### **ENVIRONMENTAL PRODUCT DECLARATION**

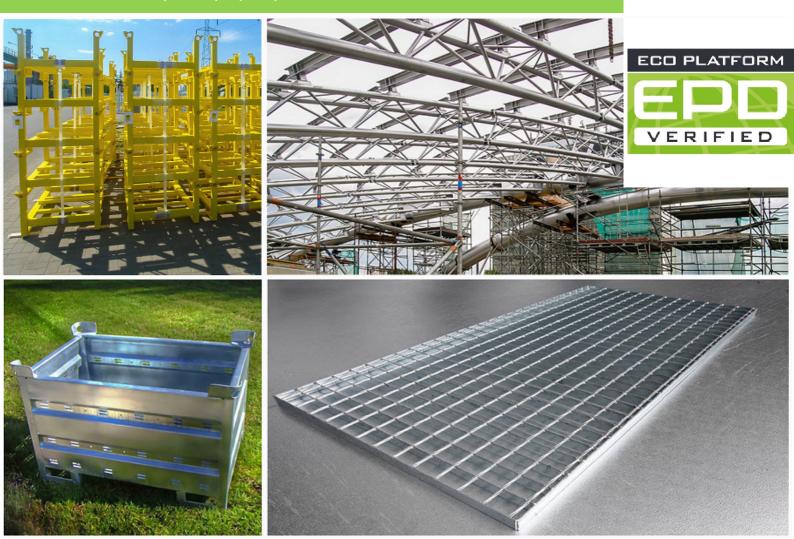
as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Mostostal Siedlce Limited liability company LP
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-MOS-20220213-CBA1-EN
Issue date	16.11.2022
Valid to	15.11.2027

### Steel structures, pallets and platform gratings + coating (optional) Mostostal Siedlce Limited liability company LP



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### **General Information**

### **Mostostal Siedlce** Limited liability company LP

### **Programme holder**

IBU - Institut Bauen und Umwelt e.V. Hegelplatz 1 10117 Berlin Germany

### **Declaration number**

EPD-MOS-20220213-CBA1-EN

### This declaration is based on the product category rules: Structural steels, 11.2017

(PCR checked and approved by the SVR)

### **Issue date**

16.11.2022

### Valid to

15.11.2027

# Man Peter

Dipl. Ing. Hans Peters (chairman of Institut Bauen und Umwelt e.V.)

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Dr. Alexander Röder (Managing Director Institut Bauen und Umwelt e.V.))

### Steel structures, pallets and platform gratings + coating (optional)

### Owner of the declaration

Mostostal Siedlce Limited liability company LP Terespolska 12 08-110 Siedlce Poland

### Declared product / declared unit

1 ton of representative steel structure, pallets or platform gratings

### Scope:

Steel alloy is the main material, used in over 98% of production and it was modelled as the mean value on the basis of the safety data sheets purchased steel received from the company.

EPD covered: galvanized structures, painted structures, duplex structures, structures without protection, galvanized pallets, galvanized gratings, and gratings without protection.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as EN 15804.



### Product

### **Product description/Product definition**

The analyzed products include steel structures, platform gratings and pallets. In addition, they may be covered with anti-corrosion protection, which is applied using hot galvanizing according to EN ISO 1461 (DIN 50976), painting or power painting in a range of colours.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation EU No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN 1090-1 and the CE-marking. For the application and use the respective national provisions apply.

### Application

Vito D'Incognito

(Independent verifier)

The products covered in the EPD:

- Galvanized structures;
- Painted structures;
- Duplex structures;
- Structures without protection;
- Galvanized pallets;
- Galvanized gratings;
- Gratings without protection.

### **Technical Data**

Mostostal Siedlce manufactures steel structures based on the technical documentation of the customer and based on the internal documentation, developed by constructors working at the Company. Documentation



is developed according to the standards: PN, DIN, EN, EUROCODES and GOST in the following languages: Polish, Russian, German and English. Used IT tools are: Robot, Staad-Pro, Microstation– Structural, Rmwin, ABCpłyta, MathCad, Tekla, Bocad, RCad, and Autocad. The maximum dimensions for indivisible components composing a product are as follows: L = 30 m, B = 6.3 m, H = 4.2 m and correspond to the weight of 64 tonnes. Steel structures are carried out according to the standards: *EN 1090-1-2, BSK 07, DIN 18800-7, DIN 15018, DS 804, DIN 19704, AWS D1.1*. Platform gratings are manufactured in accordance with *DIN 24537*.

