EPD Environmental product declaration

in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019+AC:2021

FIRE DAMPERS

FDMB
FDMS
CFDM/CFDM-V
FDMR
FDMQ 120
FDMQ
FDML
FDMA
FDMR 60

Approval number: 3013EPD-25-0303
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Revision: 1

MANDÍK®

GENERAL INFORMATION

Programme	National Environmental Labelling Program (NPEZ)
Programme operator	MŽP, Ministry of the Environment of the Czech Republic
Contact	Vršovická 1442/65, Prague 10, 100 10 Czech Republic ekoznacka@mzp.cz www.ekoznacka.cz
LCA accountability	Lubos Nobilis, Nesuchyně 12, 270 07 Czech Republic nobilis.lubos@gmail.com
EPD owner	MANDÍK. a.s.

Product Category Rules (PCR)
CEN standard EN 15804 serve as the core Product Category Rules (PCR)
Third-party verification
Independent verification of the declaration and data, according to EN ISO 14025:2010: ☐ internal ☒ external
Third-party verifier: Building Research Institute – Certification company, Ltd. (Výzkumný ústav pozemních staveb – Certifikační společnost, s.r.o.) Pražská 810/16, 102 00 Praha 10, Czech Republic Jan Weinzettel, weinzettel@seznam.cz

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

COMPANY INFORMATION

Manufacturing company (the headquarters and the production site)	MANDÍK. a.s. Dobříšská 550, Hostomice 267 24 Czech Republic Registration Nº: 26718405 VAT Nº: CZ26718405
Contacts	Phone: +420 311 706 706 E-mail: mandik@mandik.cz Web: https://mandik.cz/

Company information

MANDÍK, a.s. is a Czech family-owned company founded in 1990. Currently, it is one of the major European manufacturers of fire protection and air handling components, central air-handling units and industrial heating systems.

The company has established itself on the European market through its emphasis on quality, affordability, a wide product portfolio and flexibility in processing customer requests for changes to existing products or the development of new products.

Emphasis is also placed on supporting customers and our deliveries with service and technical support. Customers can thus rely on the successful completion of any business case. The current technical and commercial maturity of the company is documented by deliveries for buildings of the world's largest technology companies, banks, office complexes, high-rise buildings and deliveries of technically demanding custom products for nuclear power plants, etc. across the entire European continent, including deliveries outside Europe.

Up-to-date information on certifications and declarations are on the company's website.

The headquarters and production plant of the company is located in Hostomice, in the district of Beroun, in Czech Republic.

PRODUCT INFORMATION

Fire dampers are shutters in ducts of air-conditioning devices that prevent the spread of fire and combustion products from one fire segment to the other one by means of closing the duct in the points of fire separating constructions.

The fire dampers blade closes automatically air duct using a shutting spring or a return spring of its actuating mechanism in case of fire. The return spring of the actuator is started when the thermal fuse is activated (after the nominal activation temperature 72°C has been reached) or the actuator is without power supply. In the case of thermal electrical fuse the activation (closing) procedure starts, when a reset button on fuse is pushed or when a power supply of the actuating mechanism is stopped. In case of mechanical control with thermal fuse, the return spring is activated after the moment, when thermal fuse is melted. The damper´s blade is sealed with a silicon gasket/packing preventing smoke penetration after closing the blade. At the same time, the damper´s blade will be tighten by intumescent tape, which will be expanding in the case of fire.

FDMB

TPM 075/09

- Dimensions from 100 × 100 to 1 000 × 500 mm
- Fire resistance up to EI 120 S
- Leakage acc. to EN 1751: casing A<160 or B<160 class B – A≥160 and B≥160 class C / blade class 2
- Damper actuating: mechanical or electrical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 1 200 Pa
- Corrosion resistance acc. to EN 15650
- Cycling test C_{10000} / C_{mod} (depending on the type of actuator) acc. to EN 15650
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1
- Offered also in design for potentially explosive atmospheres

FDMS

TPM 125/17

- Dimensions from DN 100 to DN 630 mm
- Fire resistance up to EI 90 S
- Leakage acc. to EN 1751: casing class C / blade class 2
- Damper actuating: FDMS - mechanical or electrical
- Damper actuating: FDMS-VAV - only electrical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 2 500 Pa
- Corrosion resistance acc. to EN 15650
- Cycling test in case of FDMS: C_{10000} acc. to EN 15650
- Cycling test in case of FDMS-VAV: C_{20000} acc. to EN 15650
- Certification mark from RISE Institute in Sweden no. SC1433-17
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1

CFDM; CFDM-V

CE 1391
TPM 118/16

- Dimensions: DN 100, DN 125, DN 160 and DN 200 mm
- Fire resistance: EI 60 S, EI 90 S, EI 120 S
- Leakage acc. to EN 1751: through blade class 2
- Damper actuating: mechanical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 1 200 Pa
- CFDM-V – includes inlet / outlet dish valve
- Corrosion resistance acc. to EN 15650
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1

FDMR

Ex CE 1391
TPM 140/19

- Dimensions from DN 100 to DN 800 mm
- Fire resistance up to EI 120 S - 500 Pa
- Leakage acc. to EN 1751: casing class C / blade class 3
- Damper actuating: mechanical or electrical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 1 200 Pa
- Corrosion resistance acc. to EN 15650
- Cycling test C_{10000} acc. to EN 15650
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1
- Offered also in design for potentially explosive atmospheres

FDMQ 120

CE 1391
TPM 162/22

- Dimensions from 150 × 150 to 1 500 × 800 mm
- Fire resistance EI 120 S
- Leakage acc. to EN 1751: casing class C / blade class 2
- Damper actuating: mechanical or electrical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 1 200 Pa
- Corrosion resistance acc. to EN 15650
- Cycling test C_{10000} acc. to EN 15650
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1

FDMQ

Ex CE 1391
TPM 103/14

- Dimensions from 150 × 150 to 1 500 × 800 mm
- Fire resistance up to EI 90 S
- Leakage acc. to EN 1751: casing class C / blade class 2
- Damper actuating: mechanical or electrical
- For a maximum speed of 12 m/s and a pressure difference on the damper of 1 200 Pa
- Corrosion resistance acc. to EN 15650
- Cycling test C_{10000} / C_{mod} (depending on the type of drive) acc. to EN 15650
- CE certification acc. to EN 15650
- Tested acc. to EN 1366-2
- Classified acc. to EN 13501-3+A1
- Offered also in design for potentially explosive atmospheres

FDML

CE 1391
TPM 130/17

› Dimensions - from 200 x 300 to 1000 x 1000 mm
› Damper actuating: electrical
› CE certification according to EN 15650
› Tested according to EN 1366-2
› Classified according to EN 13501-3 + A1
› Fire resistance: EI 90 S, E 120 S
› Air tightness according to EN 1751, casing/body class ATC 4 and blades class 3
› Corrosion resistance according to EN 15650
› Cycling test C10 000 according to EN 15650
› For maximum speed of 12 m/s and pressure difference on the damper's blades 1 500 Pa

FDMA

Ex CE 1391
TPM 018/01

› Dampers from 180 × 180 mm to 1 600 × 1 000 mm
› CE certified acc. to EN 15650
› Tested in accordance with EN 1366-2
› Classified acc. to EN 13501-3+A1
› Fire resistance up to EI 120 S
› External Casing leakage class ATC 3, Internal leakage class 2 acc. to EN 1751
› Corrosion resistant acc. to EN 15650
› Cycling test in class C10 000 acc. to EN 15650
› Damper actuating mechanical, or electrical
› Maximum air speed through opened damper of 12 m/s and pressure difference 1200 Pa
› Can be used in explosion-hazard environments

FDMR 60

CE 1391
TPM 142/19

› Dampers from ø 100 to ø 400 mm
› Damper actuating mechanical or electrical
› CE certified acc. to EN 15650
› Tested in accordance with EN 1366-2
› Classified acc. to EN 13501-3+A1
› Fire resistance up to EI 60 S
› External Casing leakage class ATC 3, Internal leakage class 3 acc. to EN 1751
› Corrosion resistant acc. to EN 15650
› Cycling test in class C10 000 acc. to EN 15650
› Maximum air speed through opened damper of 12 m/s and pressure difference 1200 Pa

Possible designs and further detailed information is given in the technical specifications of the products available on the company's website.

LCA INFORMATION

Declared unit:	1 pc of fire dampers of a specific type. The weight of 1 pc is listed in the material content.
Reference service life:	20 years (used for calculation of energy consumption in the use phase)
Geografilcal scope:	Stage A1-A3 Europe, A4-C4 Global
Time representativeness:	2022
Database(s) and LCA software used:	Ecoinvent 3.9 (using the Cut-off processes/allocation model), Simapro v. 9.5 EN 15804 reference package based on EF 3.1 For the FDML, FDMA, FDMR 60, FDMQ and FDMQ 120 products, which were added to the EPD by revision no. 1, the Ecoinvent 3.10 database was used (using EN 15804/ process cut off/allocation model).
Cut-off rules:	Neglected flow in all modules is less than 1% of the energy use and total mass.
Allocation method:	Weight allocations: A3 energy/fuels consumption, waste and air emissions outputs are allocated by total products (fire dampers) manufactured over 1 year.
Description of system boundaries:	The type of EPD is Cradle to Grave and module D (EPD Type c - Modules A1-A3, A4-A5, B1-B7, C1-C4, and D).
Infrastructure/capital goods:	Infrastructure is part of the generic processes used for upstream and downstream. For the Core phase, infrastructure was not considered.
Determination of representatives:	The EPD is related to the representatives of the size range of individual product types – the smallest, medium and largest size and to the design – manual (with a thermal fuse with possible terminal switches) and with the actuator (if this option is possible).
Revision 1:	In revision 1, the material composition of FDMQ and FDMQ 120 products was updated - results were not changed by more than 10 %. In addition, FDML, FDMA and FDMR 60 products were newly added.

Production stage (A1-A3)

The A1 module contains primarily the production of components for the assembly of complete fire dampers. These are profiles and components made of steel and fire protection board (based on calcium silicate), then plastics and electronics. Furthermore, it concerns the production of electricity, the extraction and distribution of natural gas, and the production of fuels and operational inputs for production.
Phase A2 includes the transportation of the above-mentioned materials and components to production in phase A3.
In production (A3), the processing of purchased materials takes place, especially formatting, punching, plasma cutting, welding, etc. of galvanized sheets, other metals and formatting of calcium silicate boards. This is related to the consumption of electricity, natural gas and fuels for internal and commercial transport and emissions from their use.
PE foil, PVC, PP, cardboard, wood (disposable pallets) and steel are used for product packaging.
Production generates waste from production (CDW - scraps and dust of calcium silicate boards, iron and steel, plastics) and waste packaging (plastics, paper and cardboard, mixed).

Transport to construction stage (A4)

The A4 module represents transport to customers around the world in the reference year. The truck, 16-32 t, diesel, consupmption 38 l per 100 km, EURO 6, are considered. The distance is given by a summary of specific transports for the product line.

Construction-Installation (A5)

In phase A5, the generation of waste from product packaging is considered. The installation of fire dampers to building is considered as manual, with the consumption of walling material (mortar) and water. For some products, manual installation with the consumption of mineral wool was also considered. There are output materials as result of waste processing at the building site - packaging waste (cardboard, PE, PP, PVC, steel), their quantity is determined by the type of product.

Use stage (B1-B7)

In the use phase, the operating energy consumption of the motor variants of the dampers in module B6 is considered. On the basis of expert estimation, a service life of 20 years with continuous operation is considered for the calculation. The technical specifications of the product state that serviceability checks are carried out twice a year, but for the calculation of the LCA, an interval of once a week was used (more realistic estimation). Depending on the type of actuator, active operation for 30/60/120 s 1x/week (testing) and the remaining time in stand-by mode was considered. The power output of the actuator depends on the parameters of the specific type.

The usage module (B1) is without inputs and outputs, as is the operational water consumption (B7). The repair (B3) and replacement (B4) modules are modeled without inputs and outputs, as these situations may occur, but do not result directly from the requirements for using the product. Cleaning may occur in the maintenance module (B2), but it is not specified in technical specifications.

End-of-Life stage (C1-C4)

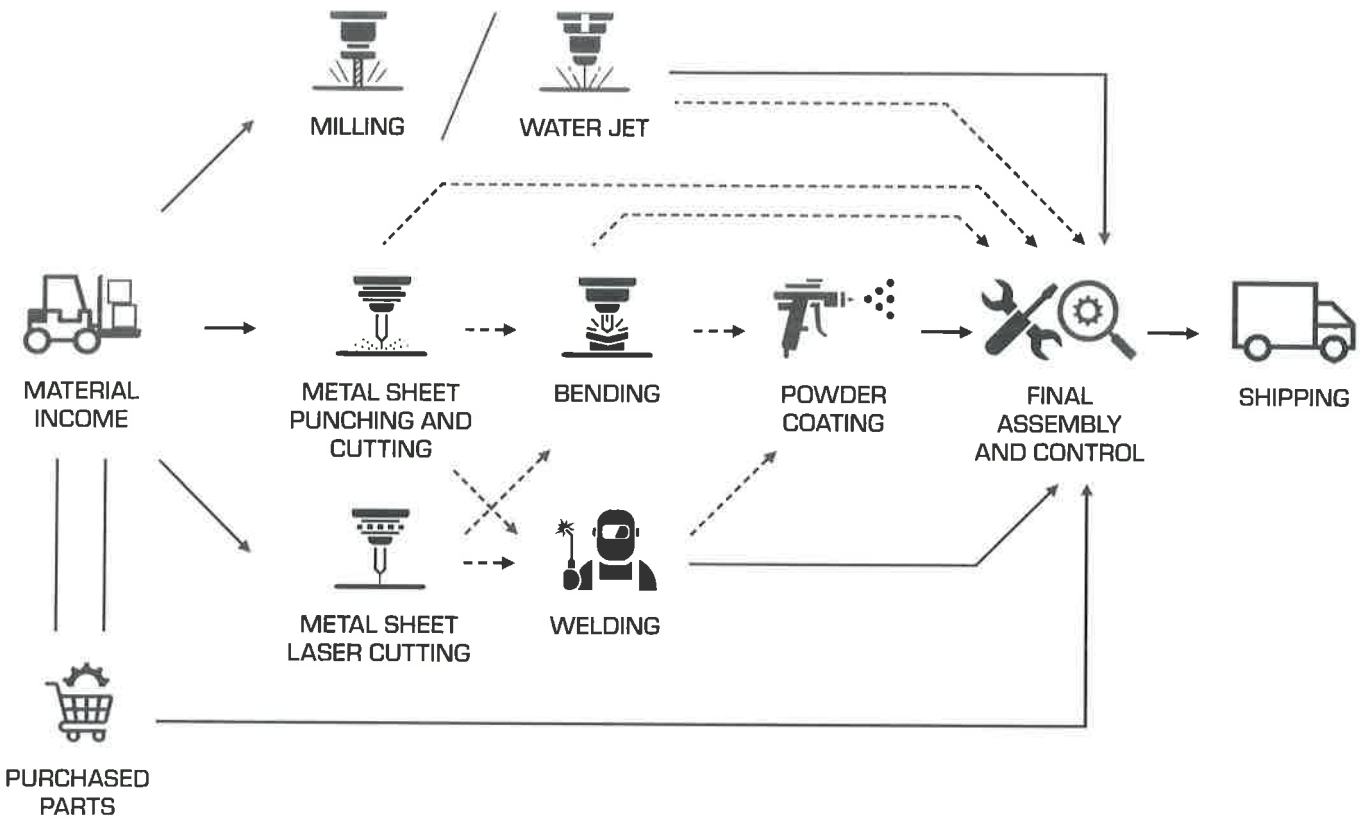
In the C1 and C2 modules, manual deconstruction and transport for processing at a distance of 50 km is considered. All electronic equipment is collected separately and handed over for take-back.
In the C3 module, the recycling of metal and electronic components (70 %), the energy use of plastics (1 %) and the landfilling of the remaining materials (29 %) are calculated.

Benefits and loads beyond the system boundary (D) - Reuse, Recovery, Recycling potentials

Benefits and costs beyond the boundary of the product system correspond to the replacement of primary materials and energy due to the generation of metal recycle and electricity and heat from energy use in phase C3.

Specific technical information for scenarios of a specific product type will be provided by the company upon request.

