13	0.00E+00	2.65E-12	4.20E-10	0.00E+00	-2.32E-10
HTP-nc[1]	[CTUh]	1.02E-08	2.89E-10	1.04E-08	3.87E-10	2.94E-12	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.95E-09
SQP[1]	-	5.97E+00	3.87E-01	8.47E+01	5.03E-01	1.92E-03	0.00E+00	7.16E-02	4.98E-02	0.00E+00	-2.03E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 177 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	4.30E-03	1.65E+01	5.79E-03	3.88E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.72E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	4.30E-03	1.65E+01	5.79E-03	3.88E-05	0.00E+00	1.21E-03	7.67E-03	0.00E+00	-7.72E+00
PENRE	[MJ]	1.15E+01	3.38E-01	1.65E+01	4.72E-01	2.31E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
PENRM	[MJ]	8.28E-01	0.00E+00	8.44E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.24E+01	3.38E-01	1.65E+01	4.72E-01	2.31E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.04E+00
SM	[kg]	9.60E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	4.71E-02	8.20E-06	2.30E-02	1.05E-05	6.57E-08	0.00E+00	1.71E-06	2.75E-05	0.00E+00	-2.11E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 178 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,38E-05	8,18E-07	1,65E-05	1,05E-06	9,73E-08	0,00E+00	3,42E-06	9,35E-07	0,00E+00	-3,68E-06
NHWD	[kg]	1,06E-02	1,78E-05	3,32E-03	2,29E-05	1,13E-04	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.38E-05	2.29E-06	2.03E-03	3.21E-06	1.52E-08	0.00E+00	5.68E-07	3.99E-07	0.00E+00	-4.81E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	2.64E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	3.43E-02	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	7.22E-02	0.00E+00	0.00E+00	9.85E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 179 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.24E-02

Results for group 36

Table 180 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.63E-01	2.92E-02	2.68E-01	3.06E-02	1.61E-03	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.49E-01
GWP-fossil	kg CO_2 eq.	7.88E-01	2.92E-02	1.12E+00	3.06E-02	1.48E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.26E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-4.28E-02	0.00E+00	4.28E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.29E-04	1.06E-05	1.32E-03	1.21E-05	5.84E-08	0.00E+00	2.22E-06	6.45E-06	0.00E+00	-9.68E-04
ODP	kg CFC 11 eq.	6.19E-08	7.02E-09	6.07E-08	7.23E-09	3.28E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.91E-08
AP	mol H^+ eq.	3.15E-03	1.48E-04	4.42E-03	2.35E-04	1.08E-06	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.38E-03
EP-freshwater	kg P eq.	2.87E-04	1.83E-06	3.98E-04	1.83E-06	1.51E-08	0.00E+00	3.68E-07	2.96E-06	0.00E+00	-2.92E-04
EP-marine	kg N eq.	9.38E-04	5.08E-05	9.39E-04	7.14E-05	4.32E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.50E-04
EP-terrestrial	mol N eq.	7.85E-03	5.56E-04	9.78E-03	7.85E-04	4.70E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.13E-03
POCP	kg NMVOC eq.	2.41E-03	1.66E-04	2.96E-03	2.24E-04	1.30E-06	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.62E-06	6.74E-08	3.92E-06	6.79E-08	4.87E-10	0.00E+00	1.83E-08	6.21E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.12E+01	4.58E-01	1.63E+01	4.72E-01	2.18E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.08E+00
WDP[1]	m^3 world eq. deprived	1.82E-01	1.58E-03	2.65E-01	1.56E-03	9.79E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.87E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 181 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.52E-08	3.51E-09	3.38E-08	3.42E-09	1.75E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.96E-08
IRP[2]	[kBq U235 eq.]	1.50E-01	2.32E-03	1.31E-01	2.37E-03	1.11E-05	0.00E+00	4.33E-04	6.67E-04	0.00E+00	-1.00E-01
ETP-fw[1]	[CTUe]	1.36E+01	3.58E-01	1.76E+01	3.62E-01	1.88E-03	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.50E+01
HTP-c[1]	[CTUh]	7.28E-10	9.89E-12	1.36E-09	1.11E-11	3.63E-13	0.00E+00	2.65E-12	3.89E-10	0.00E+00	-2.34E-10
HTP-nc[1]	[CTUh]	9.84E-09	3.91E-10	1.02E-08	3.86E-10	2.78E-12	0.00E+00	7.65E-11	2.76E-09	0.00E+00	-7.00E-09
SQP[1]	-	5.99E+00	5.24E-01	8.00E+01	5.02E-01	1.81E-03	0.00E+00	7.16E-02	4.95E-02	0.00E+00	-2.05E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 182 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	5.83E-03	1.57E+01	5.78E-03	3.48E-05	0.00E+00	1.21E-03	7.64E-03	0.00E+00	-7.78E+00
PERM	[MJ]	0.00E+00	0.00E+00	1.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	5.83E-03	1.57E+01	5.78E-03	3.48E-05	0.00E+00	1.21E-03	7.64E-03	0.00E+00	-7.78E+00
PENRE	[MJ]	1.03E+01	4.58E-01	1.63E+01	4.72E-01	2.18E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.08E+00
PENRM	[MJ]	8.40E-01	0.00E+00	7.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.12E+01	4.58E-01	1.63E+01	4.72E-01	2.18E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.08E+00
SM	[kg]	9.81E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	1.51E-02	1.11E-05	2.29E-02	1.05E-05	6.22E-08	0.00E+00	1.71E-06	2.72E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 183 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,35E-05	1,11E-06	1,62E-05	1,05E-06	9,16E-08	0,00E+00	3,42E-06	8,62E-07	0,00E+00	-3,71E-06
NHWD	[kg]	1,07E-02	2,41E-05	3,28E-03	2,29E-05	1,06E-04	0,00E+00	7,45E-05	1,92E-02	0,00E+00	-1,30E-03
RWD	[kg]	5.46E-05	3.11E-06	2.03E-03	3.21E-06	1.43E-08	0.00E+00	5.68E-07	3.82E-07	0.00E+00	-4.83E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.23E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	2.48E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	3.23E-02	0.00E+00	0.00E+00	4.98E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	6.81E-02	0.00E+00	0.00E+00	9.94E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 184 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.17E-02

Results for group 37

Table 185 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.82E-01	2.48E-02	4.61E-01	3.04E-02	1.26E-03	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.09E-01	2.48E-02	1.07E+00	3.04E-02	1.37E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-3.09E-02	0.00E+00	3.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.37E-04	8.98E-06	1.09E-03	1.21E-05	4.36E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.24E-08	5.96E-09	5.32E-08	7.18E-09	2.40E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.26E-03	1.26E-04	4.13E-03	2.33E-04	7.99E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.90E-04	1.56E-06	3.82E-04	1.82E-06	1.15E-08	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	9.51E-04	4.32E-05	8.56E-04	7.09E-05	3.22E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	8.02E-03	4.73E-04	8.85E-03	7.80E-04	3.50E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.48E-03	1.41E-04	2.62E-03	2.23E-04	9.67E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.88E-06	5.73E-08	3.52E-06	6.75E-08	3.57E-10	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.19E+01	3.89E-01	1.55E+01	4.68E-01	1.58E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	1.95E-01	1.34E-03	2.34E-01	1.55E-03	7.59E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 186 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.60E-08	2.98E-09	2.92E-08	3.40E-09	1.27E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	1.97E-03	1.25E-01	2.35E-03	8.18E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.38E+01	3.04E-01	1.65E+01	3.60E-01	1.48E-03	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.34E-10	8.41E-12	1.04E-09	1.11E-11	2.81E-13	0.00E+00	2.65E-12	4.07E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.01E-08	3.33E-10	9.08E-09	3.84E-10	2.13E-12	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.98E+00	4.46E-01	5.85E+01	4.99E-01	1.31E-03	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 187 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	4.96E-03	1.17E+01	5.74E-03	3.14E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	8.41E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	4.96E-03	1.17E+01	5.74E-03	3.14E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	1.10E+01	3.89E-01	1.55E+01	4.68E-01	1.58E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.33E-01	0.00E+00	6.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.19E+01	3.89E-01	1.55E+01	4.68E-01	1.58E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	9.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	3.36E-02	9.45E-06	2.29E-02	1.04E-05	4.60E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 188 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	9,42E-07	1,46E-05	1,04E-06	6,61E-08	0,00E+00	3,42E-06	9,05E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,06E-02	2,05E-05	3,10E-03	2,27E-05	7,71E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.41E-05	2.64E-06	2.03E-03	3.19E-06	1.04E-08	0.00E+00	5.68E-07	3.92E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	3.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.79E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	2.33E-02	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	4.92E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 189 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	8.41E-03