### **Constructional data**

Name	Value	Unit
Density	7850	kg/m <sup>3</sup>
Tolerances on dimension and	EN 1090-	
	2; Annex	
shape	B, Class 2	
	EN 10025-	
Weldability	2; EN	
	10219	
Facture tougheness/brittle strength 20 degrees Celsius	27	J
Reaction to fire	A1 Class	
	EN ISO	
Durability / Corrosion protection	1461; EN	
	ISO 12944	

### LCA: Calculation rules

### **Declared Unit**

This declaration applies to 1 ton of analysed products (steel structures, pallets and platform gratings). The LCA is calculated based on averaged volume production data of the contributing plants.

### Declared unit

Boolaroa ante		
Name	Value	Unit
Declared unit	1	t

Type of EPD: Declaration of a representative product from the manufacturer's plants.

### System boundary

Type of EPD: Cradle-to-gate (with options) The system boundaries of the EPD follow the modular construction system as described by *EN 15804*. The LCA takes into account the following modules: Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 1090-2*.

### **Base materials/Ancillary materials**

Structural steels are non-or low-alloy steel products whose carbon content is amount 0.16%, Mn - 1,3%, Si 0.17%, Cr 0,04%, Ni 0.04%., Cu 0.10%, Mo, 0.01%. Iron is the main component of steel. Abrasive blasting (shot peening) and chemical treatment (etching in acids) is employed. The metallic coating according *EN 10346*: Zn<99.995%

Painting protection: using the hydrodynamic method.

This product/article/at least one partial article contains substances listed in the candidate list (date: 09.09.2022) exceeding 0.1 percentage by mass: no.

### **Reference service life**

not applicable

A1-A3: Manufacturing of pre-products, packaging, ancillary materials, transport to the factory, production including energy supply and waste handling, A4: Transport to building site,

C1:Deconstruction, demolition,

C2:Transport to waste processing plant,

C3:Waste processing,

C4: Waste disposal (incineration).

D: Potential for reuse, recovery and/or recycling (benefits for incineration and recovery of packaging materials from module A5 and envelopes incineration from module C4).

### Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

SimaPro software and databases (mainly Ecoinvent) were used as a calculation basis.

### LCA: Scenarios and additional technical information

Characteristic product properties Information on biogenic Carbon

### Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	1263.99	kg C

An average of around 85% of all steel is recycled at the end of a product's life. These values are based on expert judgement amongst the worldsteel LCA experts in 2020 (WSA). 15% of the end of life of steel was modelled as landfill.



### End of life (C1 - C4)

50% is cutting the dismantled structures with electricity and 50% is cutting the dismantled structures with welding gas.

25 m of cutting is needed for 1 ton of structures, gratings and pallets.

Transport of used products and packaging: 100 km.

Name	Value	Unit
Collected separately : packaging materials	2581	kg
Collected as mixed construction waste : steel	150	kg
Energy recovery	1290	kg
Landfilling	1440	kg

## Reuse, recovery and/or recycling potentials (D), relevant scenario information

The avoided production of primary steel sheet is considered. Resulting potential benefits and loads for metal recycling are declared in module D.