SYSTEM DIAGRAM



SYSTEM BOUNDARIES

	Product stage			Construction stage		Use stage	End of life stage				Benefits and loads beyond the system boundary
	Raw material supply	Transport	Manufacturing	Transport	Construction-Installation process	Use Maintenance Repair Replacement Refurbishment Operational energy use Operational water use	De-construction / demolition	Transport	Waste processing	Disposal	Reuse-recovery
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

X – module declared
ND – module not declared

MATERIAL CONTENT

Table 1 Material content of the product – FDMB manual

FDMB manual								
Dimension (mm)	100x100		500x400		1000x500		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	4.87		15.56		27.04			
	kg	%	kg	%	kg	%		
Steel	4.5124	92.63%	11.2660	73.44%	16.7380	62.47%	0	0
Calcium silicate board	0.1098	2.25%	3.7878	24.69%	9.6253	35.93%	0	0
Brass	0.0240	0.49%	0.0493	0.32%	0.0493	0.18%	0	0
Plastics and rubber	0.1828	3.75%	0.0875	0.57%	0.1410	0.53%	0	0
Electronics	0.0152	0.31%	0.0152	0.10%	0.0152	0.06%	0	0
Others (graphite, etc.)	0.0271	0.56%	0.1343	0.88%	0.2237	0.83%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 2 Material content of packaging – FDMB manual

FDMB manual									
Dimension (mm)	100x100			500x400			1000x500		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	7.97E-02	1.64%	3.56E-02	2.55E-01	1.64%	1.14E-01	4.43E-01	1.64%	1.98E-01
PE	2.61E-02	0.54%	0	8.34E-02	0.54%	0	1.45E-01	0.54%	0
PVC	1.48E-02	0.30%	0	4.74E-02	0.30%	0	8.23E-02	0.30%	0
PP	3.58E-04	0.01%	0	1.14E-03	0.01%	0	1.99E-03	0.01%	0
steel	2.81E-04	0.01%	0	8.97E-04	0.01%	0	1.56E-03	0.01%	0
wood	6.61E-01	13.56%	2.95E-01	2.11E+00	13.56%	9.42E-01	3.67E+00	13.56%	1.64E+00
total	7.82E-01	16.05%	16.05%	2.50E+00	16.05%	1.06E+00	4.34E+00	16.05%	1.84E+00

Table 3: Material content of the product – FDMB with the actuator

FMDB with the actuator								
Dimension (mm)	100x100		500x400		1000x500		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	5.07		15.75		29.29			
	kg	%	kg	%	kg	%		
Steel	3.5084	70.13%	10.3448	66.58%	16.0197	55.16%	0	0
Calcium silicate board	0.1098	2.19%	3.7878	24.38%	9.6253	33.14%	0	0
Plastics and rubber	0.1576	3.15%	0.0698	0.45%	0.1157	0.40%	0	0
Electronics	1.2000	23.99%	1.2000	7.72%	3.0600	10.54%	0	0
Others (graphite, etc.)	0.0271	0.54%	0.1343	0.86%	0.2237	0.77%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 4: Material content of packaging – FDMB with the actuator

FMDB with the actuator									
FMDB with the actuator	100x100			500x400			1000x500		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	8.30E-02	1.64%	3.71E-02	2.58E-01	1.64%	1.15E-01	4.79E-01	1.64%	2.14E-01
PE	2.72E-02	0.54%	0	8.45E-02	0.54%	0	1.57E-01	0.54%	0
PVC	1.54E-02	0.30%	0	4.80E-02	0.30%	0	8.92E-02	0.30%	0
PP	3.72E-04	0.01%	0	1.16E-03	0.01%	0	2.15E-03	0.01%	0
steel	2.92E-04	0.01%	0	9.08E-04	0.01%	0	1.69E-03	0.01%	0
wood	6.88E-01	13.56%	3.93E-01	2.14E+00	13.56%	9.55E-01	3.97E+00	13.56%	1.77E+00
total	8.14E-01	16.05%	4.30E-01	2.53E+00	16.05%	1.07E+00	4.70E+00	16.05%	1.99E+00

Table 5: Material content of the product – FDMS manual

FDMS manual								
Dimension (mm)	Ø 100		Ø 315		Ø 630		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	2.35		7.33		17.89			
	kg	%	kg	%	kg	%		
Steel	1.2920	55.03%	3.1669	43.22%	5.2782	29.51%	0	0
Calcium silicate board	0.8614	36.69%	3.8270	52.23%	11.9545	66.83%	0	0
Brass	0.0100	0.43%	0.0100	0.14%	0.0100	0.06%	0	0
Plastics and rubber	0.1202	5.12%	0.1578	2.15%	0.3312	1.85%	0	0
Electronics	0.0152	0.65%	0.0152	0.21%	0.0152	0.08%	0	0
Others (graphite, etc.)	0.0489	2.08%	0.1498	2.04%	0.2981	1.67%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 6: Material content of packaging – FDMS manual

FDMS manual									
Dimension (mm)	Ø 100			Ø 315			Ø 630		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	3.84E-02	1.64%	3.71E-02	1.20E-01	1.64%	1.15E-01	2.93E-01	1.64%	2.14E-01
PE	1.26E-02	0.54%	0	3.93E-02	0.54%	0	9.59E-02	0.54%	0
PVC	7.15E-03	0.30%	0	2.23E-02	0.30%	0	5.45E-02	0.30%	0
PP	1.72E-04	0.01%	0	5.38E-04	0.01%	0	1.31E-03	0.01%	0
steel	1.35E-04	0.01%	0	4.22E-04	0.01%	0	1.03E-03	0.01%	0
wood	1.33E-02	13.56%	5.94E-03	4.14E-02	13.56%	1.85E-02	1.01E-01	13.56%	4.51E-02
total	7.17E-02	16.05%	4.30E-02	2.24E-01	16.05%	1.34E-01	5.47E-01	16.05%	2.59E-01

Table 7: Material content of the product – FDMS with an actuator

FMDS with the actuator								
Dimension (mm)	Ø 100		Ø 315		Ø 630		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	3.36		7.96		18.85			
	kg	%	kg	%	kg	%		
Steel	1.1274	33.57%	2.6299	33.02%	4.7640	25.28%	0	0
Calcium silicate board	0.8614	25.65%	3.8270	48.05%	11.9545	63.43%	0	0
Plastics and rubber	0.1205	3.59%	0.1581	1.98%	0.3315	1.76%	0	0
Electronics	1.2000	35.73%	1.2000	15.07%	1.5000	7.96%	0	0
Others (graphite, etc.)	0.0489	1.46%	0.1498	1.88%	0.2981	1.58%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 8: Material content of packaging – FDMS with an actuator

FMDS with the actuator									
Dimension (mm)	Ø 100			Ø 315			Ø 630		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	5.50E-02	1.64%	3.71E-02	1.30E-01	1.64%	1.15E-01	3.08E-01	1.64%	2.14E-01
PE	1.80E-02	0.54%	0	4.27E-02	0.54%	0	1.01E-01	0.54%	0
PVC	1.02E-02	0.30%	0	2.43E-02	0.30%	0	5.74E-02	0.30%	0
PP	2.47E-04	0.01%	0	5.85E-04	0.01%	0	1.38E-03	0.01%	0
steel	1.94E-04	0.01%	0	4.59E-04	0.01%	0	1.09E-03	0.01%	0
wood	1.90E-02	13.56%	3.93E-01	4.50E-02	13.56%	9.55E-01	1.07E-01	13.56%	1.77E+00
total	1.03E-01	16.05%	4.30E-01	2.43E-01	16.05%	1.07E+00	5.76E-01	16.05%	1.99E+00

Table 9: Material content of the product – CFDM

CFDM								
Dimension (mm)	Ø 100		Ø 315		Ø 600		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	5.07		15.75		29.29			
	kg	%	kg	%	kg	%		
Steel	0.2502	69.26%	0.3608	61.00%	0.4326	56.13%	0	0
Calcium silicate board	0.0538	14.89%	0.1594	26.95%	0.2592	33.63%	0	0
Plastics and rubber	0.0140	3.88%	0.0200	3.38%	0.0220	2.85%	0	0
Others (graphite, etc.)	0.0382	10.58%	0.0463	7.83%	0.0519	6.73%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 10: Material content of packaging – CFDM

CFDM									
Dimension (mm)	Ø 100			Ø 315			Ø 600		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	5,93E-03	1,64%	2,65E-03	9,70E-03	1,64%	4,34E-03	1,26E-02	1,64%	5,63E-03
PE	1,94E-03	0,54%	0	3,18E-03	0,54%	0	4,14E-03	0,54%	0
PVC	1,10E-03	0,30%	0	1,80E-03	0,30%	0	2,35E-03	0,30%	0
PP	2,66E-05	0,01%	0	4,35E-05	0,01%	0	5,67E-05	0,01%	0
steel	2,09E-05	0,01%	0	3,41E-05	0,01%	0	4,45E-05	0,01%	0
wood	2,05E-03	13,56%	9,15E-04	3,53E-03	13,56%	1,58E-03	4,36E-03	13,56%	1,95E-03
total	1,11E-02	16,05%	3,56E-03	1,81E-02	16,05%	5,92E-03	2,36E-02	16,05%	7,57E-03

Table 11: Material content of the product - CFDM-V

CFDM-V (with the dish valve)								
Dimension (mm)	Ø 100		Ø 315		Ø 600		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	5.07		15.75		29.29			
	kg	%	kg	%	kg	%		
Steel	0,6611	85,62%	1,1480	83,27%	1,4583	81,18%	0	0
Calcium silicate board	0,0538	6,97%	0,1594	11,56%	0,2592	14,43%	0	0
Plastics and rubber	0,0140	1,81%	0,0200	1,45%	0,0220	1,22%	0	0
Others (graphite, etc.)	0,0382	4,95%	0,0463	3,36%	0,0519	2,89%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 12: Material content of packaging – CFDM-V

CFDM-V (with the dish valve)									
Dimension (mm)	Ø 100			Ø 315			Ø 600		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1,27E-02	1,64%	2,65E-03	2,26E-02	1,64%	4,34E-03	2,94E-02	1,64%	5,63E-03
PE	4,15E-03	0,54%	0	7,40E-03	0,54%	0	9,64E-03	0,54%	0
PVC	2,35E-03	0,30%	0	4,20E-03	0,30%	0	5,47E-03	0,30%	0
PP	5,68E-05	0,01%	0	1,01E-04	0,01%	0	1,32E-04	0,01%	0
steel	4,46E-05	0,01%	0	7,95E-05	0,01%	0	1,04E-04	0,01%	0
wood	4,37E-03	13,56%	9,15E-04	7,80E-03	13,56%	1,58E-03	1,02E-02	13,56%	1,95E-03
total	2,36E-02	16,05%	3,56E-03	4,22E-02	16,05%	5,92E-03	5,49E-02	16,05%	7,57E-03

Table 13: Material content of the product – FDMR manual

FDMR manual								
Dimension (mm)	Ø 100		Ø 400		Ø 800		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	3.10		10.03		33.97			
	kg	%	kg	%	kg	%		
Steel	2.78E+00	89.48%	6.85E+00	68.26%	1.46E+01	42.99%	0	0
Calcium silicate board	1.09E-01	3.52%	2.63E+00	26.20%	1.86E+01	54.79%	0	0
Brass	2.04E-02	0.66%	4.57E-02	0.46%	2.04E-02	0.06%	0	0
Plastics and rubber	1.81E-01	5.82%	3.64E-01	3.63%	6.34E-01	1.87%	0	0
Others (graphite, etc.)	1.63E-02	0.53%	1.47E-01	1.46%	9.85E-02	0.29%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 14: Material content of packaging – FDMR manual

FMDR manual									
Dimension (mm)	Ø 100			Ø 400			Ø 800		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	5.08E-02	1.64%	2.27E-02	1.64E-01	1.64%	7.32E-02	5.56E-01	1.64%	2.48E-01
PE	1.67E-02	0.54%	0	5.38E-02	0.54%	0	1.82E-01	0.54%	0
PVC	9.46E-03	0.30%	0	3.05E-02	0.30%	0	1.03E-01	0.30%	0
PP	2.28E-04	0.01%	0	7.36E-04	0.01%	0	2.49E-03	0.01%	0
steel	1.79E-04	0.01%	0	5.78E-04	0.01%	0	1.96E-03	0.01%	0
wood	1.76E-02	13.56%	7.86E-03	5.67E-02	13.56%	2.53E-02	1.92E-01	13.56%	8.57E-02
total	9.49E-02	16.05%	3.05E-02	3.06E-01	16.05%	9.85E-02	1.04E+00	16.05%	3.34E-01

Table 15: Material content the product – FDMR with the actuator

FDMR with the actuator								
Dimension (mm)	Ø 100		Ø 400		Ø 800		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	3.29		10.14		36.31			
	kg	%	kg	%	kg	%		
Steel	1.90E+00	57.78%	5.93E+00	58.44%	1.39E+01	38.24%	0	0
Calcium silicate board	1.09E-01	3.32%	2.63E+00	25.91%	1.86E+01	51.26%	0	0
Plastics and rubber	1.65E-01	5.00%	3.40E-01	3.35%	6.10E-01	1.68%	0	0
Electronics	1.10E+00	33.40%	1.10E+00	10.85%	3.10E+00	8.54%	0	0
Others (graphite, etc.)	1.63E-02	0.50%	1.47E-01	1.45%	9.85E-02	0.27%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 16: Material content of packaging – FDMR with the actuator

FMDR with the actuator									
Dimension (mm)	Ø 100			Ø 400			Ø 800		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	5.39E-02	1.64%	2.41E-02	1.66E-01	1.64%	7.41E-02	5.94E-01	1.64%	2.65E-01
PE	1.77E-02	0.54%	0	5.44E-02	0.54%	0	1.95E-01	0.54%	0
PVC	1.00E-02	0.30%	0	3.09E-02	0.30%	0	1.11E-01	0.30%	0
PP	2.42E-04	0.01%	0	7.45E-04	0.01%	0	2.67E-03	0.01%	0
steel	1.90E-04	0.01%	0	5.84E-04	0.01%	0	2.09E-03	0.01%	0
wood	1.86E-02	13.56%	8.30E-03	5.73E-02	13.56%	2.56E-02	2.05E-01	13.56%	9.15E-02
total	1.01E-01	16.05%	3.24E-02	3.10E-01	16.05%	9.97E-02	1.11E+00	16.05%	3.57E-01

Table 17: Material content of the product – FDMQ 120 manual

FDMQ 120 manual								
Dimension (mm)	150x150		750x400		1500x800		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/ DU
Weight (kg/DU)	8.35		31.42		81.72			
	kg	%	kg	%	kg	%		
Steel	6.96E+00	83.34%	1.71E+01	54.43%	2.97E+01	36.38%	0	0
Calcium silicate board	1.18E+00	14.16%	1.39E+01	44.39%	5.16E+01	63.09%	0	0
Brass	2.04E-02	0.24%	4.57E-02	0.15%	2.04E-02	0.02%	0	0
Plastics and rubber	1.65E-01	1.98%	2.26E-01	0.72%	2.26E-01	0.28%	0	0
Electronics	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0	0
Others (graphite, etc.)	2.56E-02	0.31%	9.36E-02	0.30%	1.86E-01	0.23%	0	0
Protective cladding boards (only when installed with mineral wool)								
Steel	1.13E+00	-	4.17E+00	-	8.28E+00	-	0	0
Calcium silicate board	4.48E-02	-	4.48E-02	-	4.48E-02	-	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 18: Material content of packaging – FDMQ 120 manual

FMDQ 120 manual									
Dimension (mm)	150x150			750x400			1500x800		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.37E-01	1.64%	6.12E-02	5.14E-01	1.64%	2.29E-01	1.34E+00	1.64%	5.98E-01
PE	4.48E-02	0.54%	0	1.68E-01	0.54%	0	4.38E-01	0.54%	0
PVC	2.54E-02	0.30%	0	9.57E-02	0.30%	0	2.49E-01	0.30%	0
PP	6.13E-04	0.01%	0	2.31E-03	0.01%	0	6.00E-03	0.01%	0
steel	4.81E-04	0.01%	0	1.81E-03	0.01%	0	4.71E-03	0.01%	0
wood	4.72E-02	13.56%	2.11E-02	1.78E-01	13.56%	7.95E-02	4.62E-01	13.56%	2.06E-01
total	2.55E-01	16.05%	8.22E-02	9.60E-01	16.05%	3.09E-01	2.50E+00	16.05%	8.04E-01

Table 19: Material content the product – FDMQ 120 with the actuator

FDMQ 120 with the actuator								
Dimension (mm)	150x150		750x400		1500x800		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	8.47		31.96		84.05			
	kg	%	kg	%	kg	%		
Steel	6.02E+00	71.11%	1.62E+01	50.74%	2.90E+01	34.51%	0	0
Calcium silicate board	1.18E+00	13.96%	1.39E+01	43.65%	5.16E+01	61.34%	0	0
Brass	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0	0
Plastics and rubber	1.41E-01	1.67%	2.00E-01	0.63%	2.00E-01	0.24%	0	0
Electronics	1.10E+00	12.99%	1.50E+00	4.69%	3.10E+00	3.69%	0	0
Others (graphite, etc.)	2.56E-02	0.30%	9.36E-02	0.29%	1.86E-01	0.22%	0	0
Protective cladding boards (only when installed with mineral wool)								
Steel	1.13E+00	-	4.17E+00	-	8.28E+00	-	0	0
Calcium silicate board	4.48E-02	-	4.48E-02	-	4.48E-02	-	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 20: Material content of packaging – FDMQ 120 with the actuator

FMDQ 120 with the actuator									
Dimension (mm)	150x150			750x400			1500x800		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.39E-01	1.64%	6.21E-02	5.23E-01	1.64%	2.33E-01	1.38E+00	1.64%	6.16E-01
PE	4.54E-02	0.54%	0	1.71E-01	0.54%	0	4.51E-01	0.54%	0
PVC	2.58E-02	0.30%	0	9.73E-02	0.30%	0	2.56E-01	0.30%	0
PP	6.22E-04	0.01%	0	2.35E-03	0.01%	0	6.17E-03	0.01%	0
steel	4.88E-04	0.01%	0	1.84E-03	0.01%	0	4.84E-03	0.01%	0
wood	4.79E-02	13.56%	2.14E-02	1.81E-01	13.56%	8.08E-02	4.75E-01	13.56%	2.12E-01
total	2.59E-01	16.05%	8.34E-02	9.76E-01	16.05%	3.14E-01	2.57E+00	16.05%	8.28E-01

Table 21: Material content the product – FDMQ manual

FDMQ manual								
Dimension (mm)	150x150/500		750x400/500		1500x800/500		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	9.51		31.64		77.49			
	kg	%	kg	%	kg	%		
Steel	8.10E+00	85.20%	2.06E+01	65.08%	3.64E+01	47.02%	0	0
Calcium silicate board	9.25E-01	9.73%	1.03E+01	32.50%	4.00E+01	51.60%	0	0
Brass	2.04E-02	0.22%	2.04E-02	0.06%	4.57E-02	0.06%	0	0
Plastics and rubber	1.92E-01	2.02%	2.34E-01	0.74%	3.26E-01	0.42%	0	0
Electronics	1.52E-02	0.16%	1.52E-02	0.05%	1.52E-02	0.02%	0	0
Others (graphite, etc.)	0.25E+00	2.63%	5.13E-01	1.62%	7.26E-01	0.94%	0	0
Protective cladding boards (only when installed with mineral wool)								
Steel	1.13E+00	-	4.17E+00	-	8.28E+00	-	0	0
Calcium silicate board	4.48E-02	-	4.48E-02	-	4.48E-02	-	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 22: Material content of packaging – FDMQ manual