Results for group 38

Table 190 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.76E-01	2.91E-02	6.00E-01	3.02E-02	8.28E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	8.02E-01	2.91E-02	1.03E+00	3.02E-02	7.68E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.24E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-2.21E-02	0.00E+00	2.21E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.36E-04	1.05E-05	9.21E-04	1.20E-05	3.02E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.64E-04
ODP	kg CFC 11 eq.	6.23E-08	7.00E-09	4.78E-08	7.15E-09	1.70E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	3.23E-03	1.48E-04	3.93E-03	2.32E-04	5.57E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	2.89E-04	1.83E-06	3.71E-04	1.81E-06	7.83E-09	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	9.47E-04	5.07E-05	7.96E-04	7.06E-05	2.23E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.47E-04
EP-terrestrial	mol N eq.	7.97E-03	5.55E-04	8.19E-03	7.76E-04	2.43E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.10E-03
POCP	kg NMVOC eq.	2.46E-03	1.66E-04	2.37E-03	2.22E-04	6.73E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	5.84E-06	6.73E-08	3.23E-06	6.71E-08	2.52E-10	0.00E+00	1.83E-08	6.24E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	1.16E+01	4.57E-01	1.48E+01	4.66E-01	1.13E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	1.92E-01	1.57E-03	2.12E-01	1.54E-03	5.03E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 191 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.58E-08	3.50E-09	2.59E-08	3.38E-09	9.03E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.95E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	2.31E-03	1.21E-01	2.34E-03	5.75E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.97E-02
ETP-fw[1]	[CTUe]	1.38E+01	3.57E-01	1.57E+01	3.58E-01	9.65E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.34E-10	9.87E-12	8.09E-10	1.10E-11	1.87E-13	0.00E+00	2.65E-12	4.07E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.00E-08	3.91E-10	8.30E-09	3.82E-10	1.43E-12	0.00E+00	7.65E-11	2.77E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.99E+00	5.23E-01	4.31E+01	4.97E-01	9.34E-04	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 192 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	5.82E-03	8.88E+00	5.72E-03	1.80E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	6.04E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	5.82E-03	8.89E+00	5.72E-03	1.80E-05	0.00E+00	1.21E-03	7.66E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	1.08E+01	4.57E-01	1.48E+01	4.66E-01	1.13E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.33E-01	0.00E+00	3.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.16E+01	4.57E-01	1.48E+01	4.66E-01	1.13E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	9.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	2.15E-02	1.11E-05	2.25E-02	1.03E-05	3.21E-08	0.00E+00	1.71E-06	2.74E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 193 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,37E-05	1,11E-06	1,35E-05	1,04E-06	4,74E-08	0,00E+00	3,42E-06	9,05E-07	0,00E+00	-3,69E-06
NHWD	[kg]	1,07E-02	2,41E-05	2,97E-03	2,26E-05	5,51E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.42E-05	3.10E-06	2.03E-03	3.17E-06	7.42E-09	0.00E+00	5.68E-07	3.92E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.28E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.67E-02	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	3.52E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 194 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	6.04E-03

Results for group 39

Table 195 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.51E-01	2.49E-02	5.70E-01	3.03E-02	9.47E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.52E-01
GWP-fossil	kg CO_2 eq.	7.76E-01	2.48E-02	1.04E+00	3.02E-02	1.34E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.29E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-2.40E-02	0.00E+00	2.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.21E-04	9.01E-06	9.58E-04	1.20E-05	3.35E-08	0.00E+00	2.22E-06	6.44E-06	0.00E+00	-9.74E-04
ODP	kg CFC 11 eq.	6.13E-08	5.98E-09	4.90E-08	7.15E-09	1.83E-11	0.00E+00	1.28E-09	2.17E-09	0.00E+00	-1.92E-08
AP	mol H^+ eq.	3.07E-03	1.26E-04	3.97E-03	2.32E-04	6.07E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.40E-03
EP-freshwater	kg P eq.	2.85E-04	1.56E-06	3.73E-04	1.81E-06	8.93E-09	0.00E+00	3.68E-07	2.95E-06	0.00E+00	-2.94E-04
EP-marine	kg N eq.	9.29E-04	4.33E-05	8.08E-04	7.06E-05	2.43E-07	0.00E+00	1.12E-05	1.65E-04	0.00E+00	-5.53E-04
EP-terrestrial	mol N eq.	7.72E-03	4.74E-04	8.33E-03	7.77E-04	2.66E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.18E-03
POCP	kg NMVOC eq.	2.37E-03	1.42E-04	2.42E-03	2.22E-04	7.35E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.46E-03
ADPm[1]	kg Sb eq.	5.35E-06	5.75E-08	3.29E-06	6.72E-08	2.68E-10	0.00E+00	1.83E-08	6.18E-08	0.00E+00	-1.68E-06
ADPf[1]	MJ	1.09E+01	3.90E-01	1.50E+01	4.67E-01	1.22E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
WDP[1]	m^3 world eq. deprived	1.71E-01	1.34E-03	2.17E-01	1.54E-03	5.29E-06	0.00E+00	2.75E-04	4.81E-03	0.00E+00	-6.91E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 196 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.47E-08	2.99E-09	2.66E-08	3.39E-09	9.75E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.97E-08
IRP[2]	[kBq U235 eq.]	1.50E-01	1.97E-03	1.22E-01	2.34E-03	6.37E-06	0.00E+00	4.33E-04	6.65E-04	0.00E+00	-1.01E-01
ETP-fw[1]	[CTUe]	1.33E+01	3.05E-01	1.59E+01	3.58E-01	1.06E-03	0.00E+00	6.64E-02	7.09E-01	0.00E+00	-1.51E+01
HTP-c[1]	[CTUh]	7.20E-10	8.43E-12	8.58E-10	1.10E-11	2.07E-13	0.00E+00	2.65E-12	3.63E-10	0.00E+00	-2.35E-10
HTP-nc[1]	[CTUh]	9.59E-09	3.34E-10	8.47E-09	3.82E-10	1.59E-12	0.00E+00	7.65E-11	2.74E-09	0.00E+00	-7.04E-09
SQP[1]	-	5.97E+00	4.47E-01	4.64E+01	4.97E-01	1.02E-03	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-2.06E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 197 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	4.97E-03	9.49E+00	5.72E-03	2.89E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	6.54E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	4.97E-03	9.50E+00	5.72E-03	2.89E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PENRE	[MJ]	1.00E+01	3.90E-01	1.50E+01	4.67E-01	1.22E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
PENRM	[MJ]	8.50E-01	0.00E+00	6.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.09E+01	3.90E-01	1.50E+01	4.67E-01	1.22E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
SM	[kg]	9.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	1.82E-02	9.47E-06	2.27E-02	1.03E-05	3.41E-08	0.00E+00	1.71E-06	2.69E-05	0.00E+00	-2.13E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 198 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,33E-05	9,44E-07	1,37E-05	1,04E-06	5,15E-08	0,00E+00	3,42E-06	7,99E-07	0,00E+00	-3,73E-06
NHWD	[kg]	1,07E-02	2,06E-05	3,00E-03	2,27E-05	6,00E-05	0,00E+00	7,45E-05	1,93E-02	0,00E+00	-1,31E-03
RWD	[kg]	5.50E-05	2.65E-06	2.03E-03	3.17E-06	8.09E-09	0.00E+00	5.68E-07	3.67E-07	0.00E+00	-4.85E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	5.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.39E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.82E-02	0.00E+00	0.00E+00	5.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	3.83E-02	0.00E+00	0.00E+00	1.00E+01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 199 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	6.54E-03