### LCA: Results

### DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODU		D; MN	CONST ON PRC STA	RUCTI DCESS				SE STAG	GE			END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	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	Х	Х	X	ND	ND	ND	MNR	MNR	MNR	ND	ND	X	Х	Х	X	Х
RESUL	_TS (	OF TH	IE LCA	- EN\	/IRON	MENT	AL IM	PACT	accor	ding t	o EN 1	5804+	A2: d	eclare	d unit	and
produc	ct	1		1												
Core Ind	licator	I	Jnit	A	I	A2	A	3	A4		C1	C2		C3	C4	D
GWP-t			:O <sub>2</sub> -Eq.]	1.74		1.97E+2		)E+3	9.72E+1		2E+0	3.19E+1	1.2	28E+1	1.23E+	
GWP-f			<u>:O<sub>2</sub>-Eq.]</u>	1.73		1.97E+2		)E+3	9.71E+1		0E+0	3.18E+1		28E+1	2.19E+	
GWP-bic GWP-li			CO <sub>2</sub> -Eq.] CO <sub>2</sub> -Eq.]	2.66E		6.53E-2 6.32E-2		E+0 2E+0	3.00E-2 2.42E-2		5E-2 8E-3	1.10E-2 9.04E-3		92E-2 29E-3	1.01E+ 4.10E-	
ODF			-C11-Eq.]	9.08		4.53E-5		3E-4	2.42L-2 2.29E-5		5E-7			26E-6	2.15E-	
AP	0	[mol	H⁺-Eq.]	8.52	E+0	7.15E-1		5E+1	7.49E-1		3E-2	1.22E-1		10E-1	2.59E-	1 -1.63E+0
EP-fresh			P-Eq.]	9.90		1.43E-3		7E-1	6.28E-4		6E-4	2.33E-4		79E-4	2.56E-	
EP-ma			N-Eq.]	1.72		1.99E-1		'E+0	1.97E-1		9E-3	3.48E-2		29E-2	1.60E-	1 -3.67E-1
EP-terre			IN-Eq.]	1.90		2.20E+0		E+1	2.18E+0		3E-2	3.85E-1		72E-1	1.32E+	
POC ADP			NOC-Eq.]	8.18E		7.10E-1 6.53E-4		5E+1 DE-3	6.38E-1 2.03E-4		1E-2 3E-5	1.29E-1 7.60E-5		28E-1 04E-7	3.57E- 4.19E-	
ADP ADP			Sb-Eq.] MJ]	1.90		0.55⊑-4 3.01E+3		2E+4	2.03E-4 1.51E+3		3⊑-3 5E+1	7.00E-5 5.06E+2		04E-7 )2E+2	4.19E- 2.10E+	
			vorld-Eq													
WDI		de	orived]	5.71		8.65E+0		6E+1	4.41E+0		9E+0	1.67E+0		24E-1	-1.62E+	+1 4.88E+0
	ed ui		IE LCA d prod A1		A2								C3		150041 C4	D
															64	
PERE	1 10	NJ] NJ]	1.10E+3 0.00E+0		.91E+1 .00E+0	3.91		1.66E+			61	7E+0			0.005.0	
		VIJ] VIJ]		I U.	00270					3.28E+0			1.16E		3.80E+0	-5.29E+1
PERM	1		0 00E+0				E+0	0.00E+	+0 (	).00E+0	0.0	0E+0	0.00E	+0	0.00E+0	0.00E+0
PERM PERT	1] 1]		0.00E+0	0.	.00E+0	3.90	E+4	0.00E+ 0.00E+	+0 ( +0 (	).00E+0 ).00E+0	0.0	0E+0 0E+0	0.00E	+0 +0	0.00E+0 0.00E+0	0.00E+0 0.00E+0
PERM	1] 1] 1] ]	VU] VJ]	0.00E+0 0.00E+0 1.10E+3	0.			E+4 E+0	0.00E+	+0 ( +0 ( +0 (	).00E+0	0.0 0.0 0.0	0E+0	0.00E	+0 +0 +0	0.00E+0	0.00E+0
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PERM PERT PENRE PENRM PENRT SM	7] 7] [] 7] [] [] 7] [] []	NJ] NJ] NJ] kg]	0.00E+0 1.10E+3 0.00E+0 1.90E+4	0. 0. 3. 0. 2.	00E+0 00E+0 91E+1 00E+0 94E+3	3.90 0.00 7.81 0.00 2.19	E+4 E+0 E+4 E+0 E+4 E+4	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 1.51E+	HO C	0.00E+0 0.00E+0 0.00E+0 0.28E+0 0.00E+0 0.00E+1	0.0 0.0 0.0 6.1 0.0 5.0	0E+0 0E+0 0E+0 7E+0 0E+0 6E+2	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E	+0 +0 +0 +1 +1 +0 +2	0.00E+0 0.00E+0 3.80E+0 0.00E+0 2.10E+2	0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3
PERM PERT PENRE PENRM PENRT SM RSF	7] 7] <u>-</u> 7] <u>-</u> 7] <u>-</u> 7] <u>-</u> 7] <u>-</u>	NJ] NJ] NJ] kg] NJ]	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0	0. 0. 3. 0. 2. 0.	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0	3.90 0.00 7.81 0.00 2.19 0.00	E+4 E+0 E+4 E+0 E+4 E+4 E+0	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 1.51E+ 0.00E+	HO C	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+1 0.00E+0	0.0 0.0 0.0 6.1 0.0 5.0 0.0	0E+0 0E+0 0E+0 7E+0 0E+0 6E+2 0E+0	0.00E 0.00E 1.16E 0.00E 2.02E 0.00E	+0 +0 +1 +1 +0 +2 +0 +0	0.00E+0 0.00E+0 0.00E+0 3.80E+0 0.00E+0 2.10E+2 0.00E+0	0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0
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PERM PENT PENRE PENRM PENRT SM RSF NRSF FW Caption	I I I I I I I I I I I I I I I I I I I	MJ]       MJ]       MJ]       MJ]       MJ]       MJ]       m³       ERE = I       vable pr       pn-rene       vable p       condary	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 7.53E+0 Jse of rei imary en wable pri rimary en	0. 0. 3. 0. 2. 0. 6. 2. 0. 6. 2. 0. 0. 6. 2. 2. 0. 9. 2. 9. 9. 2. 9. 9. 2. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 e primary sources use of i	3.90 0.00 7.81 0.00 2.19 0.00 1.35 1.28 v energy used as cluding r used as renewab	E+4 E+0 E+4 E+0 E+4 E+0 E+3 E+1 excludin raw mat non-rene raw ma le secor	0.00E- 0.00E- 1.66E- 0.00E- 1.51E- 0.00E- 0.00E- 9.37E- 0.00E- 9.37E- 9.	