FMDQ manual									
Dimension (mm)	150x150/500			750x400/500			1500x800/500		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.52E-01	1.36%	6.79E-02	5.31E-01	1.36%	2.37E-01	1.34E+00	1.36%	5.98E-01
PE	4.97E-02	0.45%	0	1.74E-01	0.45%	0	4.39E-01	0.45%	0
PVC	2.82E-02	0.25%	0	9.87E-02	0.25%	0	2.49E-01	0.25%	0
PP	6.81E-04	0.01%	0	2.38E-03	0.01%	0	6.01E-03	0.01%	0
steel	5.35E-04	0.00%	0	1.87E-03	0.00%	0	4.72E-03	0.00%	0
wood	1.04E+00	11.26%	4.70E-01	3.65E+00	11.26%	1.64E+00	9.22E+00	11.26%	4.15E+00
total	1.24E+00	13.33%	5.27E-01	4.32E+00	13.33%	1.84E+00	1.09E+01	13.33%	4.65E+00

Table 23: Material content of the product – FDMQ with the actuator

FDMQ with the actuator								
Dimension (mm)	150x150/500		750x400/500		1500x800/500		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/ DU
Weight (kg/DU)	8.47		31.96		84.05			
	kg	%	kg	%	kg	%		
Steel	7.18E+00	75.38%	1.97E+01	61.46%	3.58E+01	44.87%	0	0
Calcium silicate board	9.25E-01	9.71%	1.03E+01	32.08%	4.00E+01	50.17%	0	0
Brass	7.15E-02	0.75%	1.14E-01	0.36%	2.06E-01	0.26%	0	0
Plastics and rubber	1.10E+00	11.54%	1.50E+00	4.68%	3.10E+00	3.89%	0	0
Electronics	2.51E-01	2.63%	4.63E-01	1.44%	6.47E-01	0.81%	0	0
Others (graphite, etc.)	7.20E-02	0.77%	2.76E-01	0.84%	5.52E-01	0.66%	0	0
Protective cladding boards (only when installed with mineral wool)								
Steel	1.13E+00	-	4.17E+00	-	8.28E+00	-	0	0
Calcium silicate board	4.48E-02	-	4.48E-02	-	4.48E-02	-	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 24: Material content of packaging – FDMQ with the actuator

FMDQ with the actuator									
Dimension (mm)	150x150/500			750x400/500			1500x800/500		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.54E-01	1.64%	6.88E-02	5.39E-01	1.64%	2.41E-01	1.38E+00	1.64%	6.16E-01
PE	5.03E-02	0.54%	0	1.77E-01	0.54%	0	4.52E-01	0.54%	0
PVC	2.86E-02	0.30%	0	1.00E-01	0.30%	0	2.57E-01	0.30%	0
PP	6.89E-04	0.01%	0	2.42E-03	0.01%	0	6.18E-03	0.01%	0
steel	5.41E-04	0.01%	0	1.90E-03	0.01%	0	4.85E-03	0.01%	0
wood	5.30E-02	13.56%	2.37E-02	1.86E-01	13.56%	8.30E-02	4.76E-01	13.56%	2.13E-01
total	2.87E-01	16.05%	9.24E-02	1.01E+00	16.05%	3.24E-01	2.57E+00	16.05%	8.29E-01

Table 25: Material content of the product – FDML with the actuator

FDML								
Dimension (mm)	200x300		500x500		1000x1000		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	17.99		36.12		93.22			
	kg	%	kg	%	kg	%		
Steel	7.39E+00	41.09%	1.34E+01	36.97%	2.73E+01	29.33%	0	0
Calcium silicate board	6.88E+00	38.23%	1.60E+01	44.22%	4.97E+01	53.36%	0	0
Electronics	1.10E+00	6.11%	1.50E+00	4.15%	3.10E+00	3.33%	0	0
Plastics and rubber	1.91E-01	1.06%	3.99E-01	1.10%	1.06E+00	1.13%	0	0
Others (graphite, etc.)	2.43E+00	13.51%	4.90E+00	13.56%	1.20E+01	12.85%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 26: Material content of packaging – FDML with the actuator

FMDL									
Dimension (mm)	200x300			500x500			1000x1000		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
Cardboard	2.45E-01	1.36%	1.10E-01	4.91E-01	1.36%	2.21E-01	1.27E+00	1.36%	5.70E-01
PE	8.01E-02	0.45%	0	1.61E-01	0.45%	0	4.15E-01	0.45%	0
PVC	4.55E-02	0.25%	0	9.13E-02	0.25%	0	2.36E-01	0.25%	0
PP	1.10E-03	0.01%	0	2.20E-03	0.01%	0	5.68E-03	0.01%	0
Steel	8.61E-04	0.00%	0	1.73E-03	0.00%	0	4.46E-03	0.00%	0
Wood	2.03E+00	11.26%	9.12E-01	4.07E+00	11.26%	1.83E+00	1.05E+01	11.26%	4.72E+00
Total	2.40E+00	13.33%	1.02E+00	4.81E+00	13.33%	2.05E+00	1.24E+01	13.33%	5.29E+00

Table 27: Material content of the product – FDMA manual

FDMA manual								
Dimension (mm)	180x180		800x500		1600x1000		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	9.71		35.64		99.06			
	kg	%	kg	%	kg	%		
Steel	7.65E+00	78.75%	1.90E+01	53.41%	3.55E+01	35.82%	0	0
Calcium silicate board	1.96E+00	20.15%	1.63E+01	45.65%	6.30E+01	63.59%	0	0
Plastics and rubber	3.15E-02	0.32%	1.07E-01	0.30%	2.11E-01	0.21%	0	0
Others (graphite, etc.)	7.59E-02	0.78%	2.26E-01	0.63%	3.75E-01	0.38%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 28: Material content of packaging – FDMA manual

FMDA manual									
Dimension (mm)	180x180			800x500			1600x1000		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.32E-01	1.36%	5.94E-02	4.84E-01	1.36%	2.18E-01	1.35E+00	1.36%	6.06E-01
PE	4.32E-02	0.45%	0	1.59E-01	0.45%	0	4.41E-01	0.45%	0
PVC	2.45E-02	0.25%	0	9.01E-02	0.25%	0	2.50E-01	0.25%	0
PP	5.92E-04	0.01%	0	2.17E-03	0.01%	0	6.04E-03	0.01%	0
steel	4.65E-04	0.00%	0	1.71E-03	0.00%	0	4.74E-03	0.00%	0
wood	1.09E+00	11.26%	4.92E-01	4.01E+00	11.26%	1.81E+00	1.12E+01	11.26%	5.02E+00
total	1.29E+00	13.33%	5.50E-01	4.75E+00	13.33%	2.02E+00	1.32E+01	13.33%	5.63E+00

Table 29: Material content of the product – FDMA with the actuator

FDMA with the actuator								
Dimension (mm)	180x180		800x500		1600x1000		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/ DU
Weight (kg/DU)	10.23		36.56		100.45			
	kg	%	kg	%	kg	%		
Steel	6.87E+00	67.13%	1.83E+01	49.94%	3.41E+01	33.93%	0	0
Calcium silicate board	2.16E+00	21.09%	1.65E+01	45.05%	6.26E+01	62.34%	0	0
Electronics	1.10E+00	10.75%	1.50E+00	4.10%	3.10E+00	3.09%	0	0
Plastics and rubber	3.04E-02	0.30%	1.06E-01	0.29%	2.10E-01	0.21%	0	0
Others (graphite, etc.)	7.49E-02	0.73%	2.25E-01	0.62%	4.33E-01	0.43%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 30: Material content of packaging – FDMA with the actuator

FMDA with the actuator									
Dimension (mm)	180x180			800x500			1600x1000		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
cardboard	1.39E-01	1.36%	6.26E-02	4.97E-01	1.36%	2.24E-01	1.36E+00	1.36%	6.14E-01
PE	4.56E-02	0.45%	0	1.63E-01	0.45%	0	4.47E-01	0.45%	0
PVC	2.59E-02	0.25%	0	9.24E-02	0.25%	0	2.54E-01	0.25%	0
PP	6.24E-04	0.01%	0	2.23E-03	0.01%	0	6.12E-03	0.01%	0
steel	4.90E-04	0.00%	0	1.75E-03	0.00%	0	4.81E-03	0.00%	0
wood	1.15E+00	11.26%	5.19E-01	4.12E+00	11.26%	1.85E+00	1.13E+01	11.26%	5.09E+00
total	1.36E+00	13.33%	5.81E-01	4.87E+00	13.33%	2.08E+00	1.34E+01	13.33%	5.70E+00

Table 31: Material content of the product – FDMR 60 manual

FDMR 60 manual								
Dimension (mm)	Ø 100		Ø 200		Ø 400		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	3.01		4.57		8.88			
	kg	%	kg	%	kg	%		
Steel	2.80E+00	88.70%	3.90E+00	84.21%	6.76E+00	74.67%	0	0
Calcium silicate board	8.21E-02	2.60%	3.89E-01	8.41%	1.68E+00	18.60%	0	0
Plastics and rubber	2.38E-01	0.00%	2.88E-01	6.22%	4.96E-01	5.48%	0	0
Others (graphite, etc.)	3.67E-02	7.54%	5.39E-02	1.16%	1.14E-01	1.26%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 32: Material content of packaging – FDMR 60 manual

FDMR 60 manual									
Dimension (mm)	Ø 100			Ø 200			Ø 400		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
Cardboard	4.29E-02	1.36%	1.93E-02	6.29E-02	1.36%	2.83E-02	1.23E-01	1.36%	5.53E-02
PE	1.40E-02	0.45%	0	2.06E-02	0.45%	0	4.03E-02	0.45%	0
PVC	7.98E-03	0.25%	0	1.17E-02	0.25%	0	2.29E-02	0.25%	0
PP	1.92E-04	0.01%	0	2.82E-04	0.01%	0	5.52E-04	0.01%	0
Steel	1.51E-04	0.00%	0	2.22E-04	0.00%	0	4.33E-04	0.00%	0
Wood	3.55E-01	11.26%	1.60E-01	5.22E-01	11.26%	2.35E-01	1.02E+00	11.26%	4.59E-01
Total	4.20E-01	13.33%	1.79E-01	6.17E-01	13.33%	2.63E-01	1.21E+00	13.33%	5.14E-01

Table 33: Material content of the product – FDMR 60 with the actuator

FDMR 60 with the actuator								
Dimension (mm)	Ø 100		Ø 200		Ø 400		Post-consumer recycled material, weight-%*	Biogenic material, weight-% and kg C/DU
Weight (kg/DU)	3.12		4.59		8.14			
	kg	%	kg	%	kg	%		
Steel	1.81E+00	57.99%	2.91E+00	63.45%	5.02E+00	61.67%	0	0
Calcium silicate board	8.21E-02	2.63%	3.89E-01	8.48%	1.68E+00	20.68%	0	0
Electronics	1.10E+00	35.23%	1.10E+00	23.96%	1.10E+00	13.52%	0	0
Plastics and rubber	1.13E-01	3.63%	1.55E-01	3.38%	2.68E-01	3.30%	0	0
Others (graphite, etc.)	1.63E-02	0.52%	3.36E-02	0.73%	6.81E-02	0.84%	0	0

** the recyclate content is not declared, a pessimistic scenario of 0 % content is considered*

Table 34: Material content of packaging – FDMR 60 with the actuator

FDMR 60 with the actuator									
Dimension (mm)	Ø 100			Ø 200			Ø 400		
Packaging	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU	kg/DU	Weight-% (versus the product)	Weight biogenic carbon, kg C/DU
Cardboard	4.24E-02	1.36%	1.91E-02	6.24E-02	1.36%	2.81E-02	1.11E-01	1.36%	4.98E-02
PE	1.39E-02	0.45%	0	2.04E-02	0.45%	0	3.62E-02	0.45%	0
PVC	7.89E-03	0.25%	0	1.16E-02	0.25%	0	2.06E-02	0.25%	0
PP	1.90E-04	0.01%	0	2.80E-04	0.01%	0	4.96E-04	0.01%	0
Steel	1.49E-04	0.00%	0	2.20E-04	0.00%	0	3.89E-04	0.00%	0
Wood	3.52E-01	11.26%	1.58E-01	5.17E-01	11.26%	2.33E-01	9.16E-01	11.26%	4.12E-01
Total	4.16E-01	13.33%	1.77E-01	6.12E-01	13.33%	2.61E-01	1.08E+00	13.33%	4.62E-01

LCA RESULTS

Unlisted modules have zero results.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
It is not recommended to use the results of modules A1-A3 without considering the results of module C.

Table 35: Core environmental impact indicators - FDMB, 100x100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,72E+01	3,03E-01	7,33E+00	0	4,50E-02	6,64E-01	1,60E-03	-9,45E+00
Climate change - Biogenic	kg CO2 eq	1,15E-01	2,78E-04	4,08E-01	0	4,12E-05	1,22E-05	1,02E-05	-2,46E-02
Climate change - Land use and LU change	kg CO2 eq	1,63E-02	1,50E-04	2,18E-03	0	2,22E-05	2,01E-05	1,17E-06	-6,80E-03
Climate change	kg CO2 eq	1,74E+01	3,03E-01	7,74E+00	0	4,51E-02	6,64E-01	1,61E-03	-9,48E+00
GWP-GHG	kg CO2 eq	1,73E+01	3,03E-01	7,33E+00	0	4,50E-02	6,65E-01	1,61E-03	-9,46E+00
Ozone depletion	kg CFC11 eq	4,21E-07	6,60E-09	2,21E-08	0	9,80E-10	8,29E-10	3,79E-11	-1,61E-07
Acidification	mol H+ eq	1,97E-01	6,62E-04	3,16E-02	0	9,83E-05	2,67E-04	1,14E-05	-5,11E-02
Eutrophication, freshwater*	kg P eq	1,10E-02	2,15E-05	1,38E-03	0	3,20E-06	6,65E-06	4,20E-07	-5,80E-03
Eutrophication, marine	kg N eq	2,37E-02	1,67E-04	5,84E-03	0	2,48E-05	1,13E-04	4,27E-06	-1,00E-02
Eutrophication, terrestrial	mol N eq	6,72E-01	1,70E-03	6,37E-02	0	2,52E-04	1,18E-03	4,57E-05	-1,02E-01
Photochemical ozone formation	kg NMVOC eq	8,33E-02	1,03E-03	1,86E-02	0	1,53E-04	2,53E-04	1,54E-05	-4,47E-02
Resource use, minerals and metals*	kg Sb eq	1,03E-03	9,90E-07	7,77E-06	0	1,47E-07	2,18E-07	3,25E-09	-1,93E-04
Resource use, fossils*	MJ	2,22E+02	4,30E+00	4,25E+01	0	6,39E-01	2,44E-01	3,47E-02	-1,04E+02
Water use*	m^3 depriv.	2,54E+00	1,77E-02	1,43E+00	0	2,63E-03	1,21E-02	1,47E-03	4,01E-01

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

Table 36: Additional environmental impact indicators - FDMB, 100x100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	2,29E-06	2,26E-08	4,63E-07	0	3,35E-09	2,54E-09	2,46E-10	-7,85E-07
Human toxicity, non-cancer*	CTUh	5,34E-07	3,05E-09	4,30E-08	0	4,53E-10	5,61E-09	1,00E-11	-3,26E-07
Human toxicity, cancer*	CTUh	8,65E-08	1,38E-10	1,73E-09	0	2,05E-11	6,87E-11	8,95E-13	-7,20E-08
Land use*	Pt	6,45E+01	2,60E+00	3,47E+01	0	3,86E-01	4,48E-01	7,93E-02	-3,42E+01
Ionising radiation**	kBq U-235 eq	1,54E+00	5,82E-03	3,16E-01	0	8,65E-04	9,72E-04	4,58E-05	-5,20E-01
Ecotoxicity, freshwater	CTUe	2,30E+02	2,13E+00	1,34E+01	0	3,16E-01	3,75E+00	1,52E-02	-6,43E+01

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 37: Parameters describing resource use - FDMB, 100x100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,69E+01	6,76E-02	9,25E+00	0	1,00E-02	4,01E-02	5,96E-04	-9,18E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,69E+01	6,76E-02	9,25E+00	0	1,00E-02	4,01E-02	5,96E-04	-9,18E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,34E+02	4,57E+00	4,48E+01	0	6,79E-01	2,62E-01	3,69E-02	-1,10E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,34E+02	4,57E+00	4,48E+01	0	6,79E-01	2,62E-01	3,69E-02	-1,10E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	5,85E-02	1,68E-03	4,29E-03	0	7,45E-05	6,46E-05	1,20E-04	-1,51E-02

Table 38: Other environmental information describing waste categories - FDMB, 100x100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,49E-02	1,08E-04	7,94E-03	0	1,60E-05	9,68E-03	8,64E-07	-3,27E-03
Non-hazardous waste disposed	kg	6,33E+00	2,14E-01	3,58E-01	0	3,17E-02	2,31E-02	1,37E-01	-3,98E+00
Radioactive waste disposed/stored	kg	3,78E-04	1,41E-06	7,19E-05	0	2,10E-07	2,40E-07	1,10E-08	-1,28E-04

Table 39: Environmental information describing output flows - FDMB, 100x100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	8,84E-02	0	0	3,55E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	7,17E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,40E+00	0	0