Results for group 40

Table 200 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.45E-01	2.93E-02	6.39E-01	3.02E-02	7.62E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.52E-01
GWP-fossil	kg CO_2 eq.	7.70E-01	2.92E-02	1.03E+00	3.02E-02	9.44E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.29E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.97E-02	0.00E+00	1.97E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.20E-04	1.06E-05	8.74E-04	1.20E-05	2.72E-08	0.00E+00	2.22E-06	6.44E-06	0.00E+00	-9.74E-04
ODP	kg CFC 11 eq.	6.12E-08	7.04E-09	4.63E-08	7.14E-09	1.51E-11	0.00E+00	1.28E-09	2.17E-09	0.00E+00	-1.92E-08
AP	mol H^+ eq.	3.04E-03	1.49E-04	3.87E-03	2.32E-04	4.97E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.40E-03
EP-freshwater	kg P eq.	2.84E-04	1.84E-06	3.68E-04	1.81E-06	7.19E-09	0.00E+00	3.68E-07	2.95E-06	0.00E+00	-2.94E-04
EP-marine	kg N eq.	9.25E-04	5.10E-05	7.78E-04	7.05E-05	1.99E-07	0.00E+00	1.12E-05	1.65E-04	0.00E+00	-5.53E-04
EP-terrestrial	mol N eq.	7.67E-03	5.58E-04	8.00E-03	7.75E-04	2.17E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.17E-03
POCP	kg NMVOC eq.	2.35E-03	1.67E-04	2.30E-03	2.21E-04	6.01E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.46E-03
ADPm[1]	kg Sb eq.	5.32E-06	6.76E-08	3.15E-06	6.70E-08	2.21E-10	0.00E+00	1.83E-08	6.18E-08	0.00E+00	-1.68E-06
ADPf[1]	MJ	1.06E+01	4.59E-01	1.47E+01	4.65E-01	1.00E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
WDP[1]	m^3 world eq. deprived	1.68E-01	1.58E-03	2.06E-01	1.54E-03	4.39E-06	0.00E+00	2.75E-04	4.81E-03	0.00E+00	-6.91E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 201 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.45E-08	3.52E-09	2.49E-08	3.38E-09	8.01E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.97E-08
IRP[2]	[kBq U235 eq.]	1.50E-01	2.32E-03	1.20E-01	2.33E-03	5.18E-06	0.00E+00	4.33E-04	6.65E-04	0.00E+00	-1.01E-01
ETP-fw[1]	[CTUe]	1.32E+01	3.59E-01	1.55E+01	3.57E-01	8.64E-04	0.00E+00	6.64E-02	7.09E-01	0.00E+00	-1.51E+01
HTP-c[1]	[CTUh]	7.20E-10	9.92E-12	7.43E-10	1.10E-11	1.68E-13	0.00E+00	2.65E-12	3.64E-10	0.00E+00	-2.35E-10
HTP-nc[1]	[CTUh]	9.56E-09	3.93E-10	8.08E-09	3.81E-10	1.29E-12	0.00E+00	7.65E-11	2.74E-09	0.00E+00	-7.04E-09
SQP[1]	-	5.99E+00	5.26E-01	3.87E+01	4.96E-01	8.32E-04	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-2.06E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 202 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.16E+00	5.85E-03	8.08E+00	5.71E-03	2.09E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	5.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.16E+00	5.85E-03	8.08E+00	5.71E-03	2.09E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PENRE	[MJ]	9.75E+00	4.59E-01	1.47E+01	4.65E-01	1.00E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
PENRM	[MJ]	8.50E-01	0.00E+00	4.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.06E+01	4.59E-01	1.47E+01	4.65E-01	1.00E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
SM	[kg]	9.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.01E-03	1.11E-05	2.26E-02	1.03E-05	2.82E-08	0.00E+00	1.71E-06	2.69E-05	0.00E+00	-2.13E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 203 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,33E-05	1,11E-06	1,31E-05	1,04E-06	4,22E-08	0,00E+00	3,42E-06	8,00E-07	0,00E+00	-3,73E-06
NHWD	[kg]	1,07E-02	2,42E-05	2,94E-03	2,26E-05	4,92E-05	0,00E+00	7,45E-05	1,93E-02	0,00E+00	-1,31E-03
RWD	[kg]	5.50E-05	3.12E-06	2.03E-03	3.17E-06	6.62E-09	0.00E+00	5.68E-07	3.68E-07	0.00E+00	-4.85E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.14E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.49E-02	0.00E+00	0.00E+00	5.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	3.14E-02	0.00E+00	0.00E+00	1.00E+01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 204 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	5.37E-03