HO     ((       HO     (       HO     (  HO </td <td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.02E-2 mary en otal use nergy re Total use</td> <td>0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td> <td>0E+0 0E+0 0E+0 7E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 00E+0</td> <td>0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E sed as ramary en raw mat ble primes</td> <td>+0 +0 +0 +1 +0 +2 +0 +2 +0 +0 +0 -2 aw mate ergy res terials; F early ene dary fue</td> <td>0.00E+0 0.00E+0 0.00E+0 3.80E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 ources; F EvnRM = gy resou Is; FW =</td> <td>0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of DENRE = Use of DENRE = Use of DENRE = Use of Use of non- irrces; SM = Use</td>	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.02E-2 mary en otal use nergy re Total use	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0 0E+0 7E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 00E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E sed as ramary en raw mat ble primes	+0 +0 +0 +1 +0 +2 +0 +2 +0 +0 +0 -2 aw mate ergy res terials; F early ene dary fue	0.00E+0 0.00E+0 0.00E+0 3.80E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 ources; F EvnRM = gy resou Is; FW =	0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of DENRE = Use of DENRE = Use of DENRE = Use of Use of non- irrces; SM = Use
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PERM PERT PENRE PENRM PENRT SM RSF NRSF FW Caption RESUL declare Indicato	I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	MJ	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.53E+0 Jse of reimary environment material IE LCA d prod A1	0. 0. 33 0. 2 0. 6 6 2 2 mewable ergy res ergy res ; RSF =	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E+0 99E+1 00E-1 e primary sources to ergy ext sources to ergy ext ergy ext e	3.90 0.00 7.81 0.00 2.19 0.00 1.35 1.28 / energy used as cluding r used as cluding r sed as cluding r as cluding	E+4     E+0       E+4     E+0       E+4     E+1       excluding and mathematical second	0.00E- 0.00E- 1.66E- 0.00E- 1.51E- 0.00E- 0.00E- 9.37E- 0.00E- 0.	HO     C       HO     C  HO <td>0.00E+0 0.0</td> <td>0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td> <td>0E+0     0E+0       0E+0     0E+0       0De+0     0E+0  &lt;</td> <td>0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 0.00E 2.33E sed as raman mary en raw mat ble prim e second ding t</td> <td>+0 +0 +0 +1 +1 +0 +2 +0 +0 +2 +0 +0 +0 +2 aw mate ergy res terials; F aary ene dary fue</td> <td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 0.0</td> <td>0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of PENRE = Use of -A2: D</td>	0.00E+0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0     0E+0       0De+0     0E+0  <	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 0.00E 2.33E sed as raman mary en raw mat ble prim e second ding t	+0 +0 +0 +1 +1 +0 +2 +0 +0 +2 +0 +0 +0 +2 aw mate ergy res terials; F aary ene dary fue	0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 0.0	0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of PENRE = Use of -A2: D
PERM PENRE PENRE PENRM PENRT SM RSF NRSF FW Caption RESUL declare Indicator	I I I I I I I I I I I I I I I I I I I	MJ MJ MJ MJ MJ MJ ERE = 1 vable pr pn-rene vable pr condary DF TH nit an Mit kg]	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.53E+0 Jse of rei imary en v material IE LCA d prod A1 1.46E+0	0. 0. 3. 0. 2. 0. 6. 2. 0. 6. 2. 0. 2. 0. 0. 2. 0. 0. 2. 0. 0. 2. 0. 0. 2. 0. 0. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 0. 0. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E+1 00E-1 e primary sources to ergy exists Use of to STE C A2 16E-3	3.90 0.00 2.19 0.00 1.35 1.28 v energy used as cluding r used as cluding r sed	E+4     E+0       E+4     E+0       E+4     E+1       E+3     E+1       excluding raw mather in the second raw mather is second raw mather in the second seco	0.00E+ 0.00E+ 1.66E+ 0.00E+ 1.51E+ 0.00E+ 0.00E+ 9.37E- 9 renev erials; P badary fue S ANE S ANE A4	+0     (       +0     (       +0     (       +1     8       +0     (       +3     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +0     (       +1     +1       +1     +1       +1     +1       +1     +1       +1     +1       +1     +1       +1     +1       +1     +1       +1     +1       +2     +1        +2     +1	0.00E+0 0.0	0.0 0.0 0.0 0.0 5.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E sed as ramary en raw mat ble prime second ding t C3 7.06E	+0 +0 +0 +1 +1 +0 +2 +0 +2 +0 +0 +0 -2 aw mate ergy res terials; F ary ener dary fue	0.00E+0 0.00E+0 0.00E+0 3.80E+0 0.00E+0 2.10E+2 0.00E+0 0.00E+0 2.72E-1 rials; PE ources; F PENRM = rgy resou ls; FW = 158041 5.17E-2	0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.