Table 40: Core environmental impact indicators - FDMB, 100x100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,91E+01	3,14E-01	7,33E+00	1,29E+02	4,67E-02	6,91E-01	1,61E-03	-6,76E+00
Climate change - Biogenic	kg CO2 eq	1,26E-01	2,88E-04	4,08E-01	1,23E+00	4,28E-05	1,22E-05	1,02E-05	-1,74E-02
Climate change - Land use and LU change	kg CO2 eq	2,19E-02	1,55E-04	2,18E-03	1,76E-01	2,31E-05	2,09E-05	1,17E-06	-4,84E-03
Climate change	kg CO2 eq	1,92E+01	3,15E-01	7,74E+00	1,31E+02	4,68E-02	6,91E-01	1,62E-03	-6,78E+00
GWP-GHG	kg CO2 eq	1,92E+01	3,14E-01	7,34E+00	1,30E+02	4,68E-02	6,92E-01	1,61E-03	-6,77E+00
Ozone depletion	kg CFC11 eq	4,15E-07	6,84E-09	2,21E-08	9,29E-07	1,02E-09	8,63E-10	3,79E-11	-1,15E-07
Acidification	mol H+ eq	2,30E-01	6,87E-04	3,16E-02	5,80E-01	1,02E-04	2,78E-04	1,14E-05	-3,03E-02
Eutrophication, freshwater*	kg P eq	1,42E-02	2,23E-05	1,38E-03	2,03E-01	3,32E-06	6,92E-06	4,21E-07	-3,68E-03
Eutrophication, marine	kg N eq	2,62E-02	1,73E-04	5,84E-03	1,26E-01	2,58E-05	1,18E-04	4,27E-06	-6,99E-03
Eutrophication, terrestrial	mol N eq	6,10E-01	1,76E-03	6,37E-02	9,33E-01	2,62E-04	1,23E-03	4,57E-05	-6,99E-02
Photochemical ozone formation	kg NMVOC eq	9,45E-02	1,07E-03	1,86E-02	2,74E-01	1,59E-04	2,64E-04	1,55E-05	-3,11E-02
Resource use, minerals and metals*	kg Sb eq	1,16E-03	1,03E-06	7,77E-06	8,41E-04	1,53E-07	2,27E-07	3,26E-09	-4,52E-05
Resource use, fossils*	MJ	2,37E+02	4,46E+00	4,25E+01	2,09E+03	6,64E-01	2,54E-01	3,48E-02	-7,43E+01
Water use*	m^3 depriv.	3,82E+00	1,84E-02	1,43E+00	2,22E+01	2,74E-03	1,26E-02	1,47E-03	3,85E-01

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

Table 41: Additional environmental impact indicators - FDMB, 100x100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	2,30E-06	2,34E-08	4,63E-07	1,40E-06	3,48E-09	2,64E-09	2,46E-10	-5,52E-07
Human toxicity, non-cancer*	CTUh	1,21E-06	3,17E-09	4,30E-08	1,47E-06	4,71E-10	5,84E-09	1,01E-11	-1,44E-07
Human toxicity, cancer*	CTUh	9,43E-08	1,43E-10	1,73E-09	4,30E-08	2,13E-11	7,15E-11	8,97E-13	-5,05E-08
Land use*	Pt	7,69E+01	2,70E+00	3,47E+01	2,17E+02	4,01E-01	4,66E-01	7,94E-02	-2,28E+01
Ionising radiation**	kBq U-235 eq	1,54E+00	6,04E-03	3,16E-01	5,41E+01	8,99E-04	1,01E-03	4,59E-05	-3,78E-01
Ecotoxicity, freshwater	CTUe	2,38E+02	2,21E+00	1,34E+01	4,58E+02	3,28E-01	3,91E+00	1,52E-02	-3,69E+01

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 42: Parameters describing resource use - FDMB, 100x100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,99E+01	7,01E-02	9,25E+00	1,43E+02	1,04E-02	4,17E-02	5,97E-04	-6,30E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,99E+01	7,01E-02	9,25E+00	1,43E+02	1,04E-02	4,17E-02	5,97E-04	-6,30E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,51E+02	4,74E+00	4,48E+01	2,22E+03	7,06E-01	2,73E-01	3,70E-02	-7,87E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,51E+02	4,74E+00	4,48E+01	2,22E+03	7,06E-01	2,73E-01	3,70E-02	-7,87E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	6,08E-02	1,75E-03	4,46E-03	4,58E-02	7,75E-05	6,72E-05	1,25E-04	-1,57E-02

Table 43: Other environmental information describing waste categories - FDMB, 100x100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	2,59E-02	1,12E-04	7,94E-03	1,58E-01	1,66E-05	1,01E-02	8,65E-07	-2,18E-03
Non-hazardous waste disposed	kg	7,12E+00	2,22E-01	3,59E-01	1,28E+01	3,30E-02	2,40E-02	1,37E-01	-2,85E+00
Radioactive waste disposed/stored	kg	3,78E-04	1,47E-06	7,19E-05	1,30E-02	2,18E-07	2,50E-07	1,10E-08	-9,25E-05

Table 44: Environmental information describing output flows - FDMB, 100x100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	9,20E-02	0	0	4,71E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	6,18E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,21E+00	0	0

Table 45: Core environmental impact indicators - FDMB, 500x400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	4,82E+01	2,18E+00	1,33E+01	0	1,44E-01	2,11E-01	4,59E-02	-2,05E+01
Climate change - Biogenic	kg CO2 eq	-3,00E-01	2,00E-03	7,40E-01	0	1,32E-04	2,14E-05	2,92E-04	-4,67E-02
Climate change - Land use and LU change	kg CO2 eq	4,13E-02	1,08E-03	3,97E-03	0	7,10E-05	1,28E-06	3,34E-05	-1,41E-02
Climate change	kg CO2 eq	4,80E+01	2,18E+00	1,41E+01	0	1,44E-01	2,11E-01	4,62E-02	-2,05E+01
GWP-GHG	kg CO2 eq	4,78E+01	2,18E+00	1,33E+01	0	1,44E-01	2,11E-01	4,61E-02	-2,05E+01
Ozone depletion	kg CFC11 eq	1,60E-06	4,75E-08	4,02E-08	0	3,13E-09	2,37E-10	1,09E-09	-3,55E-07
Acidification	mol H+ eq	4,91E-01	4,77E-03	5,74E-02	0	3,14E-04	4,75E-05	3,27E-04	-1,09E-01
Eutrophication, freshwater*	kg P eq	2,65E-02	1,55E-04	2,51E-03	0	1,02E-05	5,27E-07	1,20E-05	-1,15E-02
Eutrophication, marine	kg N eq	6,30E-02	1,20E-03	1,06E-02	0	7,93E-05	2,74E-05	1,22E-04	-2,18E-02
Eutrophication, terrestrial	mol N eq	1,71E+00	1,22E-02	1,16E-01	0	8,05E-04	2,35E-04	1,31E-03	-2,24E-01
Photochemical ozone formation	kg NMVOC eq	2,15E-01	7,40E-03	3,38E-02	0	4,88E-04	5,83E-05	4,42E-04	-9,93E-02
Resource use, minerals and metals*	kg Sb eq	1,79E-03	7,13E-06	1,41E-05	0	4,70E-07	1,04E-08	9,32E-08	-3,89E-04
Resource use, fossils*	MJ	6,02E+02	3,10E+01	7,72E+01	0	2,04E+00	3,30E-02	9,94E-01	-2,19E+02
Water use*	m³ depriv.	4,46E+00	1,28E-01	2,59E+00	0	8,42E-03	1,23E-03	4,21E-02	1,13E+00

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

Table 36: Additional environmental impact indicators - FDMB, 500x400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	5,72E-06	1,62E-07	8,42E-07	0	1,07E-08	2,30E-10	7,04E-09	-1,78E-06
Human toxicity, non-cancer*	CTUh	1,24E-06	2,20E-08	7,81E-08	0	1,45E-09	5,56E-10	2,88E-10	-6,91E-07
Human toxicity, cancer*	CTUh	2,15E-07	9,94E-10	3,14E-09	0	6,55E-11	1,23E-11	2,56E-11	-1,64E-07
Land use*	Pt	1,52E+02	1,87E+01	6,31E+01	0	1,23E+00	1,42E-02	2,27E+00	-7,56E+01
Ionising radiation**	kBq U-235 eq	4,20E+00	4,19E-02	5,74E-01	0	2,76E-03	1,16E-04	1,31E-03	-7,76E-01
Ecotoxicity, freshwater	CTUe	5,49E+02	1,53E+01	2,44E+01	0	1,01E+00	4,81E-01	4,36E-01	-1,39E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 47: Parameters describing resource use - FDMB, 500x400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,10E+01	4,87E-01	1,68E+01	0	3,21E-02	2,27E-03	1,71E-02	-2,02E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,10E+01	4,87E-01	1,68E+01	0	3,21E-02	2,27E-03	1,71E-02	-2,02E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,83E+02	3,29E+01	8,14E+01	0	2,17E+00	3,57E-02	1,06E+00	-2,31E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,83E+02	3,29E+01	8,14E+01	0	2,17E+00	3,57E-02	1,06E+00	-2,31E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,87E-01	5,36E-03	1,37E-02	0	2,38E-04	2,06E-04	3,84E-04	-4,82E-02

Table 48: Other environmental information describing waste categories - FDMB, 500x400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	4,13E-02	7,75E-04	1,44E-02	0	5,11E-05	2,41E-03	2,48E-05	-6,43E-03
Non-hazardous waste disposed	kg	1,74E+01	1,54E+00	6,72E-01	0	1,01E-01	3,09E-03	3,93E+00	-9.00E+00
Radioactive waste disposed/stored	kg	1,01E-03	1,02E-05	1,31E-04	0	6,71E-07	2,87E-08	3,16E-07	-1,93E-04

Table 49: Environmental information describing output flows - FDMB, 500x400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	2,82E-01	0	0	1,13E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	3,43E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	6,70E-01	0	0

Table 50: Core environmental impact indicators - FDMB, 500x400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	5,01E+01	9,77E-01	1,66E+01	1,29E+02	1,46E-01	4,82E-01	4,59E-02	-1,85E+01
Climate change - Biogenic	kg CO2 eq	-2,43E-01	8,95E-04	3,36E-01	1,23E+00	1,33E-04	2,14E-05	2,92E-04	-3,98E-02
Climate change - Land use and LU change	kg CO2 eq	4,67E-02	4,83E-04	8,60E-03	1,76E-01	7,19E-05	1,99E-05	3,34E-05	-1,24E-02
Climate change	kg CO2 eq	4,99E+01	9,79E-01	1,70E+01	1,31E+02	1,46E-01	4,82E-01	4,63E-02	-1,86E+01
GWP-GHG	kg CO2 eq	4,97E+01	9,78E-01	1,68E+01	1,30E+02	1,46E-01	4,83E-01	4,61E-02	-1,85E+01
Ozone depletion	kg CFC11 eq	1,60E-06	2,13E-08	7,54E-08	9,29E-07	3,17E-09	6,29E-10	1,09E-09	-3,24E-07
Acidification	mol H+ eq	5,17E-01	2,14E-03	8,01E-02	5,80E-01	3,18E-04	2,33E-04	3,27E-04	-8,38E-02
Eutrophication, freshwater*	kg P eq	2,90E-02	6,95E-05	2,92E-03	2,03E-01	1,03E-05	6,47E-06	1,20E-05	-9,04E-03
Eutrophication, marine	kg N eq	6,54E-02	5,39E-04	1,72E-02	1,26E-01	8,03E-05	9,12E-05	1,22E-04	-1,92E-02
Eutrophication, terrestrial	mol N eq	1,66E+00	5,48E-03	1,86E-01	9,33E-01	8,16E-04	9,99E-04	1,31E-03	-1,95E-01
Photochemical ozone formation	kg NMVOC eq	2,25E-01	3,32E-03	5,42E-02	2,74E-01	4,94E-04	2,07E-04	4,42E-04	-8,82E-02
Resource use, minerals and metals*	kg Sb eq	1,79E-03	3,19E-06	3,70E-05	8,41E-04	4,76E-07	2,19E-07	9,32E-08	-1,32E-04
Resource use, fossils*	MJ	6,18E+02	1,39E+01	1,14E+02	2,09E+03	2,07E+00	2,23E-01	9,95E-01	-1,97E+02
Water use*	m³ depriv.	7,84E+00	5,72E-02	3,09E+00	2,22E+01	8,53E-03	1,14E-02	4,21E-02	1,33E+00

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

Table 51: Additional environmental impact indicators - FDMB, 500x400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	5,74E-06	7,28E-08	1,12E-06	1,40E-06	1,08E-08	2,44E-09	7,04E-09	-1,61E-06
Human toxicity, non-cancer*	CTUh	1,79E-06	9,85E-09	1,29E-07	1,47E-06	1,47E-09	5,34E-09	2,88E-10	-4,17E-07
Human toxicity, cancer*	CTUh	2,22E-07	4,46E-10	5,68E-09	4,30E-08	6,64E-11	5,97E-11	2,57E-11	-1,49E-07
Land use*	Pt	1,62E+02	8,39E+00	8,74E+01	2,17E+02	1,25E+00	4,58E-01	2,27E+00	-6,45E+01
Ionising radiation**	kBq U-235 eq	4,20E+00	1,88E-02	2,77E-01	5,41E+01	2,80E-03	9,06E-04	1,31E-03	-6,20E-01
Ecotoxicity, freshwater	CTUe	5,45E+02	6,86E+00	4,88E+01	4,58E+02	1,02E+00	3,46E+00	4,36E-01	-1,04E+02

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Table 52: Parameters describing resource use - FDMB, 500x400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,37E+01	2,18E-01	1,33E+01	1,43E+02	3,25E-02	3,99E-02	1,71E-02	-1,77E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,37E+01	2,18E-01	1,33E+01	1,43E+02	3,25E-02	3,99E-02	1,71E-02	-1,77E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	6,00E+02	1,48E+01	1,21E+02	2,22E+03	2,20E+00	2,39E-01	1,06E+00	-2,08E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	6,00E+02	1,48E+01	1,21E+02	2,22E+03	2,20E+00	2,39E-01	1,06E+00	-2,08E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,89E-01	5,42E-03	1,39E-02	1,42E-01	2,41E-04	2,09E-04	3,89E-04	-4,88E-02

Table 53: Other environmental information describing waste categories - FDMB, 500x400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	5,02E-02	3,48E-04	6,17E-03	1,58E-01	5,18E-05	7,73E-03	2,48E-05	-5,27E-03
Non-hazardous waste disposed	kg	1,87E+01	6,90E-01	1,52E+00	1,28E+01	1,03E-01	2,11E-02	3,93E+00	-8,22E+00
Radioactive waste disposed/stored	kg	1,01E-03	4,56E-06	6,77E-05	1,30E-02	6,80E-07	2,24E-07	3,16E-07	-1,54E-04

Table 54: Environmental information describing output flows - FDMB, 500x400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	2,86E-01	0	0	1,15E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	2,74E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	5,35E-01	0	0

Table 55: Core environmental impact indicators - FDMB, 1000x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	8,08E+01	1,68E+00	1,93E+01	0	2,49E-01	3,38E-01	1,15E-01	-3,05E+01
Climate change - Biogenic	kg CO2 eq	-9,97E-01	1,54E-03	1,07E+00	0	2,29E-04	3,87E-05	7,34E-04	-6,92E-02
Climate change - Land use and LU change	kg CO2 eq	6,63E-02	8,29E-04	5,75E-03	0	1,23E-04	1,91E-06	8,40E-05	-2,09E-02
Climate change	kg CO2 eq	7,99E+01	1,68E+00	2,04E+01	0	2,50E-01	3,38E-01	1,16E-01	-3,06E+01
GWP-GHG	kg CO2 eq	7,96E+01	1,68E+00	1,93E+01	0	2,50E-01	3,38E-01	1,16E-01	-3,05E+01
Ozone depletion	kg CFC11 eq	3,05E-06	3,66E-08	5,83E-08	0	5,43E-09	3,79E-10	2,73E-09	-5,30E-07
Acidification	mol H+ eq	7,48E-01	3,67E-03	8,33E-02	0	5,45E-04	7,51E-05	8,21E-04	-1,54E-01
Eutrophication, freshwater*	kg P eq	4,15E-02	1,19E-04	3,63E-03	0	1,77E-05	8,02E-07	3,02E-05	-1,65E-02
Eutrophication, marine	kg N eq	1,02E-01	9,26E-04	1,54E-02	0	1,38E-04	4,36E-05	3,07E-04	-3,22E-02
Eutrophication, terrestrial	mol N eq	2,63E+00	9,41E-03	1,68E-01	0	1,40E-03	3,72E-04	3,29E-03	-3,29E-01
Photochemical ozone formation	kg NMVOC eq	3,44E-01	5,70E-03	4,91E-02	0	8,46E-04	9,28E-05	1,11E-03	-1,47E-01
Resource use, minerals and metals*	kg Sb eq	2,32E-03	5,49E-06	2,05E-05	0	8,15E-07	1,51E-08	2,34E-07	-4,60E-04
Resource use, fossils*	MJ	1,02E+03	2,39E+01	1,12E+02	0	3,54E+00	5,16E-02	2,50E+00	-3,26E+02
Water use*	m^3 depriv.	1,14E+01	9,83E-02	3,75E+00	0	1,46E-02	1,90E-03	1,06E-01	1,83E+00

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Table 56: Additional environmental impact indicators - FDMB, 1000x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	8,68E-06	1,25E-07	1,22E-06	0	1,86E-08	3,52E-10	1,77E-08	-2,64E-06
Human toxicity, non-cancer*	CTUh	1,76E-06	1,69E-08	1,13E-07	0	2,51E-09	8,57E-10	7,23E-10	-9,15E-07
Human toxicity, cancer*	CTUh	3,19E-07	7,66E-10	4,55E-09	0	1,14E-10	1,94E-11	6,45E-11	-2,44E-07
Land use*	Pt	2,32E+02	1,44E+01	9,15E+01	0	2,14E+00	1,94E-02	5,71E+00	-1,10E+02
Ionising radiation**	kBq U-235 eq	7,24E+00	3,23E-02	8,33E-01	0	4,80E-03	1,80E-04	3,30E-03	-1,16E+00
Ecotoxicity, freshwater	CTUe	8,40E+02	1,18E+01	3,55E+01	0	1,75E+00	7,51E-01	1,10E+00	-1,95E+02