Results for group 41

Table 205 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.19E+00	7.74E-02	7.85E-01	3.00E-02	6.75E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.49E-01
GWP-fossil	kg CO_2 eq.	1.13E+00	7.73E-02	9.90E-01	3.00E-02	1.15E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.27E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.08E-02	0.00E+00	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.33E-04	2.80E-05	6.98E-04	1.19E-05	1.85E-08	0.00E+00	2.22E-06	6.45E-06	0.00E+00	-9.69E-04
ODP	kg CFC 11 eq.	6.23E-08	1.86E-08	4.06E-08	7.10E-09	9.12E-12	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.91E-08
AP	mol H^+ eq.	4.54E-03	3.93E-04	3.65E-03	2.30E-04	3.30E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.39E-03
EP-freshwater	kg P eq.	3.16E-04	4.85E-06	3.56E-04	1.80E-06	5.28E-09	0.00E+00	3.68E-07	2.96E-06	0.00E+00	-2.92E-04
EP-marine	kg N eq.	1.14E-03	1.35E-04	7.16E-04	7.01E-05	1.37E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.50E-04
EP-terrestrial	mol N eq.	1.04E-02	1.47E-03	7.30E-03	7.71E-04	1.47E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.14E-03
POCP	kg NMVOC eq.	3.64E-03	4.40E-04	2.04E-03	2.20E-04	4.01E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.46E-03
ADPm[1]	kg Sb eq.	7.48E-06	1.79E-07	2.85E-06	6.67E-08	1.38E-10	0.00E+00	1.83E-08	6.21E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	2.41E+01	1.21E+00	1.40E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.09E+00
WDP[1]	m^3 world eq. deprived	3.62E-01	4.18E-03	1.83E-01	1.53E-03	3.83E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.87E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 206 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.62E-08	9.31E-09	2.15E-08	3.36E-09	4.76E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.96E-08
IRP[2]	[kBq U235 eq.]	1.37E-01	6.14E-03	1.16E-01	2.32E-03	3.23E-06	0.00E+00	4.33E-04	6.67E-04	0.00E+00	-1.00E-01
ETP-fw[1]	[CTUe]	1.62E+01	9.48E-01	1.47E+01	3.56E-01	8.07E-04	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.50E+01
HTP-c[1]	[CTUh]	7.41E-10	2.62E-11	5.01E-10	1.09E-11	1.40E-13	0.00E+00	2.65E-12	3.85E-10	0.00E+00	-2.34E-10
HTP-nc[1]	[CTUh]	1.15E-08	1.04E-09	7.27E-09	3.79E-10	1.04E-12	0.00E+00	7.65E-11	2.75E-09	0.00E+00	-7.01E-09
SQP[1]	-	5.54E+00	1.39E+00	2.25E+01	4.93E-01	4.70E-04	0.00E+00	7.16E-02	4.94E-02	0.00E+00	-2.05E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 207 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.13E+00	1.55E-02	5.10E+00	5.68E-03	2.50E-05	0.00E+00	1.21E-03	7.63E-03	0.00E+00	-7.79E+00
PERM	[MJ]	0.00E+00	0.00E+00	2.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.13E+00	1.55E-02	5.11E+00	5.68E-03	2.50E-05	0.00E+00	1.21E-03	7.63E-03	0.00E+00	-7.79E+00
PENRE	[MJ]	2.33E+01	1.21E+00	1.40E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.09E+00
PENRM	[MJ]	8.42E-01	0.00E+00	4.74E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.41E+01	1.21E+00	1.40E+01	4.63E-01	5.77E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.09E+00
SM	[kg]	7.92E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.79E-01	2.95E-05	2.29E-02	1.03E-05	1.86E-08	0.00E+00	1.71E-06	2.71E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 208 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,33E-05	2,94E-06	1,19E-05	1,03E-06	2,33E-08	0,00E+00	3,42E-06	8,51E-07	0,00E+00	-3,71E-06
NHWD	[kg]	9,48E-03	6,39E-05	2,80E-03	2,25E-05	2,78E-05	0,00E+00	7,45E-05	1,92E-02	0,00E+00	-1,30E-03
RWD	[kg]	5.08E-05	8.24E-06	2.03E-03	3.15E-06	3.81E-09	0.00E+00	5.68E-07	3.80E-07	0.00E+00	-4.84E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	7.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	6.32E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	8.36E-03	0.00E+00	0.00E+00	4.98E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	1.76E-02	0.00E+00	0.00E+00	9.96E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 209 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	2.95E-03

Results for group 42

Table 210 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	8.67E-01	1.51E-02	7.51E-01	3.01E-02	9.81E-04	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.52E-01
GWP-fossil	kg CO_2 eq.	7.93E-01	1.51E-02	9.98E-01	3.00E-02	1.86E-04	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.29E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.31E-02	0.00E+00	1.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	8.24E-04	5.46E-06	7.40E-04	1.19E-05	2.46E-08	0.00E+00	2.22E-06	6.44E-06	0.00E+00	-9.74E-04
ODP	kg CFC 11 eq.	6.13E-08	3.63E-09	4.20E-08	7.11E-09	1.15E-11	0.00E+00	1.28E-09	2.17E-09	0.00E+00	-1.92E-08
AP	mol H^+ eq.	3.13E-03	7.66E-05	3.70E-03	2.31E-04	4.35E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.40E-03
EP-freshwater	kg P eq.	2.85E-04	9.46E-07	3.59E-04	1.80E-06	7.27E-09	0.00E+00	3.68E-07	2.95E-06	0.00E+00	-2.94E-04
EP-marine	kg N eq.	9.38E-04	2.63E-05	7.31E-04	7.02E-05	1.83E-07	0.00E+00	1.12E-05	1.65E-04	0.00E+00	-5.53E-04
EP-terrestrial	mol N eq.	7.83E-03	2.87E-04	7.47E-03	7.72E-04	1.96E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.18E-03
POCP	kg NMVOC eq.	2.42E-03	8.59E-05	2.10E-03	2.21E-04	5.29E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.46E-03
ADPm[1]	kg Sb eq.	5.44E-06	3.48E-08	2.92E-06	6.68E-08	1.76E-10	0.00E+00	1.83E-08	6.18E-08	0.00E+00	-1.68E-06
ADPf[1]	MJ	1.15E+01	2.37E-01	1.42E+01	4.64E-01	7.14E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
WDP[1]	m^3 world eq. deprived	1.78E-01	8.15E-04	1.88E-01	1.53E-03	5.46E-06	0.00E+00	2.75E-04	4.81E-03	0.00E+00	-6.91E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 211 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4.52E-08	1.81E-09	2.23E-08	3.37E-09	5.97E-12	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.97E-08
IRP[2]	[kBq U235 eq.]	1.49E-01	1.20E-03	1.17E-01	2.33E-03	4.17E-06	0.00E+00	4.33E-04	6.65E-04	0.00E+00	-1.01E-01
ETP-fw[1]	[CTUe]	1.34E+01	1.85E-01	1.49E+01	3.56E-01	1.18E-03	0.00E+00	6.64E-02	7.09E-01	0.00E+00	-1.51E+01
HTP-c[1]	[CTUh]	7.21E-10	5.11E-12	5.57E-10	1.09E-11	2.00E-13	0.00E+00	2.65E-12	3.63E-10	0.00E+00	-2.35E-10
HTP-nc[1]	[CTUh]	9.66E-09	2.02E-10	7.46E-09	3.80E-10	1.47E-12	0.00E+00	7.65E-11	2.74E-09	0.00E+00	-7.04E-09
SQP[1]	-	5.94E+00	2.71E-01	2.62E+01	4.94E-01	5.78E-04	0.00E+00	7.16E-02	4.92E-02	0.00E+00	-2.06E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 212 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.15E+00	3.01E-03	5.80E+00	5.69E-03	4.02E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.58E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.15E+00	3.01E-03	5.80E+00	5.69E-03	4.02E-05	0.00E+00	1.21E-03	7.61E-03	0.00E+00	-7.83E+00
PENRE	[MJ]	1.07E+01	2.37E-01	1.42E+01	4.64E-01	7.14E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
PENRM	[MJ]	8.50E-01	0.00E+00	7.47E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.15E+01	2.37E-01	1.42E+01	4.64E-01	7.14E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.12E+00
SM	[kg]	9.80E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	4.57E-02	5.74E-06	2.35E-02	1.03E-05	2.43E-08	0.00E+00	1.71E-06	2.69E-05	0.00E+00	-2.13E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 213 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,33E-05	5,73E-07	1,22E-05	1,03E-06	2,84E-08	0,00E+00	3,42E-06	7,99E-07	0,00E+00	-3,73E-06
NHWD	[kg]	1,07E-02	1,25E-05	2,83E-03	2,25E-05	3,41E-05	0,00E+00	7,45E-05	1,93E-02	0,00E+00	-1,31E-03
RWD	[kg]	5.47E-05	1.61E-06	2.03E-03	3.15E-06	4.72E-09	0.00E+00	5.68E-07	3.67E-07	0.00E+00	-4.85E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.67E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.02E-02	0.00E+00	0.00E+00	5.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.15E-02	0.00E+00	0.00E+00	1.00E+01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 214 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.58E-03