PERM PERT PENRE PENRM PENRT SM RSF NRSF FW Caption Caption	I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	MJ MJ MJ MJ MJ MJ ERE = 1 vable pr pon-rene vable p condary DF TH nit an Mit kg]	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 7.53E+0 Jse of reimary environment may environment material IE LCA d prod A1 1.46E+0 3.12E+3	0 0 3 0 0 6 2 0 0 6 6 2 0 0 6 6 2 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 7 8 9 8 9	00E+0 00E+0 91E+1 00E+0 99E+1 00E+0 99E+1 00E-1 a primary sources to a primary s	3.90 0.00 7.81 0.00 2.19 0.000 1.35 1.28 v energy used as cluding r used as cluding r scenewab CATEC	E+4     E+0       E+4     E+0       E+4     E+1       E+3     E+1       excludir     raw mat       raw mat     le secor       GORIE     3       E+1     E+1	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 9.37E- 0.00E+ 9.37E- 9.	+0     (       +0     (       +0     (       +1     8       +0     (       +3     (       +0     (       +3     (       +0     (       +0     (       +0     (       +3     (       +0     (       +2     :       vable print     =       PERT = T     =       PERT = Sis; NRS     water       Vable     Vable	0.00E+0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as ramany en raw mat ble prime second ding t C3 7.06E 1.73E	+0 +0 +0 +1 +1 +0 +2 +0 +2 +0 +0 -2 aw mate ergy res leary ene dary fue o EN -2 -2 -2 +1	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 rials; PE ources; F ENRM = rgy resou ls; FW = 158044 5.17E-2 4.18E+3	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 -8.73E+2
PERM PERT PENRE PENRM PENRT SM RSF FW Caption Caption RESUL Caption HWD NHWD RWD	Image Control Con	MJ MJ MJ MJ MJ MJ MJ MJ MJ ERE = U vable pr on-rene wable pr condary DF TH nit an Init kg	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.53E+0 Jse of regimers and the privilence of t	0 0 3 0 2 0 6 2 0 6 6 2 0 0 6 6 2 0 0 8 6 9 2 0 0 8 6 9 2 0 0 8 6 9 2 0 0 8 6 9 2 0 0 8 6 8 9 9 9 8 9 8 9 9 9 9 9 9 9 9 9 9 9	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 9 primary 00UE-0 99E+1 00E-1 9 primary 00UE-0 99E+1 00E+0 99E+1 00E+0 99E+1 00E+0 94E+3 03E-1 02E-6	3.90 0.00 7.81 0.00 1.35 1.28 / energy used as renewab CATEC A 6.57 2.11 1.60	E+4 E+0 E+4 E+0 E+4 E+0 E+3 E+1 excludii raw mat ic secor CORIE 3 E+1 E+1 E+3 E+1 E+3 E-5	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 9.37E- mg renev erials; P wable p terials; P swable p terials; P swable p terials; P swable p terials; P swable p terials; P swable p terials; P	+0     ()       +0     ()       +0     ()       +1     8       +0     ()       +3     ()       +0     ()       +3     ()       +0     ()       +3     ()       +0     ()       +3     ()       +0     ()       +3     ()       +4     ()       +3     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4     ()       +4 <t< td=""><td>0.00E+0 0.0</td><td>0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td><td>0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0</td><td>0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as ramary en raw mat ble prim e second ding t C3 7.06E 1.73E 2.63E</td><td>+0 +0 +0 +1 +1 +0 +2 +0 +2 +0 +0 +2 aw mate ergy res hary ene dary fue c EN</td><td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 rials; PE ources; F PENRM = 158044 5.17E-2 4.18E+3 1.34E-6</td><td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.</td></t<>	0.00E+0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as ramary en raw mat ble prim e second ding t C3 7.06E 1.73E 2.63E	+0 +0 +0 +1 +1 +0 +2 +0 +2 +0 +0 +2 aw mate ergy res hary ene dary fue c EN	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 rials; PE ources; F PENRM = 158044 5.17E-2 4.18E+3 1.34E-6	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.
PERM PERT PENRE PENRM PENRT SM RSF FW Caption Caption RESUL Caption HWD NHWD RWD CRU	P P P P P P P P P P P P P P	MJ   Prove   Condense   MJ   MJ   Prove   MJ	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 7.53E+0 Jse of relimary environment mary environment mary environment rimary environment	0 0 0 2 0 6 6 2 0 6 6 2 0 0 6 6 2 0 0 8 8 8 7 8 8 7 8 8 7 8 9 8 9 8 9 9 9 9 9	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 9 primary sources 0 sources 0	3.90 0.00 7.81 0.00 1.35 1.28 / energy used as cluding r used as renewab CATEC 6.57 2.11 1.60 0.00	E+4 E+0 E+4 E+0 E+4 E+4 E+1 excludin raw mat bon-rene raw mat bon-rene raw mat bon-rene raw mat bon-rene raw mat bon-rene Fab E+1 E+1 E+2 E+2 E+2 E+2 E+2 E+2 E+2 E+1 E+1 E+1 E+1 E+1 E+1 E+1 E+1 E+1 E+1	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 0.00E+ 0.00E+ 9.37E- 0.00E+ 9.37E- mg renew erials; P wable p terials; P swable p terials; P swable p terials; P swable p terials; P adary fue <b>S ANI</b> <b>S ANI</b> <b>2.84E</b> 2.29E 0.00E+	+0     ()       +0     ()       +0     ()       +1     &       +0     ()       +3     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.255E-3 0.69E+0 0.25E-7 0.00E+0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as r. mary en raw mat ble prim e second ding t 7.06E 1.73E 2.63E 0.00E	+0 +0 +0 +1 +1 +0 +2 +0 +0 +2 +0 +0 +2 +0 +0 dary res terials; F aav mate ergy res terials; F aary ene dary fue -2 +1 +1 -2 -2 +1 +1 -2 -2 -2 +1 +1 -2 -2 -2 +1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.12E-1 158041 C4 5.17E-2 4.18E+3 1.34E-6 0.00E+0	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 -8.89E-1 RM = Use of PENRE = Use o Use of non- ircces; SM = Use Use of net fresh -A.2: D -4.82E-1 -8.73E+2 -1.03E-5 0.00E+0