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Table 57: Parameters describing resource use - FDMB, 1000x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	6,34E+01	3,75E-01	2,44E+01	0	5,57E-02	3,36E-03	4,29E-02	-2,97E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	6,34E+01	3,75E-01	2,44E+01	0	5,57E-02	3,36E-03	4,29E-02	-2,97E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	9,33E+02	2,54E+01	1,18E+02	0	3,77E+00	5,59E-02	2,66E+00	-3,45E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	9,33E+02	2,54E+01	1,18E+02	0	3,77E+00	5,59E-02	2,66E+00	-3,45E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	3,24E-01	9,31E-03	2,38E-02	0	4,14E-04	3,58E-04	6,67E-04	-8,38E-02

Table 58: Other environmental information describing waste categories - FDMB, 1000x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	6,28E-02	5,97E-04	2,09E-02	0	8,87E-05	3,83E-03	6,22E-05	-9,36E-03
Non-hazardous waste disposed	kg	2,92E+01	1,19E+00	9,87E-01	0	1,76E-01	4,83E-03	9,87E+00	-1,34E+01
Radioactive waste disposed/stored	kg	1,72E-03	7,84E-06	1,89E-04	0	1,16E-06	4,47E-08	7,94E-07	-2,87E-04

Table 59: Environmental information describing output flows - FDMB, 1000x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	4,91E-01	0	0	1,68E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	5,53E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,08E+00	0	0

Table 60: Core environmental impact indicators - FDMB, 1000x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	8,37E+01	1,82E+00	1,93E+01	3,53E+02	2,70E-01	1,08E+00	1,15E-01	-2,89E+01
Climate change - Biogenic	kg CO2 eq	-9,71E-01	1,67E-03	1,07E+00	3,36E+00	2,47E-04	3,87E-05	7,34E-04	-6,39E-02
Climate change - Land use and LU change	kg CO2 eq	7,19E-02	8,98E-04	5,75E-03	4,79E-01	1,33E-04	5,00E-05	8,40E-05	-1,97E-02
Climate change	kg CO2 eq	8,28E+01	1,82E+00	2,04E+01	3,57E+02	2,70E-01	1,08E+00	1,16E-01	-2,90E+01
GWP-GHG	kg CO2 eq	8,25E+01	1,82E+00	1,93E+01	3,54E+02	2,70E-01	1,08E+00	1,16E-01	-2,89E+01
Ozone depletion	kg CFC11 eq	3,09E-06	3,96E-08	5,83E-08	2,53E-06	5,87E-09	1,44E-09	2,73E-09	-5,04E-07
Acidification	mol H+ eq	7,81E-01	3,97E-03	8,33E-02	1,58E+00	5,90E-04	5,62E-04	8,21E-04	-1,31E-01
Eutrophication, freshwater*	kg P eq	4,31E-02	1,29E-04	3,63E-03	5,53E-01	1,92E-05	1,62E-05	3,02E-05	-1,43E-02
Eutrophication, marine	kg N eq	1,06E-01	1,00E-03	1,54E-02	3,44E-01	1,49E-04	2,14E-04	3,07E-04	-3,01E-02
Eutrophication, terrestrial	mol N eq	2,61E+00	1,02E-02	1,68E-01	2,55E+00	1,51E-03	2,39E-03	3,29E-03	-3,05E-01
Photochemical ozone formation	kg NMVOC eq	3,62E-01	6,17E-03	4,91E-02	7,47E-01	9,15E-04	4,88E-04	1,11E-03	-1,37E-01
Resource use, minerals and metals*	kg Sb eq	2,33E-03	5,94E-06	2,05E-05	2,29E-03	8,82E-07	5,52E-07	2,34E-07	-2,05E-04
Resource use, fossils*	MJ	1,04E+03	2,58E+01	1,12E+02	5,71E+03	3,83E+00	5,48E-01	2,50E+00	-3,08E+02
Water use*	m³ depriv.	1,30E+01	1,06E-01	3,75E+00	6,06E+01	1,58E-02	2,84E-02	1,06E-01	2,02E+00

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

Table 61: Additional environmental impact indicators - FDMB, 1000x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	8,88E-06	1,35E-07	1,22E-06	3,82E-06	2,01E-08	6,08E-09	1,77E-08	-2,49E-06
Human toxicity, non-cancer*	CTUh	2,32E-06	1,83E-08	1,13E-07	4,00E-06	2,72E-09	1,33E-08	7,23E-10	-6,47E-07
Human toxicity, cancer*	CTUh	3,31E-07	8,29E-10	4,55E-09	1,17E-07	1,23E-10	1,44E-10	6,45E-11	-2,30E-07
Land use*	Pt	2,45E+02	1,56E+01	9,15E+01	5,92E+02	2,32E+00	1,16E+00	5,71E+00	-1,01E+02
Ionising radiation**	kBq U-235 eq	6,98E+00	3,50E-02	8,33E-01	1,48E+02	5,19E-03	2,24E-03	3,30E-03	-1,05E+00
Ecotoxicity, freshwater	CTUe	8,45E+02	1,28E+01	3,55E+01	1,25E+03	1,89E+00	8,52E+00	1,10E+00	-1,63E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 62: Parameters describing resource use - FDMB, 1000x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	6,63E+01	4,06E-01	2,44E+01	3,89E+02	6,02E-02	1,01E-01	4,29E-02	-2,76E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	6,63E+01	4,06E-01	2,44E+01	3,89E+02	6,02E-02	1,01E-01	4,29E-02	-2,76E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	9,62E+02	2,74E+01	1,18E+02	6,05E+03	4,07E+00	5,87E-01	2,66E+00	-3,26E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	9,62E+02	2,74E+01	1,18E+02	6,05E+03	4,07E+00	5,87E-01	2,66E+00	-3,26E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	3,52E-01	1,01E-02	2,58E-02	2,65E-01	4,48E-04	3,88E-04	7,23E-04	-9,08E-02

Table 63: Other environmental information describing waste categories - FDMB, 1000x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	7,36E-02	6,47E-04	2,09E-02	4,31E-01	9,59E-05	1,80E-02	6,22E-05	-8,38E-03
Non-hazardous waste disposed	kg	3,06E+01	1,28E+00	9,94E-01	3,49E+01	1,90E-01	5,19E-02	9,87E+00	-1,28E+01
Radioactive waste disposed/stored	kg	1,66E-03	8,49E-06	1,89E-04	3,54E-02	1,26E-06	5,52E-07	7,94E-07	-2,62E-04

Table 64: Environmental information describing output flows - FDMB, 1000x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	5,32E-01	0	0	1,91E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	4,54E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	8,87E-01	0	0

Table 65: Core environmental impact indicators - FDMS, DN 100, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	7,78E+00	4,25E-01	5,64E+00	0	2,16E-02	2,88E-01	1,07E-02	-2,48E+00
Climate change - Biogenic	kg CO2 eq	-3,86E-01	3,89E-04	3,87E-01	0	1,98E-05	3,19E-05	6,78E-05	-6,13E-03
Climate change - Land use and LU change	kg CO2 eq	7,89E-03	2,10E-04	1,68E-03	0	1,07E-05	1,66E-06	7,76E-06	-1,76E-03
Climate change	kg CO2 eq	7,40E+00	4,26E-01	5,95E+00	0	2,16E-02	2,88E-01	1,07E-02	-2,49E+00
GWP-GHG	kg CO2 eq	7,73E+00	4,25E-01	5,65E+00	0	2,16E-02	2,88E-01	1,07E-02	-2,48E+00
Ozone depletion	kg CFC11 eq	2,35E-07	9,25E-09	1,70E-08	0	4,71E-10	3,24E-10	2,52E-10	-4,35E-08
Acidification	mol H+ eq	7,39E-02	9,29E-04	2,43E-02	0	4,73E-05	6,43E-05	7,59E-05	-1,44E-02
Eutrophication, freshwater*	kg P eq	4,98E-03	3,02E-05	1,06E-03	0	1,54E-06	6,94E-07	2,79E-06	-1,54E-03
Eutrophication, marine	kg N eq	1,04E-02	2,34E-04	4,49E-03	0	1,19E-05	3,72E-05	2,84E-05	-2,66E-03
Eutrophication, terrestrial	mol N eq	2,28E-01	2,38E-03	4,90E-02	0	1,21E-04	3,18E-04	3,04E-04	-2,75E-02
Photochemical ozone formation	kg NMVOC eq	3,75E-02	1,44E-03	1,43E-02	0	7,34E-05	7,92E-05	1,03E-04	-1,19E-02
Resource use, minerals and metals*	kg Sb eq	6,55E-04	1,39E-06	5,98E-06	0	7,07E-08	1,33E-08	2,16E-08	-6,64E-05
Resource use, fossils*	MJ	9,95E+01	6,04E+00	3,27E+01	0	3,07E-01	4,43E-02	2,31E-01	-2,71E+01
Water use*	m^3 depriv.	1,52E+00	2,49E-02	1,09E+00	0	1,27E-03	1,64E-03	9,78E-03	9,39E-02

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

Table 66: Additional environmental impact indicators - FDMS, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	8,00E-07	3,17E-08	3,57E-07	0	1,61E-09	3,04E-10	1,63E-09	-2,09E-07
Human toxicity, non-cancer*	CTUh	2,20E-07	4,28E-09	3,31E-08	0	2,18E-10	7,39E-10	6,68E-11	-1,01E-07
Human toxicity, cancer*	CTUh	2,71E-08	1,94E-10	1,33E-09	0	9,85E-12	1,66E-11	5,95E-12	-1,91E-08
Land use*	Pt	7,18E+01	3,65E+00	2,67E+01	0	1,86E-01	1,73E-02	5,27E-01	-9,30E+00
Ionising radiation**	kBq U-235 eq	7,44E-01	8,17E-03	2,43E-01	0	4,16E-04	1,55E-04	3,05E-04	-1,18E-01
Ecotoxicity, freshwater	CTUe	1,16E+02	2,98E+00	1,03E+01	0	1,52E-01	6,45E-01	1,01E-01	-1,84E+01

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Table 67: Parameters describing resource use - FDMS, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,27E+01	9,49E-02	7,12E+00	0	4,83E-03	2,93E-03	3,97E-03	-2,43E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,27E+01	9,49E-02	7,12E+00	0	4,83E-03	2,93E-03	3,97E-03	-2,43E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	9,60E+01	6,42E+00	3,45E+01	0	3,26E-01	4,80E-02	2,46E-01	-2,87E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	9,60E+01	6,42E+00	3,45E+01	0	3,26E-01	4,80E-02	2,46E-01	-2,87E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,82E-02	8,08E-04	2,06E-03	0	3,59E-05	3,11E-05	5,79E-05	-7,27E-03

Table 68: Other environmental information describing waste categories - FDMS, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	6,23E-03	1,51E-04	6,11E-03	0	7,69E-06	3,27E-03	5,75E-06	-8,51E-04
Non-hazardous waste disposed	kg	2,36E+00	3,00E-01	2,70E-01	0	1,53E-02	4,15E-03	9,12E-01	-1,05E+00
Radioactive waste disposed/stored	kg	1,78E-04	1,98E-06	5,53E-05	0	1,01E-07	3,84E-08	7,34E-08	-2,91E-05

Table 69: Environmental information describing output flows - FDMS, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	4,26E-02	0	0	1,32E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	4,71E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	9,20E-01	0	0

Table 70: Core environmental impact indicators - FDMS, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,27E+01	6,08E-01	5,64E+00	1,30E+02	3,10E-02	6,01E-01	1,07E-02	-2,18E+00
Climate change - Biogenic	kg CO2 eq	-5,23E-01	5,57E-04	5,24E-01	1,23E+00	2,84E-05	5,09E-04	6,78E-05	-5,18E-03
Climate change - Land use and LU change	kg CO2 eq	1,65E-02	3,00E-04	1,68E-03	1,76E-01	1,53E-05	2,05E-05	7,76E-06	-1,58E-03
Climate change	kg CO2 eq	1,22E+01	6,09E-01	5,95E+00	1,31E+02	3,11E-02	6,01E-01	1,07E-02	-2,18E+00
GWP-GHG	kg CO2 eq	1,27E+01	6,08E-01	5,65E+00	1,30E+02	3,10E-02	6,02E-01	1,07E-02	-2,18E+00
Ozone depletion	kg CFC11 eq	2,95E-07	1,32E-08	1,70E-08	9,30E-07	6,76E-10	7,62E-10	2,52E-10	-3,85E-08
Acidification	mol H+ eq	1,46E-01	1,33E-03	2,43E-02	5,81E-01	6,79E-05	2,59E-04	7,59E-05	-9,74E-03
Eutrophication, freshwater*	kg P eq	1,04E-02	4,32E-05	1,06E-03	2,03E-01	2,21E-06	6,73E-06	2,79E-06	-1,11E-03
Eutrophication, marine	kg N eq	1,72E-02	3,35E-04	4,50E-03	1,26E-01	1,71E-05	1,06E-04	2,84E-05	-2,28E-03
Eutrophication, terrestrial	mol N eq	2,91E-01	3,41E-03	4,90E-02	9,34E-01	1,74E-04	1,13E-03	3,04E-04	-2,29E-02
Photochemical ozone formation	kg NMVOC eq	6,35E-02	2,06E-03	1,43E-02	2,74E-01	1,05E-04	2,39E-04	1,03E-04	-1,02E-02
Resource use, minerals and metals*	kg Sb eq	9,43E-04	1,99E-06	5,98E-06	8,42E-04	1,01E-07	2,23E-07	2,16E-08	-1,45E-05
Resource use, fossils*	MJ	1,55E+02	8,63E+00	3,27E+01	2,09E+03	4,41E-01	2,41E-01	2,31E-01	-2,39E+01
Water use*	m^3 depriv.	3,30E+00	3,56E-02	1,09E+00	2,22E+01	1,82E-03	1,21E-02	9,78E-03	1,27E-01

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Table 71: Additional environmental impact indicators - FDMS, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,23E-06	4,53E-08	3,57E-07	1,40E-06	2,31E-09	2,56E-09	1,63E-09	-1,79E-07
Human toxicity, non-cancer*	CTUh	1,04E-06	6,13E-09	3,31E-08	1,47E-06	3,13E-10	5,62E-09	6,68E-11	-4,62E-08
Human toxicity, cancer*	CTUh	5,15E-08	2,77E-10	1,33E-09	4,31E-08	1,41E-11	6,64E-11	5,95E-12	-1,62E-08
Land use*	Pt	1,09E+02	5,22E+00	2,67E+01	2,17E+02	2,67E-01	4,63E-01	5,27E-01	-7,54E+00
Ionising radiation**	kBq U-235 eq	1,06E+00	1,17E-02	2,43E-01	5,42E+01	5,97E-04	9,66E-04	3,05E-04	-1,03E-01
Ecotoxicity, freshwater	CTUe	1,65E+02	4,27E+00	1,03E+01	4,59E+02	2,18E-01	3,72E+00	1,01E-01	-1,20E+01

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Table 72: Parameters describing resource use - FDMS, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,14E+01	1,36E-01	7,12E+00	1,43E+02	6,93E-03	4,10E-02	3,97E-03	-1,99E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,14E+01	1,36E-01	7,12E+00	1,43E+02	6,93E-03	4,10E-02	3,97E-03	-1,99E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,55E+02	9,18E+00	3,45E+01	2,22E+03	4,69E-01	2,58E-01	2,46E-01	-2,53E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,55E+02	9,18E+00	3,45E+01	2,22E+03	4,69E-01	2,58E-01	2,46E-01	-2,53E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,03E-02	1,16E-03	2,95E-03	3,04E-02	5,14E-05	4,45E-05	8,29E-05	-1,04E-02

Table 73: Other environmental information describing waste categories - FDMS, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,97E-02	2,16E-04	6,11E-03	1,58E-01	1,10E-05	9,06E-03	5,75E-06	-6,67E-04
Non-hazardous waste disposed	kg	4,10E+00	4,29E-01	2,73E-01	1,28E+01	2,19E-02	2,28E-02	9,12E-01	-9,30E-01
Radioactive waste disposed/stored	kg	2,57E-04	2,84E-06	5,53E-05	1,30E-02	1,45E-07	2,39E-07	7,34E-08	-2,52E-05

Table 74: Environmental information describing output flows - FDMS, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	6,09E-02	0	0	2,33E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	4,72E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	9,23E-01	0	0

Table 75: Core environmental impact indicators - FDMS, DN 315, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,18E+01	1,22E+00	1,43E+01	0	6,40E-02	3,78E-01	4,66E-02	-5,86E+00
Climate change - Biogenic	kg CO2 eq	-1,36E+00	1,12E-03	1,37E+00	0	5,86E-05	4,42E-05	2,97E-04	-1,35E-02
Climate change - Land use and LU change	kg CO2 eq	1,94E-02	6,04E-04	4,26E-03	0	3,16E-05	2,11E-06	3,39E-05	-4,02E-03
Climate change	kg CO2 eq	2,04E+01	1,23E+00	1,51E+01	0	6,41E-02	3,78E-01	4,70E-02	-5,88E+00
GWP-GHG	kg CO2 eq	2,15E+01	1,22E+00	1,43E+01	0	6,40E-02	3,78E-01	4,68E-02	-5,87E+00
Ozone depletion	kg CFC11 eq	7,12E-07	2,66E-08	4,32E-08	0	1,39E-09	4,24E-10	1,10E-09	-1,03E-07
Acidification	mol H+ eq	1,76E-01	2,67E-03	6,17E-02	0	1,40E-04	8,39E-05	3,32E-04	-2,96E-02
Eutrophication, freshwater*	kg P eq	1,06E-02	8,69E-05	2,69E-03	0	4,55E-06	8,89E-07	1,22E-05	-3,21E-03
Eutrophication, marine	kg N eq	2,68E-02	6,75E-04	1,14E-02	0	3,53E-05	4,87E-05	1,24E-04	-6,15E-03
Eutrophication, terrestrial	mol N eq	5,74E-01	6,85E-03	1,24E-01	0	3,58E-04	4,16E-04	1,33E-03	-6,28E-02
Photochemical ozone formation	kg NMVOC eq	9,31E-02	4,15E-03	3,64E-02	0	2,17E-04	1,04E-04	4,49E-04	-2,79E-02
Resource use, minerals and metals*	kg Sb eq	8,46E-04	4,00E-06	1,52E-05	0	2,09E-07	1,66E-08	9,46E-08	-9,04E-05
Resource use, fossils*	MJ	2,72E+02	1,74E+01	8,30E+01	0	9,09E-01	5,75E-02	1,01E+00	-6,31E+01
Water use*	m³ depriv.	4,12E+00	7,16E-02	2,78E+00	0	3,75E-03	2,12E-03	4,28E-02	3,33E-01