Results for group 43

Table 215 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.20E+00	7.68E-02	4.87E-01	3.04E-02	1.09E-03	0.00E+00	5.46E-03	2.99E+00	0.00E+00	-4.47E-01
GWP-fossil	kg CO_2 eq.	1.14E+00	7.67E-02	1.06E+00	3.03E-02	9.97E-05	0.00E+00	5.45E-03	2.99E+00	0.00E+00	-4.25E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-2.92E-02	0.00E+00	2.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	9.39E-04	2.78E-05	1.06E-03	1.20E-05	3.98E-08	0.00E+00	2.22E-06	6.46E-06	0.00E+00	-9.65E-04
ODP	kg CFC 11 eq.	6.28E-08	1.85E-08	5.22E-08	7.18E-09	2.24E-11	0.00E+00	1.28E-09	2.18E-09	0.00E+00	-1.90E-08
AP	mol H^+ eq.	4.62E-03	3.90E-04	4.10E-03	2.33E-04	7.33E-07	0.00E+00	3.09E-05	3.34E-04	0.00E+00	-2.37E-03
EP-freshwater	kg P eq.	3.18E-04	4.82E-06	3.80E-04	1.82E-06	1.03E-08	0.00E+00	3.68E-07	2.97E-06	0.00E+00	-2.91E-04
EP-marine	kg N eq.	1.15E-03	1.34E-04	8.44E-04	7.08E-05	2.94E-07	0.00E+00	1.12E-05	1.64E-04	0.00E+00	-5.48E-04
EP-terrestrial	mol N eq.	1.05E-02	1.46E-03	8.73E-03	7.79E-04	3.20E-06	0.00E+00	1.22E-04	1.74E-03	0.00E+00	-7.11E-03
POCP	kg NMVOC eq.	3.68E-03	4.37E-04	2.57E-03	2.23E-04	8.87E-07	0.00E+00	3.50E-05	4.65E-04	0.00E+00	-1.45E-03
ADPm[1]	kg Sb eq.	7.70E-06	1.77E-07	3.46E-06	6.74E-08	3.32E-10	0.00E+00	1.83E-08	6.23E-08	0.00E+00	-1.67E-06
ADPf[1]	MJ	2.45E+01	1.21E+00	1.53E+01	4.68E-01	1.48E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
WDP[1]	m^3 world eq. deprived	3.71E-01	4.15E-03	2.30E-01	1.55E-03	6.65E-06	0.00E+00	2.75E-04	4.82E-03	0.00E+00	-6.84E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 216 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5.68E-08	9.24E-09	2.86E-08	3.40E-09	1.19E-11	0.00E+00	6.03E-10	2.65E-09	0.00E+00	-1.96E-08
IRP[2]	[kBq U235 eq.]	1.36E-01	6.10E-03	1.25E-01	2.35E-03	7.57E-06	0.00E+00	4.33E-04	6.69E-04	0.00E+00	-9.98E-02
ETP-fw[1]	[CTUe]	1.64E+01	9.42E-01	1.64E+01	3.59E-01	1.27E-03	0.00E+00	6.64E-02	7.10E-01	0.00E+00	-1.49E+01
HTP-c[1]	[CTUh]	7.48E-10	2.60E-11	9.96E-10	1.10E-11	2.47E-13	0.00E+00	2.65E-12	4.05E-10	0.00E+00	-2.33E-10
HTP-nc[1]	[CTUh]	1.17E-08	1.03E-09	8.93E-09	3.83E-10	1.89E-12	0.00E+00	7.65E-11	2.76E-09	0.00E+00	-6.97E-09
SQP[1]	-	5.54E+00	1.38E+00	5.56E+01	4.99E-01	1.23E-03	0.00E+00	7.16E-02	4.96E-02	0.00E+00	-2.04E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 217 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	1.13E+00	1.53E-02	1.12E+01	5.74E-03	2.35E-05	0.00E+00	1.21E-03	7.65E-03	0.00E+00	-7.75E+00
PERM	[MJ]	0.00E+00	0.00E+00	7.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.13E+00	1.53E-02	1.12E+01	5.74E-03	2.35E-05	0.00E+00	1.21E-03	7.65E-03	0.00E+00	-7.75E+00
PENRE	[MJ]	2.36E+01	1.21E+00	1.53E+01	4.68E-01	1.48E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
PENRM	[MJ]	8.34E-01	0.00E+00	5.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.45E+01	1.21E+00	1.53E+01	4.68E-01	1.48E-03	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-6.06E+00
SM	[kg]	7.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	6.80E-01	2.93E-05	2.26E-02	1.04E-05	4.24E-08	0.00E+00	1.71E-06	2.73E-05	0.00E+00	-2.12E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 218 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,35E-05	2,92E-06	1,44E-05	1,04E-06	6,25E-08	0,00E+00	3,42E-06	8,99E-07	0,00E+00	-3,70E-06
NHWD	[kg]	9,45E-03	6,35E-05	3,08E-03	2,27E-05	7,26E-05	0,00E+00	7,45E-05	1,91E-02	0,00E+00	-1,29E-03
RWD	[kg]	5.04E-05	8.19E-06	2.03E-03	3.18E-06	9.77E-09	0.00E+00	5.68E-07	3.91E-07	0.00E+00	-4.82E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.27E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	1.69E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	2.20E-02	0.00E+00	0.00E+00	4.97E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	4.64E-02	0.00E+00	0.00E+00	9.89E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 219 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	7.95E-03

Results for group 44

Table 220 Environmental impacts per 1 kg.

ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.86E+00	1.69E-02	7.61E-01	3.01E-02	1.21E-03	0.00E+00	5.46E-03	3.03E+00	0.00E+00	-4.31E-01
GWP-fossil	kg CO_2 eq.	1.80E+00	1.69E-02	9.96E-01	3.00E-02	2.54E-04	0.00E+00	5.45E-03	3.03E+00	0.00E+00	-4.09E-01
GWP-biogenic	kg CO_2 eq.	0.00E+00	0.00E+00	-1.27E-02	0.00E+00	1.27E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	7.54E-04	6.12E-06	7.30E-04	1.19E-05	2.74E-08	0.00E+00	2.22E-06	6.35E-06	0.00E+00	-9.30E-04
ODP	kg CFC 11 eq.	5.15E-08	4.06E-09	4.16E-08	7.11E-09	1.20E-11	0.00E+00	1.28E-09	2.15E-09	0.00E+00	-1.84E-08
AP	mol H^+ eq.	7.10E-03	8.58E-05	3.69E-03	2.31E-04	4.78E-07	0.00E+00	3.09E-05	3.38E-04	0.00E+00	-2.29E-03
EP-freshwater	kg P eq.	2.29E-04	1.06E-06	3.58E-04	1.80E-06	8.45E-09	0.00E+00	3.68E-07	2.98E-06	0.00E+00	-2.80E-04
EP-marine	kg N eq.	1.45E-03	2.94E-05	7.27E-04	7.02E-05	2.04E-07	0.00E+00	1.12E-05	1.68E-04	0.00E+00	-5.28E-04
EP-terrestrial	mol N eq.	1.41E-02	3.22E-04	7.42E-03	7.72E-04	2.17E-06	0.00E+00	1.22E-04	1.77E-03	0.00E+00	-6.85E-03
POCP	kg NMVOC eq.	5.24E-03	9.62E-05	2.09E-03	2.20E-04	5.82E-07	0.00E+00	3.50E-05	4.70E-04	0.00E+00	-1.40E-03
ADPm[1]	kg Sb eq.	4.95E-06	3.90E-08	2.90E-06	6.68E-08	1.86E-10	0.00E+00	1.83E-08	6.22E-08	0.00E+00	-1.61E-06
ADPf[1]	MJ	3.47E+01	2.65E-01	1.42E+01	4.64E-01	7.18E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.84E+00
WDP[1]	m^3 world eq. deprived	8.39E-01	9.12E-04	1.87E-01	1.53E-03	6.59E-06	0.00E+00	2.75E-04	4.75E-03	0.00E+00	-6.60E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.										