PERM PERT PENRE PENRM PENRT SM RSF FW Caption Caption RESUL Caption HWD NHWD RWD RWD CRU MFR	Image: Constraint of the second	MJ MJ MJ MJ MJ MJ MJ MJ ERE = 1 vable pr condary DF TH nit and Mit Kg Kg Kg	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.53E+0 Jse of reimary en wable pririmary en material IE LCA d prod 1.46E+0 3.12E+3 4.97E+5 0.00E+0 0	0 0 0 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 8 5 7 8 5 7 8 5 7 8 5 7 8 5 7 8 5 7 8 5 7 8 5 7 8 5 7 8 9 7 8 9 7 8 9 7 8 9 8 9 8 9 8 9 9 9 9	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 e primary ources to a primary ources to sources to sources to a primary ources to a primar	3.90 0.00 7.81 0.00 1.35 1.28 / energy used as cluding r used as cluding r <b>CATEC</b> <b>A</b> 6.57 2.11 1.60 0.00 0.00 1.35 1.28 / energy 1.35 1.28 / energy 1.35 1.35 / energy 1.35 / energy 1.35 / energy 1.35 / energy 1.35 / energy 1.35 / energy 1.35 / energy 1.35 / energy 1.15 1.66 0.000 0.000 1.09	E+4     E+0       E+4     E+0       E+4     E+1       excluding an matrix mathematic second sec	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 1.51E+ 0.00E+ 0.00E+ 9.37E- ng renew erials; P wable p terials; P swable p terials; P S ANIE S ANIE 2.84E+ 2.29E+ 0.00E+ 0.00E+ 0.00E+	+0     (+0)       +0     (+0)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)       +0     (+1)	0.00E+0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E sed as ramary en raw mat ble prim e second ding t 7.06E 1.73E 2.63E 0.00E 8.50E	+0 +0 +0 +1 +0 +2 +0 +2 +0 +2 +0 +2 -2 aw mate ergy res terials; F aary ene dary fue co EN -2 +1 -6 +0 +2 +2 -2 +1 -2 +1 -2 -2 +1 -2 -2 -2 +1 -2 -2 -2 +1 -2 -2 -2 +1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.17E-2 4.18E+3 1.34E-6 0.00E+0 0.00E+0 0.00E+0	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 -8.89E-1 RM = Use of PENRE = Use of 0: Use of non- ircres; SM = Use Use of net fresh -A.2: D -4.82E-1 -8.73E+2 -1.03E-5 0.00E+0 0.00E+0 0.00E+0
PERM PERT PENRE PENRM PENRT SM RSF FW Caption Caption RESUL Caption HWD NHWD RWD CRU	Image: Constraint of the second	MJ   Prove   Condense   MJ   MJ   Prove   MJ	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 7.53E+0 Jse of relimary environment mary environment mary environment rimary environment	0 0 0 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 8 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 9 primary sources 0 sources 0	3.90 0.00 7.81 0.00 1.35 1.28 / energy used as cluding r used as renewab CATEC 6.57 2.11 1.60 0.00	E+4     E+0       E+4     E+0       E+4     E+1       excludin raw mathematic participation on renerative mathematematic partindeparticipation on renerative mathematematic partin	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 0.00E+ 0.00E+ 9.37E- 0.00E+ 9.37E- mg renew erials; P wable p terials; P swable p terials; P swable p terials; P swable p terials; P adary fue <b>S ANI</b> <b>S ANI</b> <b>2.84E</b> 2.29E 0.00E+	+0     ()       +0     ()       +0     ()       +1     8       +0     ()       +3     ()       +0     ()       +0     ()       +0     ()       +0     ()       +0     ()       +2     2       +2     2       +2     2       +1     8       -2     2       -1     8       -6     2       +0     ()       +0     ()	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.255E-3 0.69E+0 0.25E-7 0.00E+0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as r. mary en raw mat ble prim e second ding t 7.06E 1.73E 2.63E 0.00E	+0 +0 +0 +1 +1 +0 +2 +0 +2 aw mate ergy res terials; F ary ene dary fue co EN +1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.12E-1 158041 C4 5.17E-2 4.18E+3 1.34E-6 0.00E+0	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 -8.89E-1 RM = Use of PENRE = Use o Use of non- ircces; SM = Use Use of net fresh -A.2: D -4.82E-1 -8.73E+2 -1.03E-5 0.00E+0
PERM PENT PENRE PENRM SM RSF NRSF FW Caption RESUL Caption HWD RWD CRU MFR MER	I I I I I I I I I I I I I I I I I	MJ       Condary       DF       TH       Nit       MI       MI       MI       MI       MI       MI       MI       MI       MI       MI	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 <b>A1</b> 1.46E+0 3.12E+3 4.97E-5 0.00E+0 0.00E+	0 0 0 3 0 0 2 0 0 0 6 2 0 0 0 6 2 0 0 0 8 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E+0 99E+1 00E-1 e primary sources Use of 1 STE 0 A2 16E-3 .03E-1 .02E-6 00E+0 00E+0 00E+0 00E+0 00E+0	3.90 0.00 7.81 0.00 1.35 1.28 / energy used as cluding r used as cluding r senewab CATEC 6.57 2.11 1.60 0.00	E+4     E+0       E+4     E+0       E+4     E+0       E+3     E+1       excluding raw mathematic second