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

Table 76: Additional environmental impact indicators - FDMS, DN 315 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,95E-06	9,12E-08	9,04E-07	0	4,77E-09	3,91E-10	7,15E-09	-5,00E-07
Human toxicity, non-cancer*	CTUh	4,26E-07	1,23E-08	8,39E-08	0	6,45E-10	9,53E-10	2,92E-10	-1,77E-07
Human toxicity, cancer*	CTUh	6,51E-08	5,58E-10	3,37E-09	0	2,92E-11	2,17E-11	2,60E-11	-4,61E-08
Land use*	Pt	2,12E+02	1,05E+01	6,78E+01	0	5,49E-01	2,10E-02	2,31E+00	-2,10E+01
Ionising radiation**	kBq U-235 eq	1,96E+00	2,35E-02	6,17E-01	0	1,23E-03	2,01E-04	1,33E-03	-2,38E-01
Ecotoxicity, freshwater	CTUe	2,69E+02	8,59E+00	2,61E+01	0	4,49E-01	8,36E-01	4,43E-01	-3,74E+01

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 77: Parameters describing resource use - FDMS, DN 315 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,38E+01	2,73E-01	1,81E+01	0	1,43E-02	3,70E-03	1,73E-02	-5,66E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,38E+01	2,73E-01	1,81E+01	0	1,43E-02	3,70E-03	1,73E-02	-5,66E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,45E+02	1,85E+01	8,75E+01	0	9,66E-01	6,23E-02	1,07E+00	-6,68E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,45E+02	1,85E+01	8,75E+01	0	9,66E-01	6,23E-02	1,07E+00	-6,68E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	8,80E-02	2,52E-03	6,45E-03	0	1,12E-04	9,71E-05	1,81E-04	-2,27E-02

Table 78: Other environmental information describing waste categories - FDMS, DN 315 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,48E-02	4,35E-04	1,55E-02	0	2,28E-05	4,28E-03	2,51E-05	-1,82E-03
Non-hazardous waste disposed	kg	6,27E+00	8,63E-01	6,89E-01	0	4,51E-02	5,39E-03	3,99E+00	-2,54E+00
Radioactive waste disposed/stored	kg	4,60E-04	5,71E-06	1,40E-04	0	2,99E-07	4,98E-08	3,21E-07	-5,89E-05

Table 79: Environmental information describing output flows - FDMS, DN 315 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,33E-01	0	0	3,19E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	6,18E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,21E+00	0	0

Table 80: Core environmental impact indicators - FDMS, DN 315 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,48E+01	1,44E+00	1,43E+01	1,30E+02	7,35E-02	6,91E-01	4,66E-02	-4,91E+00
Climate change - Biogenic	kg CO2 eq	-1,45E+00	1,32E-03	1,46E+00	1,23E+00	6,74E-05	4,42E-05	2,97E-04	-1,12E-02
Climate change - Land use and LU change	kg CO2 eq	2,66E-02	7,12E-04	4,26E-03	1,76E-01	3,63E-05	2,09E-05	3,39E-05	-3,41E-03
Climate change	kg CO2 eq	2,34E+01	1,45E+00	1,51E+01	1,31E+02	7,36E-02	6,91E-01	4,70E-02	-4,92E+00
GWP-GHG	kg CO2 eq	2,45E+01	1,44E+00	1,43E+01	1,30E+02	7,36E-02	6,92E-01	4,68E-02	-4,91E+00
Ozone depletion	kg CFC11 eq	7,31E-07	3,14E-08	4,32E-08	9,30E-07	1,60E-09	8,63E-10	1,10E-09	-8,64E-08
Acidification	mol H+ eq	2,33E-01	3,15E-03	6,17E-02	5,81E-01	1,61E-04	2,78E-04	3,32E-04	-2,20E-02
Eutrophication, freshwater*	kg P eq	1,53E-02	1,03E-04	2,69E-03	2,03E-01	5,23E-06	6,92E-06	1,22E-05	-2,46E-03
Eutrophication, marine	kg N eq	3,18E-02	7,96E-04	1,14E-02	1,26E-01	4,06E-05	1,18E-04	1,24E-04	-5,09E-03
Eutrophication, terrestrial	mol N eq	5,81E-01	8,09E-03	1,24E-01	9,34E-01	4,12E-04	1,23E-03	1,33E-03	-5,14E-02
Photochemical ozone formation	kg NMVOC eq	1,12E-01	4,90E-03	3,64E-02	2,74E-01	2,50E-04	2,64E-04	4,49E-04	-2,31E-02
Resource use, minerals and metals*	kg Sb eq	1,10E-03	4,72E-06	1,52E-05	8,42E-04	2,40E-07	2,27E-07	9,46E-08	-3,39E-05
Resource use, fossils*	MJ	3,02E+02	2,05E+01	8,30E+01	2,09E+03	1,04E+00	2,54E-01	1,01E+00	-5,30E+01
Water use*	m^3 depriv.	5,73E+00	8,45E-02	2,78E+00	2,22E+01	4,31E-03	1,26E-02	4,28E-02	3,18E-01

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

Table 81: Additional environmental impact indicators - FDMS, DN 315 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	2,21E-06	1,08E-07	9,04E-07	1,40E-06	5,48E-09	2,64E-09	7,15E-09	-4,13E-07
Human toxicity, non-cancer*	CTUh	1,21E-06	1,45E-08	8,39E-08	1,47E-06	7,41E-10	5,84E-09	2,92E-10	-1,07E-07
Human toxicity, cancer*	CTUh	8,23E-08	6,58E-10	3,37E-09	4,31E-08	3,35E-11	7,15E-11	2,60E-11	-3,79E-08
Land use*	Pt	2,40E+02	1,24E+01	6,78E+01	2,17E+02	6,31E-01	4,66E-01	2,31E+00	-1,69E+01
Ionising radiation**	kBq U-235 eq	2,16E+00	2,77E-02	6,17E-01	5,42E+01	1,41E-03	1,01E-03	1,33E-03	-2,02E-01
Ecotoxicity, freshwater	CTUe	3,04E+02	1,01E+01	2,61E+01	4,59E+02	5,16E-01	3,91E+00	4,43E-01	-2,72E+01

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Table 82: Parameters describing resource use - FDMS, DN 315 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,02E+01	3,22E-01	1,81E+01	1,43E+02	1,64E-02	4,17E-02	1,73E-02	-4,59E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,02E+01	3,22E-01	1,81E+01	1,43E+02	1,64E-02	4,17E-02	1,73E-02	-4,59E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,77E+02	2,18E+01	8,75E+01	2,22E+03	1,11E+00	2,73E-01	1,07E+00	-5,62E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,77E+02	2,18E+01	8,75E+01	2,22E+03	1,11E+00	2,73E-01	1,07E+00	-5,62E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	9,56E-02	2,74E-03	7,01E-03	7,20E-02	1,22E-04	1,06E-04	1,97E-04	-2,47E-02

Table 83: Other environmental information describing waste categories - FDMS, DN 315 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	2,66E-02	5,13E-04	1,55E-02	1,58E-01	2,62E-05	1,01E-02	2,51E-05	-1,45E-03
Non-hazardous waste disposed	kg	7,53E+00	1,02E+00	6,91E-01	1,28E+01	5,19E-02	2,40E-02	3,99E+00	-2,13E+00
Radioactive waste disposed/ stored	kg	5,08E-04	6,74E-06	1,40E-04	1,30E-02	3,43E-07	2,50E-07	3,21E-07	-4,98E-05

Table 84: Environmental information describing output flows - FDMS, DN 315 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,45E-01	0	0	3,83E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	6,20E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,21E+00	0	0

Table 85: Core environmental impact indicators - FDMS, DN 630, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	4,72E+01	3,23E+00	2,70E+01	0	1,59E-01	7,88E-01	1,44E-01	-9,81E+00
Climate change - Biogenic	kg CO2 eq	-3,63E+00	2,96E-03	3,63E+00	0	1,45E-04	1,00E-04	9,17E-04	-2,28E-02
Climate change - Land use and LU change	kg CO2 eq	4,03E-02	1,60E-03	8,05E-03	0	7,84E-05	4,16E-06	1,05E-04	-6,69E-03
Climate change	kg CO2 eq	4,36E+01	3,24E+00	2,85E+01	0	1,59E-01	7,88E-01	1,45E-01	-9,84E+00
GWP-GHG	kg CO2 eq	4,62E+01	3,23E+00	2,70E+01	0	1,59E-01	7,88E-01	1,45E-01	-9,82E+00
Ozone depletion	kg CFC11 eq	1,71E-06	7,04E-08	8,15E-08	0	3,46E-09	8,83E-10	3,41E-09	-1,73E-07
Acidification	mol H+ eq	3,36E-01	7,07E-03	1,16E-01	0	3,47E-04	1,73E-04	1,03E-03	-4,72E-02
Eutrophication, freshwater*	kg P eq	1,99E-02	2,30E-04	5,08E-03	0	1,13E-05	1,78E-06	3,78E-05	-5,23E-03
Eutrophication, marine	kg N eq	5,72E-02	1,78E-03	2,15E-02	0	8,75E-05	1,01E-04	3,84E-04	-1,02E-02
Eutrophication, terrestrial	mol N eq	1,08E+00	1,81E-02	2,34E-01	0	8,89E-04	8,60E-04	4,10E-03	-1,03E-01
Photochemical ozone formation	kg NMVOC eq	1,93E-01	1,10E-02	6,86E-02	0	5,39E-04	2,15E-04	1,39E-03	-4,62E-02
Resource use, minerals and metals*	kg Sb eq	1,09E-03	1,06E-05	2,86E-05	0	5,19E-07	3,19E-08	2,92E-07	-1,17E-04
Resource use, fossils*	MJ	5,82E+02	4,59E+01	1,57E+02	0	2,25E+00	1,18E-01	3,12E+00	-1,06E+02
Water use*	m³ depriv.	9,92E+00	1,89E-01	5,24E+00	0	9,29E-03	4,29E-03	1,32E-01	5,84E-01

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

Table 86: Additional environmental impact indicators - FDMS, DN 630 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	3,59E-06	2,41E-07	1,71E-06	0	1,18E-08	7,88E-10	2,21E-08	-8,28E-07
Human toxicity, non-cancer*	CTUh	7,46E-07	3,26E-08	1,58E-07	0	1,60E-09	1,93E-09	9,02E-10	-2,62E-07
Human toxicity, cancer*	CTUh	1,12E-07	1,47E-09	6,37E-09	0	7,23E-11	4,47E-11	8,05E-11	-7,64E-08
Land use*	Pt	5,18E+02	2,78E+01	1,28E+02	0	1,36E+00	3,78E-02	7,13E+00	-3,42E+01
Ionising radiation**	kBq U-235 eq	4,29E+00	6,22E-02	1,16E+00	0	3,05E-03	4,09E-04	4,12E-03	-4,14E-01
Ecotoxicity, freshwater	CTUe	5,73E+02	2,27E+01	4,93E+01	0	1,11E+00	1,71E+00	1,37E+00	-5,90E+01

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Table 87: Parameters describing resource use - FDMS, DN 630 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	7,35E+01	7,22E-01	3,41E+01	0	3,54E-02	7,22E-03	5,36E-02	-9,36E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	7,35E+01	7,22E-01	3,41E+01	0	3,54E-02	7,22E-03	5,36E-02	-9,36E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	4,79E+02	4,88E+01	1,65E+02	0	2,40E+00	1,28E-01	3,32E+00	-1,12E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	4,79E+02	4,88E+01	1,65E+02	0	2,40E+00	1,28E-01	3,32E+00	-1,12E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	5,76E+00	6,16E-03	1,57E-02	0	2,74E-04	2,37E-04	4,42E-04	-5,54E-02

Table 88: Other environmental information describing waste categories - FDMS, DN 630 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	2,86E-02	1,15E-03	2,93E-02	0	5,64E-05	8,89E-03	7,77E-05	-3,01E-03
Non-hazardous waste disposed	kg	1,30E+01	2,28E+00	1,31E+00	0	1,12E-01	1,10E-02	1,23E+01	-4,22E+00
Radioactive waste disposed/stored	kg	9,81E-04	1,51E-05	2,65E-04	0	7,41E-07	1,01E-07	9,92E-07	-1,02E-04

Table 89: Environmental information describing output flows - FDMS, DN 630 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	3,25E-01	0	0	5,30E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	1,30E+00	0	0
Exported energy, heat	MJ	0	0	0	0	0	2,54E+00	0	0

Table 90: Core environmental impact indicators - FDMS, DN 630 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	5,30E+01	3,42E+00	2,70E+01	2,47E+02	1,74E-01	1,18E+00	3,41E-01	-8,91E+00
Climate change - Biogenic	kg CO2 eq	-3,76E+00	3.13E-03	3,76E+00	2,35E+00	1,59E-04	5,77E-04	2,17E-03	-2,05E-02
Climate change - Land use and LU change	kg CO2 eq	5,09E-02	1,69E-03	8,05E-03	3,35E-01	8,59E-05	2,78E-05	2,48E-04	-6,13E-03
Climate change	kg CO2 eq	4,93E+01	3,42E+00	2,85E+01	2,50E+02	1,74E-01	1,18E+00	3,44E-01	-8,94E+00
GWP-GHG	kg CO2 eq	5,20E+01	3,42E+00	2,70E+01	2,48E+02	1,74E-01	1,18E+00	3,42E-01	-8,92E+00
Ozone depletion	kg CFC11 eq	1,77E-06	7.44E-08	8,15E-08	1,77E-06	3,79E-09	1,43E-09	8,06E-09	-1,57E-07
Acidification	mol H+ eq	4,23E-01	7,47E-03	1,16E-01	1,11E+00	3,80E-04	4,17E-04	2,43E-03	-3,98E-02
Eutrophication, freshwater*	kg P eq	2,71E-02	2,43E-04	5,08E-03	3,87E-01	1,24E-05	9,35E-06	8,94E-05	-4,51E-03
Eutrophication, marine	kg N eq	6,53E-02	1,89E-03	2,15E-02	2,41E-01	9,60E-05	1,88E-04	9,08E-04	-9,19E-03
Eutrophication, terrestrial	mol N eq	1,13E+00	1,92E-02	2,34E-01	1,78E+00	9,75E-04	1,88E-03	9,72E-03	-9,27E-02
Photochemical ozone formation	kg NMVOC eq	2,25E-01	1,16E-02	6,86E-02	5,23E-01	5,91E-04	4,16E-04	3,29E-03	-4,16E-02
Resource use, minerals and metals*	kg Sb eq	1,61E-03	1,12E-05	2,86E-05	1,60E-03	5,69E-07	2,95E-07	6,92E-07	-6,13E-05
Resource use, fossils*	MJ	6,47E+02	4,85E+01	1,57E+02	3,99E+03	2,47E+00	3,64E-01	7,39E+00	-9,64E+01
Water use*	m^3 depriv.	1,22E+01	2,00E-01	5,24E+00	4,24E+01	1,02E-02	1,74E-02	3,13E-01	5,72E-01

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

Table 91: Additional environmental impact indicators - FDMS, DN 630 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	4,01E-06	2.55E-07	1,71E-06	2.67E-06	1,30E-08	3,61E-09	5,23E-08	-7,46E-07
Human toxicity, non-cancer*	CTUh	1,83E-06	3,45E-08	1,58E-07	2,80E-06	1,75E-09	8,05E-09	2,14E-09	-1,94E-07
Human toxicity, cancer*	CTUh	1,38E-07	1,56E-09	6,37E-09	8,21E-08	7,93E-11	1,07E-10	1,91E-10	-6,85E-08
Land use*	Pt	5,62E+02	2,94E+01	1,28E+02	4,14E+02	1,49E+00	5,96E-01	1,69E+01	-3,04E+01
Ionising radiation**	kBq U-235 eq	4,70E+00	6,57E-02	1,16E+00	1,03E+02	3,35E-03	1,43E-03	9,75E-03	-3,79E-01
Ecotoxicity, freshwater	CTUe	6,40E+02	2,40E+01	4,94E+01	8,75E+02	1,22E+00	5,56E+00	3,24E+00	-4,92E+01

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 92: Parameters describing resource use - FDMS, DN 630 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	8,33E+01	7,63E-01	3,41E+01	2,72E+02	3,89E-02	5,49E-02	1,27E-01	-8,33E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	8,33E+01	7,63E-01	3,41E+01	2,72E+02	3,89E-02	5,49E-02	1,27E-01	-8,33E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,49E+02	5,16E+01	1,65E+02	4,23E+03	2,63E+00	3,92E-01	7,86E+00	-1,02E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,49E+02	5,16E+01	1,65E+02	4,23E+03	2,63E+00	3,92E-01	7,86E+00	-1,02E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,26E-01	6,49E-03	1,66E-02	1,70E-01	2,88E-04	2,50E-04	4,65E-04	-5,84E-02

Table 93: Other environmental information describing waste categories - FDMS, DN 630 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	4,50E-02	1,22E-03	2,93E-02	3,01E-01	6,19E-05	1,62E-02	1,84E-04	-2,66E-03
Non-hazardous waste disposed	kg	1,48E+01	2,41E+00	1,31E+00	2,44E+01	1,23E-01	3,44E-02	2,92E+01	-3,84E+00
Radioactive waste disposed/ stored	kg	1,08E-03	1,60E-05	2,65E-04	2,48E-02	8,13E-07	3,53E-07	2,35E-06	-9,34E-05