Table 221 Additional environmental impacts per 1 kg.

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	8.55E-08	2.03E-09	2.21E-08	3.36E-09	6.12E-12	0.00E+00	6.03E-10	2.67E-09	0.00E+00	-1.89E-08
IRP[2]	[kBq U235 eq.]	1.08E-01	1.34E-03	1.16E-01	2.33E-03	4.45E-06	0.00E+00	4.33E-04	6.66E-04	0.00E+00	-9.62E-02
ETP-fw[1]	[CTUe]	1.57E+01	2.07E-01	1.49E+01	3.56E-01	1.47E-03	0.00E+00	6.64E-02	1.21E+00	0.00E+00	-1.44E+01
HTP-c[1]	[CTUh]	7.64E-10	5.72E-12	5.42E-10	1.09E-11	2.40E-13	0.00E+00	2.65E-12	4.65E-10	0.00E+00	-2.25E-10
HTP-nc[1]	[CTUh]	1.06E-08	2.27E-10	7.41E-09	3.80E-10	1.75E-12	0.00E+00	7.65E-11	2.92E-09	0.00E+00	-6.72E-09
SQP[1]	-	4.60E+00	3.03E-01	2.52E+01	4.94E-01	5.74E-04	0.00E+00	7.16E-02	5.02E-02	0.00E+00	-1.97E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality										
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										

Table 222 Resource use per 1 kg.

RESOURCE USE PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	9.46E-01	3.37E-03	5.61E+00	5.69E-03	5.45E-05	0.00E+00	1.21E-03	7.63E-03	0.00E+00	-7.48E+00
PERM	[MJ]	0.00E+00	0.00E+00	3.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	9.46E-01	3.37E-03	5.61E+00	5.69E-03	5.45E-05	0.00E+00	1.21E-03	7.63E-03	0.00E+00	-7.48E+00
PENRE	[MJ]	3.38E+01	2.65E-01	1.42E+01	4.64E-01	7.18E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.84E+00
PENRM	[MJ]	8.41E-01	0.00E+00	9.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	3.47E+01	2.65E-01	1.42E+01	4.64E-01	7.18E-04	0.00E+00	8.39E-02	1.33E-01	0.00E+00	-5.84E+00
SM	[kg]	6.74E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	5.57E-02	6.43E-06	2.40E-02	1.03E-05	2.63E-08	0.00E+00	1.71E-06	2.77E-05	0.00E+00	-2.05E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										

Table 223 Waste categories and output flows per 1 kg.

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Indicator	**Unit**	**A1**	**A2**	**A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,12E-05	6,41E-07	1,22E-05	1,03E-06	2,77E-08	0,00E+00	3,42E-06	1,07E-06	0,00E+00	-3,56E-06
NHWD	[kg]	7,87E-03	1,40E-05	2,83E-03	2,25E-05	3,39E-05	0,00E+00	7,45E-05	1,83E-02	0,00E+00	-1,25E-03
RWD	[kg]	4.03E-05	1.80E-06	2.03E-03	3.15E-06	4.76E-09	0.00E+00	5.68E-07	4.07E-07	0.00E+00	-4.67E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	1.48E-01	0.00E+00	2.07E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	8.71E-03	0.00E+00	7.47E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	1.21E-02	0.00E+00	1.01E-02	0.00E+00	0.00E+00	4.81E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.48E-02	0.00E+00	2.12E-02	0.00E+00	0.00E+00	9.52E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Export thermal energy										

Table 224 Biogenic carbon content at factory gate per 1 kg.

BIOGENIC CARBON CONTENT PER KG		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	3.47E-03

Additional information

LCA interpretation

In Figure 2 the contribution to each module (A1, A2, A3, A4, A5, C1, C2, C3, C4 and D) to each impact category for product group 1 (containing concrete wedges) is presented. The results show a similar pattern for all 44 groups, where module A1 contributes the most to all impact categories. For Climate change – Total module A1 contributes with 44% and module C3 with 40%. The contribution from A1 occurs from the production of the materials (PPG (glass-filled polypropylene) and additives) and the contribution from C3 occurs from the waste incineration of the product at EOL. Module A3 contributes with 15% in this category. For all other categories, module A1 contributes the most ranging between 57-88%.

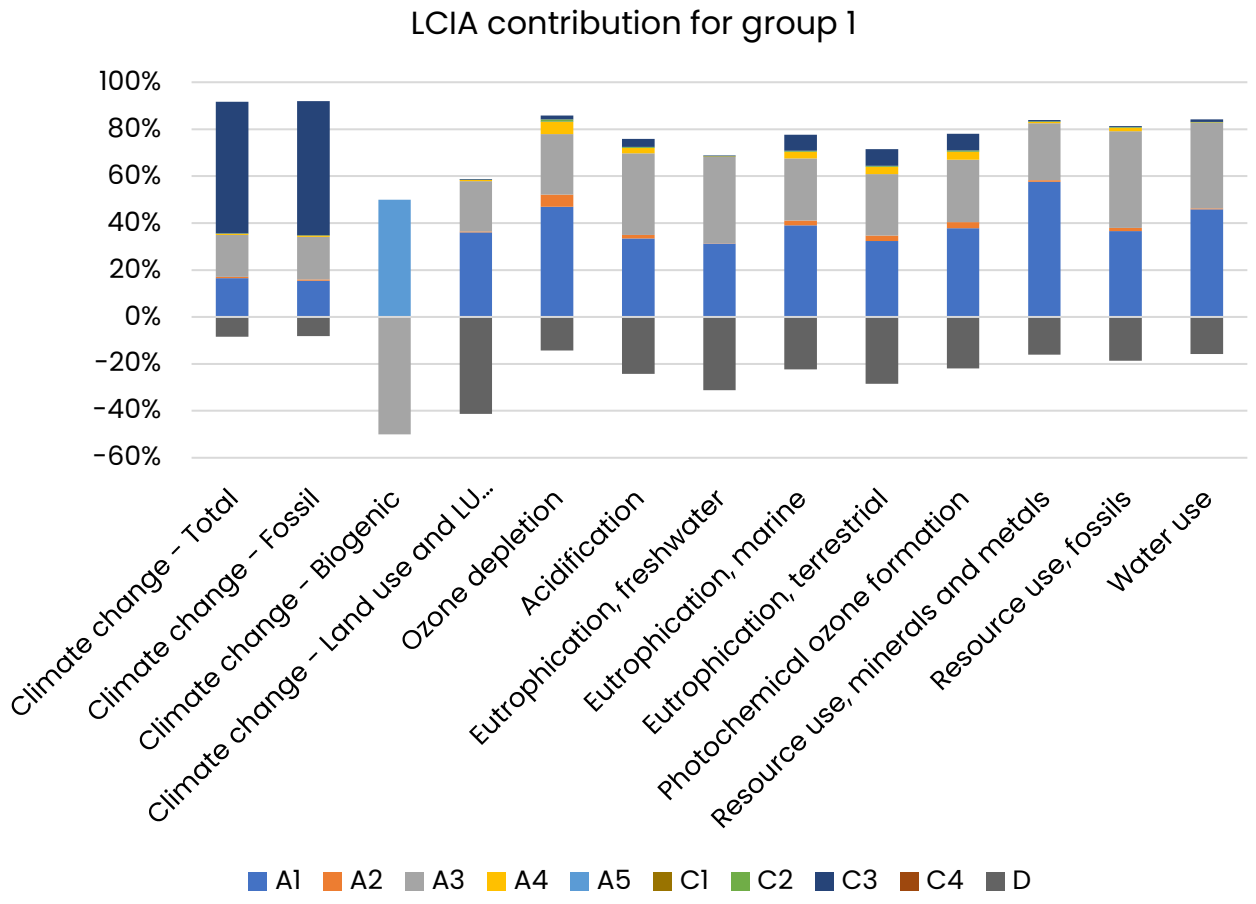


Figure 2 Contribution analysis of group 1 (Concrete wedges) for each declared module.