seco	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 1.51E+ 0.00E+ 9.37E- 9 renev erials; F dary fue S ANE S ANE A4 4.10E+ 2.84E+ 2.29E+ 0.00E+ 0.00E+ 0.00E+	+0     ()       +0     ()       +0     ()       +1     8       +0     ()       +3     ()       +0     ()       +3     ()       +0     ()       +3     ()       +3     ()       +3     ()       +3     ()       +4     ()       +3     ()       +4 <t< td=""><td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0</td><td>0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td><td>0E+0 0E+0</td><td>0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E aed as r mary en raw mat ble prim a second ding t C3 7.06E 1.73E 2.63E 0.00E</td><td>+0 +0 +0 +1 +1 +2 +0 +2 +0 +2 aw mate ergy res terials; F ary ene dary fue o EN -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2</td><td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.17E-2 4.18E+3 1.34E-6 0.00E+0 0.00E+0 0.00E+0 0.00E+0</td><td>0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of PENRE = Use of 0: Use of net fresh -A2: D -4.82E-1 -8.73E+2 -1.03E-5 0.00E+0 0.00E+0 0.00E+0</td></t<>	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0 0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E aed as r mary en raw mat ble prim a second ding t C3 7.06E 1.73E 2.63E 0.00E	+0 +0 +0 +1 +1 +2 +0 +2 +0 +2 aw mate ergy res terials; F ary ene dary fue o EN -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.17E-2 4.18E+3 1.34E-6 0.00E+0 0.00E+0 0.00E+0 0.00E+0	0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 -4.69E+3 0.00E+0 0.00E+0 0.00E+0 -8.89E-1 RM = Use of PENRE = Use of 0: Use of net fresh -A2: D -4.82E-1 -8.73E+2 -1.03E-5 0.00E+0 0.00E+0 0.00E+0
PERM PERT PENRE PENRM PENRT SM RSF FW Caption RESUL Caption RUD CRU MFR MER EEE EET Caption	P P	MJ       DF       TH       nit       MJ       Kg       Kg       Kg       MJ       MJ       =       Haza       re-use	0.00E+0 1.10E+3 0.00E+0 1.90E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.90E+0 1.90E+0 1.90E+0 1.46E+0 3.12E+3 4.97E-5 0.00E+0 0.0	0 0 0 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 6 6 2 2 0 0 8 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	00E+0 00E+0 91E+1 00E+0 94E+3 00E+0 99E+1 00E-1 primary ources Use of f STE C A2 16E-3 .03E-1 .02E-6 00E+0 .00E+0 .00E+0 .00E+0 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .03E-1 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .00E+0 .00E+0 .03E-1 .02E-6 .00E+0 .0	3.90 0.00 7.81 0.00 1.35 1.28 7 energy used as cluding r used as cluding r serenewab CATEC 6.57 2.11 1.60 0.00	E+4       E+0       E+4       E+0       E+4       E+0       E+1       excludin raw mat hon-reneration-reneration       raw mat hon-reneration       raw mat hon-reneration       GORIE       3       E+1       E+2       E+0       E+2       E+0       E+2       E+0	0.00E+ 0.00E+ 0.00E+ 1.66E+ 0.00E+ 0.00E+ 0.00E+ 9.37E- 0.00E+ 9.37E 9.3	HO     C       HO     C  HO <td>0.00E+0 0.0</td> <td>0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td> <td>0E+0     0E+0       0E+0     0E+0</td> <td>0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as ranary en raw mat ble prim e second ding t C3 7.06E 1.73E 2.63E 0.00E 8.50E 0.00E</td> <td>+0     +0       +0     +0       +1     +0       +2     +0       +0     +2       +0     +2       +0     +2       +0     +2       ergy resterials; Fe       eargy fue       •0     EN       •2     +1       -6     +1       +6     +0       +2     +0       +0     +0       +10     +0       +10     +10       +10     +10       +10     +10       +10     +10       +10     +10       +10     +10</td> <td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 rials; PE ources; F PENRM = 72FNR = 72</td> <td>0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -4.82E-1 -4.82E-1 -8.73E+2 -1.03E+5 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0</td>	0.00E+0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0E+0     0E+0	0.00E 0.00E 0.00E 1.16E 0.00E 2.02E 0.00E 2.33E ed as ranary en raw mat ble prim e second ding t C3 7.06E 1.73E 2.63E 0.00E 8.50E 0.00E	+0     +0       +0     +0       +1     +0       +2     +0       +0     +2       +0     +2       +0     +2       +0     +2       ergy resterials; Fe       eargy fue       •0     EN       •2     +1       -6     +1       +6     +0       +2     +0       +0     +0       +10     +0       +10     +10       +10     +10       +10     +10       +10     +10       +10     +10       +10     +10	0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.10E+2 0.00E+0 2.72E-1 rials; PE ources; F PENRM = 72FNR = 72	0.00E+0 0.00E+0 0.00E+0 0.00E+0 -5.29E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -4.82E-1 -4.82E-1 -8.73E+2 -1.03E+5 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0