Table 94: Environmental information describing output flows - FDMS, DN 630 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	3,42E-01	0	0	6,26E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	1,30E+00	0	0
Exported energy, heat	MJ	0	0	0	0	0	2,54E+00	0	0

Table 95: Core environmental impact indicators - CFDM, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,31E+00	6,10E-02	3,15E+00	0	3,34E-03	3,32E-02	1,08E-03	-4,86E-01
Climate change - Biogenic	kg CO2 eq	-4,67E-02	5,59E-05	1,75E-01	0	3,06E-06	4,53E-06	6,86E-06	-1,24E-03
Climate change - Land use and LU change	kg CO2 eq	1,22E-03	3,01E-05	9,39E-04	0	1,65E-06	1,66E-07	7,85E-07	-3,67E-04
Climate change	kg CO2 eq	1,27E+00	6,11E-02	3,32E+00	0	3,35E-03	3,32E-02	1,09E-03	-4,88E-01
GWP-GHG	kg CO2 eq	1,32E+00	6,10E-02	3,15E+00	0	3,35E-03	3,32E-02	1,08E-03	-4,87E-01
Ozone depletion	kg CFC11 eq	3,71E-08	1,33E-09	9,51E-09	0	7,28E-11	3,71E-11	2,55E-11	-8,41E-09
Acidification	mol H+ eq	1,22E-02	1,33E-04	1,36E-02	0	7,31E-06	7,21E-06	7,67E-06	-3,87E-03
Eutrophication, freshwater*	kg P eq	7,59E-04	4,33E-06	5,93E-04	0	2,38E-07	7,19E-08	2,82E-07	-3,76E-04
Eutrophication, marine	kg N eq	1,76E-03	3,36E-05	2,51E-03	0	1,84E-06	4,24E-06	2,87E-06	-5,67E-04
Eutrophication, terrestrial	mol N eq	3,40E-02	3,42E-04	2,74E-02	0	1,87E-05	3,59E-05	3,07E-05	-6,07E-03
Photochemical ozone formation	kg NMVOC eq	6,09E-03	2,07E-04	8,01E-03	0	1,13E-05	9,01E-06	1,04E-05	-2,52E-03
Resource use, minerals and metals*	kg Sb eq	5,16E-05	1,99E-07	3,34E-06	0	1,09E-08	1,23E-09	2,19E-09	-2,81E-05
Resource use, fossils*	MJ	1,79E+01	8,66E-01	1,83E+01	0	4,75E-02	4,87E-03	2,33E-02	-5,28E+00
Water use*	m^3 depriv.	3,31E-01	3,57E-03	6,12E-01	0	1,96E-04	1,76E-04	9,89E-04	1,73E-03

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

Table 96: Additional environmental impact indicators - CFDM, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,37E-07	4,54E-09	1,99E-07	0	2,49E-10	3,21E-11	1,65E-10	-4,30E-08
Human toxicity, non-cancer*	CTUh	5,21E-08	6,15E-10	1,85E-08	0	3,37E-11	7,89E-11	6,75E-12	-3,43E-08
Human toxicity, cancer*	CTUh	7,30E-09	2,78E-11	7,43E-10	0	1,52E-12	1,86E-12	6,02E-13	-3,88E-09
Land use*	Pt	1,05E+01	5,24E-01	1,49E+01	0	2,87E-02	1,36E-03	5,33E-02	-2,15E+00
Ionising radiation**	kBq U-235 eq	1,20E-01	1,17E-03	1,36E-01	0	6,43E-05	1,69E-05	3,08E-05	-2,20E-02
Ecotoxicity, freshwater	CTUe	2,06E+01	4,28E-01	5,74E+00	0	2,35E-02	7,06E-02	1,02E-02	-5,15E+00

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Table 97: Parameters describing resource use - CFDM, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,48E+00	1,36E-02	3,97E+00	0	7,47E-04	2,85E-04	4,01E-04	-5,18E-01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,48E+00	1,36E-02	3,97E+00	0	7,47E-04	2,85E-04	4,01E-04	-5,18E-01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,85E+01	9,21E-01	1,93E+01	0	5,05E-02	5,28E-03	2,48E-02	-5,59E+00
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,85E+01	9,21E-01	1,93E+01	0	5,05E-02	5,28E-03	2,48E-02	-5,59E+00
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,35E-03	1,25E-04	3,19E-04	0	5,54E-06	4,80E-06	8,94E-06	-1,12E-03

Table 98: Other environmental information describing waste categories - CFDM, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	9,77E-04	2,17E-05	3,41E-03	0	1,19E-06	3,73E-04	5,81E-07	-1,94E-04
Non-hazardous waste disposed	kg	5,99E-01	4,30E-02	1,49E-01	0	2,36E-03	4,56E-04	9,22E-02	-2,09E-01
Radioactive waste disposed/ stored	kg	2,94E-05	2,85E-07	3,09E-05	0	1,56E-08	4,18E-09	7,42E-09	-5,47E-06

Table 99: Environmental information describing output flows - CFDM, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	6,57E-03	0	0	2,55E-01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	5,49E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,07E-01	0	0

Table 100: Core environmental impact indicators - CFDM-V, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,60E+00	1,30E-01	3,15E+00	0	7,15E-03	3,32E-02	2,41E-03	-1,22E+00
Climate change - Biogenic	kg CO2 eq	-1,22E-01	1,19E-04	1,75E-01	0	6,55E-06	4,53E-06	1,54E-05	-2,80E-03
Climate change - Land use and LU change	kg CO2 eq	2,35E-03	6,42E-05	9,39E-04	0	3,53E-06	1,66E-07	1,76E-06	-8,53E-04
Climate change	kg CO2 eq	2,48E+00	1,30E-01	3,32E+00	0	7,16E-03	3,32E-02	2,43E-03	-1,22E+00
GWP-GHG	kg CO2 eq	2,61E+00	1,30E-01	3,15E+00	0	7,15E-03	3,32E-02	2,42E-03	-1,22E+00
Ozone depletion	kg CFC11 eq	6,38E-08	2,83E-09	9,51E-09	0	1,56E-10	3,71E-11	5,70E-11	-2,12E-08
Acidification	mol H+ eq	2,11E-02	2,84E-04	1,36E-02	0	1,56E-05	7,21E-06	1,72E-05	-7,18E-03
Eutrophication, freshwater*	kg P eq	1,46E-03	9,24E-06	5,93E-04	0	5,08E-07	7,19E-08	6,32E-07	-7,32E-04
Eutrophication, marine	kg N eq	3,33E-03	7,17E-05	2,51E-03	0	3,94E-06	4,24E-06	6,43E-06	-1,32E-03
Eutrophication, terrestrial	mol N eq	6,31E-02	7,29E-04	2,74E-02	0	4,01E-05	3,59E-05	6,87E-05	-1,38E-02
Photochemical ozone formation	kg NMVOC eq	1,21E-02	4,41E-04	8,01E-03	0	2,43E-05	9,01E-06	2,32E-05	-6,00E-03
Resource use, minerals and metals*	kg Sb eq	6,87E-05	4,25E-07	3,34E-06	0	2,34E-08	1,23E-09	4,90E-09	-3,34E-05
Resource use, fossils*	MJ	3,36E+01	1,85E+00	1,83E+01	0	1,02E-01	4,87E-03	5,23E-02	-1,30E+01
Water use*	m^3 depriv.	4,37E-01	7,62E-03	6,12E-01	0	4,19E-04	1,76E-04	2,21E-03	5,51E-02

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

Table 101: Additional environmental impact indicators - CFDM-V, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	2,68E-07	9,69E-09	1,99E-07	0	5,33E-10	3,21E-11	3,70E-10	-1,07E-07
Human toxicity, non-cancer*	CTUh	7,76E-08	1,31E-09	1,85E-08	0	7,21E-11	7,89E-11	1,51E-11	-5,08E-08
Human toxicity, cancer*	CTUh	1,45E-08	5,93E-11	7,43E-10	0	3,26E-12	1,86E-12	1,35E-12	-9,78E-09
Land use*	Pt	2,24E+01	1,12E+00	1,49E+01	0	6,14E-02	1,36E-03	1,19E-01	-4,70E+00
Ionising radiation**	kBq U-235 eq	2,24E-01	2,50E-03	1,36E-01	0	1,37E-04	1,69E-05	6,89E-05	-4,57E-02
Ecotoxicity, freshwater	CTUe	3,02E+01	9,13E-01	5,75E+00	0	5,02E-02	7,06E-02	2,29E-02	-9,28E+00

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Table 102: Parameters describing resource use - CFDM-V, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,99E+00	2,90E-02	3,97E+00	0	1,60E-03	2,85E-04	8,98E-04	-1,22E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,99E+00	2,90E-02	3,97E+00	0	1,60E-03	2,85E-04	8,98E-04	-1,22E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,52E+01	1,96E+00	1,93E+01	0	1,08E-01	5,28E-03	5,56E-02	-1,38E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,52E+01	1,96E+00	1,93E+01	0	1,08E-01	5,28E-03	5,56E-02	-1,38E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	9,28E-03	2,66E-04	6,80E-04	0	1,18E-05	1,02E-05	1,91E-05	-2,40E-03

Table 103: Other environmental information describing waste categories - CFDM-V, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,82E-03	4,63E-05	3,41E-03	0	2,54E-06	3,73E-04	1,30E-06	-4,00E-04
Non-hazardous waste disposed	kg	1,12E+00	9,18E-02	1,50E-01	0	5,05E-03	4,56E-04	2,07E-01	-5,34E-01
Radioactive waste disposed/ stored	kg	5,48E-05	6,07E-07	3,09E-05	0	3,34E-08	4,18E-09	1,66E-08	-1,14E-05

Table 104: Environmental information describing output flows - CFDM-V, DN 100 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,40E-02	0	0	6,66E-01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	5,49E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,07E-01	0	0

Table 105: Core environmental impact indicators - CFDM, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,93E+00	9,98E-02	4,64E+00	0	5,47E-03	4,74E-02	2,41E-03	-6,90E-01
Climate change - Biogenic	kg CO2 eq	-9,35E-02	9,14E-05	2,58E-01	0	5,01E-06	6,47E-06	1,54E-05	-1,70E-03
Climate change - Land use and LU change	kg CO2 eq	1,76E-03	4,93E-05	1,38E-03	0	2,70E-06	2,37E-07	1,76E-06	-5,04E-04
Climate change	kg CO2 eq	1,84E+00	9,99E-02	4,90E+00	0	5,48E-03	4,74E-02	2,43E-03	-6,93E-01
GWP-GHG	kg CO2 eq	1,92E+00	9,98E-02	4,64E+00	0	5,47E-03	4,74E-02	2,42E-03	-6,91E-01
Ozone depletion	kg CFC11 eq	5,59E-08	2,17E-09	1,40E-08	0	1,19E-10	5,30E-11	5,70E-11	-1,20E-08
Acidification	mol H+ eq	1,74E-02	2,18E-04	2,00E-02	0	1,20E-05	1,03E-05	1,72E-05	-4,78E-03
Eutrophication, freshwater*	kg P eq	1,03E-03	7,09E-06	8,74E-04	0	3,89E-07	1,03E-07	6,32E-07	-4,79E-04
Eutrophication, marine	kg N eq	2,52E-03	5,50E-05	3,70E-03	0	3,02E-06	6,06E-06	6,43E-06	-7,77E-04
Eutrophication, terrestrial	mol N eq	5,19E-02	5,59E-04	4,03E-02	0	3,06E-05	5,14E-05	6,87E-05	-8,18E-03
Photochemical ozone formation	kg NMVOC eq	8,71E-03	3,39E-04	1,18E-02	0	1,86E-05	1,29E-05	2,32E-05	-3,47E-03
Resource use, minerals and metals*	kg Sb eq	6,18E-05	3,26E-07	4,92E-06	0	1,79E-08	1,76E-09	4,90E-09	-2,95E-05
Resource use, fossils*	MJ	2,56E+01	1,42E+00	2,69E+01	0	7,77E-02	6,96E-03	5,23E-02	-7,48E+00
Water use*	m^3 depriv.	4,40E-01	5,84E-03	9,05E-01	0	3,20E-04	2,51E-04	2,21E-03	1,54E-02

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

Table 106: Additional environmental impact indicators - CFDM, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,95E-07	7,43E-09	2,93E-07	0	4,08E-10	4,59E-11	3,70E-10	-6,03E-08
Human toxicity, non-cancer*	CTUh	6,23E-08	1,01E-09	2,72E-08	0	5,51E-11	1,13E-10	1,51E-11	-3,88E-08
Human toxicity, cancer*	CTUh	9,29E-09	4,55E-11	1,09E-09	0	2,49E-12	2,66E-12	1,35E-12	-5,48E-09
Land use*	Pt	1,67E+01	8,57E-01	2,20E+01	0	4,70E-02	1,94E-03	1,19E-01	-2,85E+00
Ionising radiation**	kBq U-235 eq	1,75E-01	1,92E-03	2,00E-01	0	1,05E-04	2,41E-05	6,89E-05	-3,02E-02
Ecotoxicity, freshwater	CTUe	2,76E+01	7,01E-01	8,46E+00	0	3,84E-02	1,01E-01	2,29E-02	-6,28E+00

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 107: Parameters describing resource use - CFDM, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,46E+00	2,23E-02	5,85E+00	0	1,22E-03	4,07E-04	8,98E-04	-7,11E-01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,46E+00	2,23E-02	5,85E+00	0	1,22E-03	4,07E-04	8,98E-04	-7,11E-01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	7,64E-01	1,51E+00	2,84E+01	0	8,26E-02	7,55E-03	5,56E-02	-7,92E+00
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	7,64E-01	1,51E+00	2,84E+01	0	8,26E-02	7,55E-03	5,56E-02	-7,92E+00
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,22E+00	2,04E-04	5,21E-04	0	9,06E-06	7,85E-06	1,46E-05	-1,84E-03

Table 108: Other environmental information describing waste categories - CFDM, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,42E-03	3,55E-05	5,03E-03	0	1,95E-06	5,33E-04	1,30E-06	-2,54E-04
Non-hazardous waste disposed	kg	7,63E-01	7,04E-02	2,19E-01	0	3.86E-03	6,52E-04	2,07E-01	-2,97E-01
Radioactive waste disposed/ stored	kg	4,22E-05	4,66E-07	4,55E-05	0	2,55E-08	5,97E-09	1,66E-08	-7,51E-06

Table 109: Environmental information describing output flows - CFDM, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,08E-02	0	0	3,66E-01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	7,84E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,53E-01	0	0

Table 110: Core environmental impact indicators - CFDM-V, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	4,48E+00	2,33E-01	4,64E+00	0	1,27E-02	4,74E-02	2,41E-03	-4,87E+00
Climate change - Biogenic	kg CO2 eq	-1,89E-01	2,13E-04	2,58E-01	0	1,17E-05	6,47E-06	1,54E-05	-1,09E-02
Climate change - Land use and LU change	kg CO2 eq	3,99E-03	1,15E-04	1,38E-03	0	6,29E-06	2,37E-07	1,76E-06	-3,34E-03
Climate change	kg CO2 eq	4,30E+00	2,33E-01	4,90E+00	0	1,28E-02	4,74E-02	2,43E-03	-4,89E+00
GWP-GHG	kg CO2 eq	4,49E+00	2,33E-01	4,64E+00	0	1,28E-02	4,74E-02	2,42E-03	-4,88E+00
Ozone depletion	kg CFC11 eq	1,06E-07	5,07E-09	1,40E-08	0	2,78E-10	5,30E-11	5,70E-11	-8,51E-08
Acidification	mol H+ eq	3,40E-02	5,09E-04	2,00E-02	0	2,79E-05	1,03E-05	1,72E-05	-2,59E-02
Eutrophication, freshwater*	kg P eq	2,52E-03	1,65E-05	8,74E-04	0	9,06E-07	1,03E-07	6,32E-07	-2,71E-03
Eutrophication, marine	kg N eq	5,59E-03	1,28E-04	3,70E-03	0	7,03E-06	6,06E-06	6,43E-06	-5,19E-03
Eutrophication, terrestrial	mol N eq	1,04E-01	1,30E-03	4,03E-02	0	7,14E-05	5,14E-05	6,87E-05	-5,34E-02
Photochemical ozone formation	kg NMVOC eq	2,05E-02	7,90E-04	1,18E-02	0	4,33E-05	1,29E-05	2,32E-05	-2,37E-02
Resource use, minerals and metals*	kg Sb eq	9,30E-05	7,61E-07	4,92E-06	0	4,17E-08	1,76E-09	4,90E-09	-9,25E-05
Resource use, fossils*	MJ	5,69E+01	3,31E+00	2,69E+01	0	1,81E-01	6,96E-03	5,23E-02	-5,20E+01
Water use*	m^3 depriv.	6,58E-01	1,36E-02	9,05E-01	0	7,46E-04	2,51E-04	2,21E-03	2,74E-01

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

Table 111: Additional environmental impact indicators - CFDM-V, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	4,40E-07	1,73E-08	2,93E-07	0	9,50E-10	4,59E-11	3,70E-10	-4,25E-07
Human toxicity, non-cancer*	CTUh	1,12E-07	2,35E-09	2,72E-08	0	1,28E-10	1,13E-10	1,51E-11	-1,65E-07
Human toxicity, cancer*	CTUh	2,34E-08	1,06E-10	1,09E-09	0	5,81E-12	2,66E-12	1,35E-12	-3,91E-08
Land use*	Pt	3,55E+01	2,00E+00	2,20E+01	0	1,09E-01	1,94E-03	1,19E-01	-1,80E+01
Ionising radiation**	kBq U-235 eq	4,12E-01	4,48E-03	2,00E-01	0	2,45E-04	2,41E-05	6,89E-05	-1,77E-01
Ecotoxicity, freshwater	CTUe	4,55E+01	1,63E+00	8,46E+00	0	8,95E-02	1,01E-01	2,29E-02	-3,31E+01