Figure 3 shows the contribution of all declared modules to GWP-total for each declared average product. The chart shows that modules A1 and C3 contribute the most for all groups. The instances where A1 is lower than C3 is because of a low contribution from the recycled material in A1. The contribution from module A3 is also noteworthy, which primarily arises from Harpun's electricity consumption. Modules A2, A4, A5, C2 and C4 contribute insignificantly towards the results for all groups. The avoided emissions from module D are also significant.

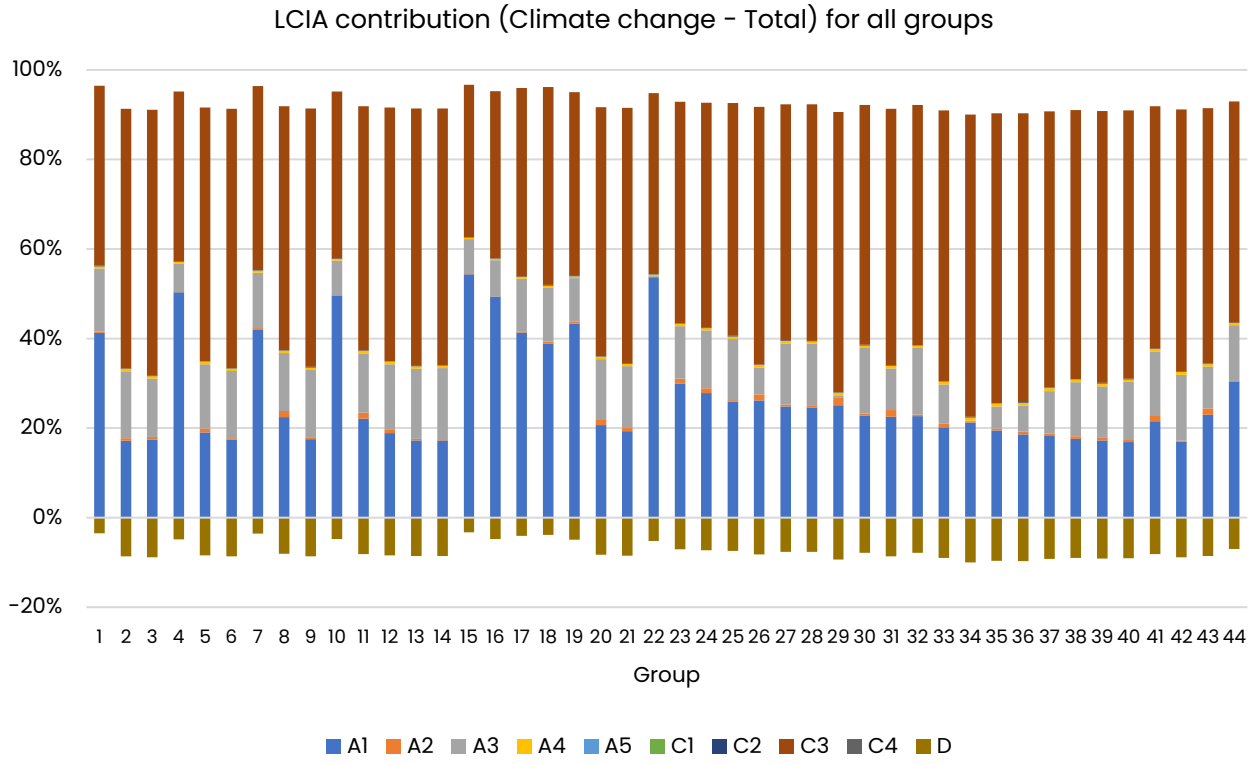


Figure 3 GWP-total contribution for all groups.

Variability in the declared average datasets:

The analysis encompassed 179 products, which were categorized into 44 average product groups. This was done using a methodology that guaranteed the core indicators' results (across all declared modules: A1-A5 and C1-C4 excl. D) for each product did not deviate by +/-10% of the group's average core indicator score. This approach is based on an unweighted simple average. Consequently, the variation in individual products within each average product group does not exceed +/-10% from the unweighted simple average..

Technical information on scenarios

See Table 225 for information related to module A4.

Table 225 Information related to module A4.

Scenario information	Value	Unit
Fuel type	Diesel	-
Vehicle type	Freight lorry > 32 t	-
Transport distance	300	km
Capacity utilisation (including empty runs)	50	%
Gross density of products transported	See data set	kg/m3

See Table 226 for information related to module A5.

Table 226 Information related to module A5. Declared unit: 1 kg.

Declared product	Ancillary materials	Water use	Other resource use	Energy type and consumption	Euro pallet waste	Cardboard box waste	Plastic packaging waste	Output materials	Direct emissions to air, soil or water	Unit
1	-	-	-	-	2.33E-03	1.39E-03	3.63E-04	-	-	kg
2	-	-	-	-	6.74E-03	1.02E-05	2.65E-06	-	-	kg
3	-	-	-	-	1.09E-02	1.21E-06	3.14E-07	-	-	kg
4	-	-	-	-	1.53E-02	6.39E-05	1.66E-05	-	-	kg
5	-	-	-	-	7.16E-03	3.33E-04	8.68E-05	-	-	kg
6	-	-	-	-	6.55E-03	8.37E-06	2.18E-06	-	-	kg
7	-	-	-	-	7.15E-03	1.50E-05	3.91E-06	-	-	kg
8	-	-	-	-	8.93E-03	7.01E-05	1.83E-05	-	-	kg
9	-	-	-	-	6.16E-03	5.01E-05	1.31E-05	-	-	kg
10	-	-	-	-	1.08E-02	3.24E-06	8.45E-07	-	-	kg
11	-	-	-	-	8.41E-03	1.85E-06	4.83E-07	-	-	kg
12	-	-	-	-	6.84E-03	4.24E-06	1.10E-06	-	-	kg
13	-	-	-	-	5.10E-03	1.30E-05	3.39E-06	-	-	kg
14	-	-	-	-	4.71E-03	1.41E-05	3.66E-06	-	-	kg
15	-	-	-	-	7.82E-03	1.79E-05	4.67E-06	-	-	kg
16	-	-	-	-	9.68E-03	4.03E-05	1.05E-05	-	-	kg
17	-	-	-	-	2.99E-03	2.42E-04	6.31E-05	-	-	kg
18	-	-	-	-	3.53E-03	1.73E-04	4.50E-05	-	-	kg
19	-	-	-	-	8.13E-03	1.59E-05	4.02E-06	-	-	kg
20	-	-	-	-	8.19E-03	1.76E-04	4.58E-05	-	-	kg
21	-	-	-	-	8.72E-03	4.47E-05	1.16E-05	-	-	kg
22	-	-	-	-	3.38E-02	1.01E-05	2.64E-06	-	-	kg
23	-	-	-	-	1.03E-02	0.00E+00	9.71E-06	-	-	kg
24	-	-	-	-	7.98E-03	0.00E+00	1.10E-06	-	-	kg
25	-	-	-	-	7.45E-03	0.00E+00	1.70E-05	-	-	kg
26	-	-	-	-	2.36E-02	0.00E+00	1.38E-05	-	-	kg
27	-	-	-	-	7.64E-03	0.00E+00	1.84E-06	-	-	kg
28	-	-	-	-	7.33E-03	0.00E+00	8.95E-06	-	-	kg
29	-	-	-	-	3.37E-02	3.06E-06	1.80E-06	-	-	kg
30	-	-	-	-	5.92E-03	0.00E+00	5.48E-07	-	-	kg
31	-	-	-	-	1.71E-02	0.00E+00	9.24E-08	-	-	kg
32	-	-	-	-	5.45E-03	0.00E+00	5.72E-05	-	-	kg
33	-	-	-	-	1.91E-02	4.31E-05	1.30E-05	-	-	kg
34	-	-	-	-	3.43E-02	2.78E-05	7.24E-06	-	-	kg