Indicator	Unit	A1	A2	A3	A4	C1	C2	C3	C4	D
PM	[Disease Incidence]	1.06E-4	1.37E-5	1.32E-4	7.88E-6	6.41E-7	2.84E-6	2.36E-6	3.48E-6	-2.82E-5
IRP	[kBq U235- Eq.]	5.21E+1	1.32E+1	3.70E+1	6.60E+0	3.34E-1	2.22E+0	1.20E+0	4.98E-1	-4.49E+0
ETP-fw	[CTUe]	8.25E+4	2.27E+3	4.57E+4	1.08E+3	9.06E+1	3.88E+2	7.31E+1	3.22E+2	-9.35E+3
HTP-c	[CTUh]	1.25E-5	7.85E-8	7.61E-6	3.38E-8	4.79E-8	1.19E-8	1.38E-9	3.60E-8	-2.41E-6
HTP-nc	[CTUh]	6.04E-5	2.29E-6	2.65E-5	1.14E-6	6.99E-8	4.10E-7	8.44E-8	2.84E-6	-9.28E-6
SQP	[-]	5.48E+3	2.30E+3	4.25E+5	1.55E+3	1.03E+1	5.80E+2	8.30E+0	2.45E+2	-1.25E+3
P	PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential									
Caption										

Disclaimer 1 – for the indicator "Potential Human exposure efficiency relative to U235". This impact category deals mainly with the eventual impact of low dose ionizingradiation on human health of the nuclear fuel cycle. It does not consider effects due to possiblenuclear accidents, occupational exposure or radioactive waste disposal in undergroundfacilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators "abiotic depletion potential for non-fossil resources", "abiotic depletion potential for fossil resources", "water (user) deprivation potential, deprivation-weighted water consumption", "potential comparative toxic unit for ecosystems", "potential comparative toxic unit for humans – cancerogenic", "Potential comparative toxic unit for humans – not cancerogenic", "potential soil quality index". The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

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