Declared product	Ancillary materials	Water use	Other resource use	Energy type and consumption	Euro pallet waste	Cardboard box waste	Plastic packaging waste	Output materials	Direct emissions to air, soil or water	Unit
35	-	-	-	-	2.63E-02	0.00E+00	6.28E-06	-	-	kg
36	-	-	-	-	2.48E-02	5.39E-06	1.40E-06	-	-	kg
37	-	-	-	-	1.79E-02	5.33E-05	1.39E-05	-	-	kg
38	-	-	-	-	1.28E-02	4.38E-07	9.08E-07	-	-	kg
39	-	-	-	-	1.39E-02	0.00E+00	2.33E-05	-	-	kg
40	-	-	-	-	1.14E-02	0.00E+00	1.23E-05	-	-	kg
41	-	-	-	-	6.16E-03	1.27E-04	3.32E-05	-	-	kg
42	-	-	-	-	7.39E-03	2.31E-04	6.02E-05	-	-	kg
43	-	-	-	-	1.69E-02	2.11E-06	5.50E-07	-	-	kg
44	-	-	-	-	7.06E-03	3.45E-04	8.99E-05	-	-	kg

See Table 227 for information related to module C2-C4.

Table 227 Information related to end-of-life (C1-C4) per 1 kg for all product groups. Declared unit: 1 kg.

Group no.	Collected separately	Collected with mixed waste	For reuse	For recycling	For energy recovery	For final disposal	Unit	Assumptions for scenario development
1	0	1	0	0	1	0	kg	The current practice in Denmark for small plastic elements in construction works is to discard with residual waste, because it is not considered feasible to visually distinguish which products are recyclable and which are not. Therefore 100% of the declared products are incinerated at EOL. Sources: personal communication with a demolition company and report by Dansk Industri[3].
2	0	1	0	0	1	0	kg	
3	0	1	0	0	1	0	kg	
4	0	1	0	0	1	0	kg	
5	0	1	0	0	1	0	kg	
6	0	1	0	0	1	0	kg	
7	0	1	0	0	1	0	kg	
8	0	1	0	0	1	0	kg	
9	0	1	0	0	1	0	kg	
10	0	1	0	0	1	0	kg	
11	0	1	0	0	1	0	kg	
12	0	1	0	0	1	0	kg	
13	0	1	0	0	1	0	kg	
14	0	1	0	0	1	0	kg	
15	0	1	0	0	1	0	kg	
16	0	1	0	0	1	0	kg	
17	0	1	0	0	1	0	kg	
18	0	1	0	0	1	0	kg	
19	0	1	0	0	1	0	kg	
20	0	1	0	0	1	0	kg	
21	0	1	0	0	1	0	kg	
22	0	1	0	0	1	0	kg	
23	0	1	0	0	1	0	kg	
24	0	1	0	0	1	0	kg	
25	0	1	0	0	1	0	kg	
26	0	1	0	0	1	0	kg	
27	0	1	0	0	1	0	kg	
28	0	1	0	0	1	0	kg	
29	0	1	0	0	1	0	kg	

[3] Kortlægning, kvalitetsvurdering og optimering af plastaffald fra byggevarer (kvob) Dansk Industri (2020)

Group no.	Collected separately	Collected with mixed waste	For reuse	For recycling	For energy recovery	For final disposal	Unit	Assumptions for scenario development
30	0	1	0	0	1	0	kg	
31	0	1	0	0	1	0	kg	
32	0	1	0	0	1	0	kg	
33	0	1	0	0	1	0	kg	
34	0	1	0	0	1	0	kg	
35	0	1	0	0	1	0	kg	
36	0	1	0	0	1	0	kg	
37	0	1	0	0	1	0	kg	
38	0	1	0	0	1	0	kg	
39	0	1	0	0	1	0	kg	
40	0	1	0	0	1	0	kg	
41	0	1	0	0	1	0	kg	
42	0	1	0	0	1	0	kg	
43	0	1	0	0	1	0	kg	
44	0	1	0	0	1	0	kg	

See Table 228 for information regarding the average re-use, recovery and recycling potentials in module D for the 44 average products.

Table 228 Average re-use, recovery, and recycling potentials (D) for the 44 average products. Results per declared unit: 1 kg.

Group no.	Substituted material (kg)	Energy recovery, electricity (MJ)	Energy recovery, heat (MJ)
1	0	6.96	43.86
2	0	9.92	46.83
3	0	278.20	1,311.52
4	0	8.98	45.88
5	0	29.64	140.35
6	0	4.97	23.42
7	0	24.36	153.53
8	0	148.17	701.73
9	0	34.73	163.90
10	0	4.50	22.95
11	0	19.84	93.65
12	0	4.95	23.40
13	0	4.97	23.42
14	0	4.97	23.42
15	0	3.03	21.48
16	0	4.48	22.93
17	0	3.35	19.47
18	0	3.02	18.45
19	0	7.88	44.79
20	0	4.96	23.41
21	0	4.94	23.39
22	0	4.50	22.95
23	0	4.50	22.95
24	0	9.24	46.15
25	0	4.56	23.01
26	0	4.80	23.25
27	0	4.63	23.08
28	0	18.55	92.36
29	0	29.85	140.56
30	0	4.71	23.16

Group no.	Substituted material (kg)	Energy recovery, electricity (MJ)	Energy recovery, heat (MJ)
31	0	5.00	23.45
32	0	4.72	23.17
33	0	14.85	70.21
34	0	9.86	46.77
35	0	4.96	23.41
36	0	4.98	23.43
37	0	4.97	23.42
38	0	9.94	46.84
39	0	5.00	23.45
40	0	10.00	46.90
41	0	9.97	46.87
42	0	10.00	46.90
43	0	59.65	281.08
44	0	4.81	23.26

Emissions to indoor air

EN15804+A2 chapter 7.4.1 states that the absence of horizontal standards for relevant measurements prevents the EPD from providing information on the release of hazardous substances into the indoor air environment.

Emissions to soil and water

EN15804+A1 chapter 7.4.2 explains that due to the unavailability of horizontal standards for relevant measurements, the EPD cannot provide information on the discharge of hazardous substances into soil and water.

References

LCA-practitioner: BetterGreen ApS, Under Lien 3, 9000 Aalborg.

LCA software/background data: SimaPro and ecoinvent v 3.8

3rd party verifier: Linda Høibye, Life Cycle Assessment Consulting

EN 15804
DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025
DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040
DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044
DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"

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Dansk Industri (2020): https://www.danskindustri.dk/siteassets/medlemsforeninger/dansk-byggeindustri/publikationer/plastprojekt-2020-2021/innobyg_rapport_med-bilag_11-12-20.pdf?v=231109

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