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Table 112: Parameters describing resource use - CFDM-V, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	7,70E+00	5,20E-02	5,85E+00	0	2,85E-03	4,07E-04	8,98E-04	-4,79E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	7,70E+00	5,20E-02	5,85E+00	0	2,85E-03	4,07E-04	8,98E-04	-4,79E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,88E+01	3,51E+00	2,84E+01	0	1,92E-01	7,55E-03	5,56E-02	-5,50E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,88E+01	3,51E+00	2,84E+01	0	1,92E-01	7,55E-03	5,56E-02	-5,50E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,66E-02	4,75E-04	1,21E-03	0	2,11E-05	1,83E-05	3,41E-05	-4,28E-03

Table 113: Other environmental information describing waste categories - CFDM-V, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	3,06E-03	8,28E-05	5,03E-03	0	4,53E-06	5,33E-04	1,30E-06	-1,51E-03
Non-hazardous waste disposed	kg	1,79E+00	1,64E-01	2,21E-01	0	9,00E-03	6,52E-04	2,07E-01	-2,14E+00
Radioactive waste disposed/ stored	kg	9,99E-05	1,09E-06	4,55E-05	0	5,95E-08	5,97E-09	1,66E-08	-4,40E-05

Table 114: Environmental information describing output flows - CFDM-V, DN 160 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	2,50E-02	0	0	1,15E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	7,84E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,53E-01	0	0

Table 115: Core environmental impact indicators - CFDM, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,65E+00	1,30E-01	5,66E+00	0	7,13E-03	5,21E-02	3,64E-03	-8,19E-01
Climate change - Biogenic	kg CO2 eq	-1,15E-01	1,19E-04	3,15E-01	0	6,53E-06	7,12E-06	2,32E-05	-1,99E-03
Climate change - Land use and LU change	kg CO2 eq	2,22E-03	6,41E-05	1,69E-03	0	3,52E-06	2,60E-07	2,65E-06	-5,90E-04
Climate change	kg CO2 eq	2,54E+00	1,30E-01	5,97E+00	0	7,14E-03	5,21E-02	3,67E-03	-8,22E-01
GWP-GHG	kg CO2 eq	2,64E+00	1,30E-01	5,66E+00	0	7,13E-03	5,21E-02	3,65E-03	-8,20E-01
Ozone depletion	kg CFC11 eq	7,62E-08	2,83E-09	1,71E-08	0	1,55E-10	5,83E-11	8,61E-11	-1,43E-08
Acidification	mol H+ eq	2,16E-02	2,84E-04	2,44E-02	0	1,56E-05	1,13E-05	2,59E-05	-5,36E-03
Eutrophication, freshwater*	kg P eq	1,25E-03	9,23E-06	1,07E-03	0	5,07E-07	1,13E-07	9,55E-07	-5,43E-04
Eutrophication, marine	kg N eq	3,28E-03	7,16E-05	4,51E-03	0	3,93E-06	6,66E-06	9,70E-06	-9,10E-04
Eutrophication, terrestrial	mol N eq	6,65E-02	7,28E-04	4,92E-02	0	4,00E-05	5,65E-05	1,04E-04	-9,53E-03
Photochemical ozone formation	kg NMVOC eq	1,15E-02	4,41E-04	1,44E-02	0	2,42E-05	1,42E-05	3,51E-05	-4,08E-03
Resource use, minerals and metals*	kg Sb eq	6,95E-05	4,25E-07	6,00E-06	0	2,33E-08	1,94E-09	7,39E-09	-3,04E-05
Resource use, fossils*	MJ	3,48E+01	1,84E+00	3,28E+01	0	1,01E-01	7,66E-03	7,89E-02	-8,85E+00
Water use*	m^3 depriv.	5,33E-01	7,61E-03	1,10E+00	0	4,18E-04	2,76E-04	3,34E-03	2,43E-02

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Table 116: Additional environmental impact indicators - CFDM, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	2,44E-07	9,68E-09	3,58E-07	0	5,31E-10	5,05E-11	5,59E-10	-7,13E-08
Human toxicity, non-cancer*	CTUh	7,07E-08	1,31E-09	3,32E-08	0	7,19E-11	1,24E-10	2,28E-11	-4,17E-08
Human toxicity, cancer*	CTUh	1,08E-08	5,92E-11	1,33E-09	0	3,25E-12	2,93E-12	2,04E-12	-6,50E-09
Land use*	Pt	2,11E+01	1,12E+00	2,68E+01	0	6,12E-02	2,13E-03	1,80E-01	-3,29E+00
Ionising radiation**	kBq U-235 eq	2,20E-01	2,50E-03	2,44E-01	0	1,37E-04	2,65E-05	1,04E-04	-3,50E-02
Ecotoxicity, freshwater	CTUe	3,34E+01	9,12E-01	1,03E+01	0	5,01E-02	1,11E-01	3,46E-02	-7,00E+00

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Table 117: Parameters describing resource use - CFDM, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,12E+00	2,90E-02	7,14E+00	0	1,59E-03	4,48E-04	1,36E-03	-8,34E-01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,12E+00	2,90E-02	7,14E+00	0	1,59E-03	4,48E-04	1,36E-03	-8,34E-01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,42E+01	1,96E+00	3,46E+01	0	1,08E-01	8,30E-03	8,40E-02	-9,38E+00
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,42E+01	1,96E+00	3,46E+01	0	1,08E-01	8,30E-03	8,40E-02	-9,38E+00
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	9,26E-03	2,66E-04	6,79E-04	0	1,18E-05	1,02E-05	1,90E-05	-2,39E-03

Table 118: Other environmental information describing waste categories - CFDM, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	1,77E-03	4,62E-05	6,13E-03	0	2,54E-06	5,86E-04	1,96E-06	-2,91E-04
Non-hazardous waste disposed	kg	9,23E-01	9,16E-02	2,67E-01	0	5,03E-03	7,17E-04	3,12E-01	-3,54E-01
Radioactive waste disposed/ stored	kg	5,25E-05	6,07E-07	5,55E-05	0	3,33E-08	6,57E-09	2,51E-08	-8,68E-06

Table 119: Environmental information describing output flows - CFDM, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,40E-02	0	0	4,38E-01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	8,62E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,69E-01	0	0

Table 120: Core environmental impact indicators - CFDM-V, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	6,34E+00	3,03E-01	5,69E+00	0	1,66E-02	5,24E-02	3,66E-03	-6,17E+00
Climate change - Biogenic	kg CO2 eq	-3,11E-01	2,78E-04	3,17E-01	0	1,52E-05	7,16E-06	2,33E-05	-1,37E-02
Climate change - Land use and LU change	kg CO2 eq	5,14E-03	1,50E-04	1,70E-03	0	8,20E-06	2,62E-07	2,67E-06	-4,21E-03
Climate change	kg CO2 eq	6,03E+00	3,03E-01	6,01E+00	0	1,66E-02	5,24E-02	3,69E-03	-6,19E+00
GWP-GHG	kg CO2 eq	6,34E+00	3,03E-01	5,70E+00	0	1,66E-02	5,24E-02	3,67E-03	-6,17E+00
Ozone depletion	kg CFC11 eq	1,53E-07	6,60E-09	1,72E-08	0	3,62E-10	5,86E-11	8,66E-11	-1,08E-07
Acidification	mol H+ eq	4,35E-02	6,62E-04	2,46E-02	0	3,63E-05	1,14E-05	2,61E-05	-3,18E-02
Eutrophication, freshwater*	kg P eq	3,04E-03	2,15E-05	1,07E-03	0	1,18E-06	1,14E-07	9,60E-07	-3,34E-03
Eutrophication, marine	kg N eq	7,45E-03	1,67E-04	4,53E-03	0	9,16E-06	6,70E-06	9,75E-06	-6,53E-03
Eutrophication, terrestrial	mol N eq	1,36E-01	1,70E-03	4,94E-02	0	9,31E-05	5,68E-05	1,04E-04	-6,70E-02
Photochemical ozone formation	kg NMVOC eq	2,80E-02	1,03E-03	1,45E-02	0	5,64E-05	1,42E-05	3,53E-05	-2,98E-02
Resource use, minerals and metals*	kg Sb eq	1,10E-04	9,91E-07	6,03E-06	0	5,43E-08	1,95E-09	7,43E-09	-1,02E-04
Resource use, fossils*	MJ	8,03E+01	4,30E+00	3,30E+01	0	2,36E-01	7,70E-03	7,94E-02	-6,57E+01
Water use*	m^3 depriv.	8,16E-01	1,77E-02	1,10E+00	0	9,73E-04	2,78E-04	3,36E-03	3,67E-01

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Table 121: Additional environmental impact indicators - CFDM-V, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	5,73E-07	2,26E-08	3,60E-07	0	1,24E-09	5,07E-11	5,62E-10	-5,37E-07
Human toxicity, non-cancer*	CTUh	1,36E-07	3,05E-09	3,34E-08	0	1,67E-10	1,25E-10	2,29E-11	-1,94E-07
Human toxicity, cancer*	CTUh	2,96E-08	1,38E-10	1,34E-09	0	7,57E-12	2,95E-12	2,05E-12	-4,95E-08
Land use*	Pt	5,18E+01	2,60E+00	2,70E+01	0	1,43E-01	2,14E-03	1,81E-01	-2,25E+01
Ionising radiation**	kBq U-235 eq	4,87E-01	5,83E-03	2,46E-01	0	3,19E-04	2,67E-05	1,05E-04	-2,20E-01
Ecotoxicity, freshwater	CTUe	5,67E+01	2,13E+00	1,04E+01	0	1,17E-01	1,12E-01	3,48E-02	-4,04E+01

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Table 122: Parameters describing resource use - CFDM-V, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,07E+01	6,76E-02	7,18E+00	0	3,71E-03	4,50E-04	1,36E-03	-6,03E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,07E+01	6,76E-02	7,18E+00	0	3,71E-03	4,50E-04	1,36E-03	-6,03E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	8,28E+01	4,57E+00	3,48E+01	0	2,51E-01	8,35E-03	8,44E-02	-6,96E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	8,28E+01	4,57E+00	3,48E+01	0	2,51E-01	8,35E-03	8,44E-02	-6,96E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,16E-02	6,19E-04	1,58E-03	0	2,75E-05	2,38E-05	4,44E-05	-5,57E-03

Table 123: Other environmental information describing waste categories - CFDM-V, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	3,84E-03	1,08E-04	6,17E-03	0	5,91E-06	5,89E-04	1,98E-06	-1,88E-03
Non-hazardous waste disposed	kg	2,29E+00	2,14E-01	2,71E-01	0	1,17E-02	7,21E-04	3,14E-01	-2,72E+00
Radioactive waste disposed/ stored	kg	1,18E-04	1,41E-06	5,58E-05	0	7,76E-08	6,61E-09	2,52E-08	-5,47E-05

Table 124: Environmental information describing output flows - CFDM-V, DN 200 mm

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	3,26E-02	0	0	1,46E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	8,62E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,69E-01	0	0

Table 125: Core environmental impact indicators - FDMR, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,01E+01	3,58E-01	7,57E+00	0	2,86E-02	3,10E-01	2,05E-03	-5,18E+00
Climate change - Biogenic	kg CO2 eq	-3,94E-01	3,28E-04	4,19E-01	0	2,62E-05	4,24E-05	1,30E-05	-1,22E-02
Climate change - Land use and LU change	kg CO2 eq	9,25E-03	1,77E-04	2,25E-03	0	1,41E-05	1,55E-06	1,49E-06	-3,64E-03
Climate change	kg CO2 eq	9,71E+00	3,59E-01	7,99E+00	0	2,87E-02	3,10E-01	2,06E-03	-5,19E+00
GWP-GHG	kg CO2 eq	1,01E+01	3,59E-01	7,58E+00	0	2,86E-02	3,10E-01	2,06E-03	-5,18E+00
Ozone depletion	kg CFC11 eq	2,24E-07	7,81E-09	2,29E-08	0	6,24E-10	3,47E-10	4,84E-11	-9,05E-08
Acidification	mol H+ eq	9,95E-02	7,84E-04	3,25E-02	0	6,26E-05	6,75E-05	1,46E-05	-3,00E-02
Eutrophication, freshwater*	kg P eq	5,95E-03	2,55E-05	1,42E-03	0	2,04E-06	6,73E-07	5,37E-07	-3,13E-03
Eutrophication, marine	kg N eq	1,32E-02	1,98E-04	6,22E-03	0	1,58E-05	3,97E-05	5,46E-06	-5,59E-03
Eutrophication, terrestrial	mol N eq	3,27E-01	2,01E-03	6,56E-02	0	1,60E-04	3,36E-04	5,84E-05	-5,79E-02
Photochemical ozone formation	kg NMVOC eq	4,88E-02	1,22E-03	1,92E-02	0	9,72E-05	8,43E-05	1,97E-05	-2,53E-02
Resource use, minerals and metals*	kg Sb eq	3,15E-04	1,17E-06	8,00E-06	0	9,36E-08	1,15E-08	4,16E-09	-1,36E-04
Resource use, fossils*	MJ	1,27E+02	5,09E+00	4,38E+01	0	4,07E-01	4,56E-02	4,44E-02	-5,58E+01
Water use*	m^3 depriv.	1,22E+00	2,10E-02	1,46E+00	0	1,68E-03	1,65E-03	1,88E-03	2,25E-01

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

Table 126: Additional environmental impact indicators - FDMR, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,21E-06	2,67E-08	4,77E-07	0	2,13E-09	3,00E-10	3,14E-10	-4,47E-07
Human toxicity, non-cancer*	CTUh	3,17E-07	3,61E-09	4,43E-08	0	2,89E-10	7,38E-10	1,28E-11	-2,10E-07
Human toxicity, cancer*	CTUh	5,28E-08	1,63E-10	1,78E-09	0	1,31E-11	1,74E-11	1,15E-12	-4,10E-08
Land use*	Pt	7,87E+01	3,08E+00	3,60E+01	0	2,46E-01	1,27E-02	1,01E-01	-1,97E+01
Ionising radiation**	kBq U-235 eq	8,86E-01	6,89E-03	3,25E-01	0	5,51E-04	1,58E-04	5,86E-05	-2,13E-01
Ecotoxicity, freshwater	CTUe	1,08E+02	2,52E+00	1,59E+01	0	2,01E-01	6,61E-01	1,95E-02	-3,87E+01

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Table 127: Parameters describing resource use - FDMR, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,72E+01	8,00E-02	9,51E+00	0	6,39E-03	2,67E-03	7,63E-04	-5,14E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,72E+01	8,00E-02	9,51E+00	0	6,39E-03	2,67E-03	7,63E-04	-5,14E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,34E+02	5,41E+00	4,62E+01	0	4,32E-01	4,94E-02	4,72E-02	-5,91E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,34E+02	5,41E+00	4,62E+01	0	4,32E-01	4,94E-02	4,72E-02	-5,91E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	3,70E-02	1,07E-03	2,73E-03	0	4,75E-05	4,12E-05	7,67E-05	-9,62E-03

Table 128: Other environmental information describing waste categories - FDMR, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	9,08E-03	1,27E-04	8,17E-03	0	1,02E-05	3,49E-03	1,11E-06	-1,72E-03
Non-hazardous waste disposed	kg	3,91E+00	2,53E-01	9,24E-01	0	2,02E-02	4,27E-03	1,75E-01	-2,24E+00
Radioactive waste disposed/ stored	kg	2,17E-04	1,67E-06	7,40E-05	0	1,34E-07	3,91E-08	1,41E-08	-5,29E-05

Table 129: Environmental information describing output flows - FDMR, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	5,64E-02	0	0	2,80E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	5,15E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,01E+00	0	0

Table 130: Core environmental impact indicators - FDMR, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,30E+01	3,82E-01	8,06E+00	1,30E+02	3,06E-02	5,67E-01	2,06E-03	-3,56E+00
Climate change - Biogenic	kg CO2 eq	-3,96E-01	3,50E-04	4,46E-01	1,24E+00	2,80E-05	4,24E-05	1,31E-05	-8,12E-03
Climate change - Land use and LU change	kg CO2 eq	1,65E-02	1,88E-04	2,39E-03	1,76E-01	1,51E-05	1,89E-05	1,50E-06	-2,49E-03
Climate change	kg CO2 eq	1,27E+01	3,82E-01	8,50E+00	1,31E+02	3,06E-02	5,67E-01	2,07E-03	-3,57E+00
GWP-GHG	kg CO2 eq	1,31E+01	3,82E-01	8,07E+00	1,30E+02	3,06E-02	5,67E-01	2,06E-03	-3,57E+00
Ozone depletion	kg CFC11 eq	2,54E-07	8,31E-09	2,44E-08	9,32E-07	6,66E-10	7,17E-10	4,86E-11	-6,27E-08
Acidification	mol H+ eq	1,56E-01	8,35E-04	3,46E-02	5,83E-01	6,68E-05	2,41E-04	1,46E-05	-1,60E-02
Eutrophication, freshwater*	kg P eq	1,07E-02	2,71E-05	1,51E-03	2,04E-01	2,17E-06	6,22E-06	5,39E-07	-1,79E-03
Eutrophication, marine	kg N eq	1,79E-02	2,11E-04	6,62E-03	1,27E-01	1,69E-05	9,97E-05	5,47E-06	-3,71E-03
Eutrophication, terrestrial	mol N eq	3,54E-01	2,14E-03	6,98E-02	9,37E-01	1,71E-04	1,05E-03	5,86E-05	-3,75E-02
Photochemical ozone formation	kg NMVOC eq	6,70E-02	1,30E-03	2,05E-02	2,75E-01	1,04E-04	2,24E-04	1,98E-05	-1,68E-02
Resource use, minerals and metals*	kg Sb eq	9,29E-04	1,25E-06	8,51E-06	8,44E-04	1,00E-07	2,06E-07	4,17E-09	-2,45E-05
Resource use, fossils*	MJ	1,59E+02	5,42E+00	4,66E+01	2,10E+03	4,34E-01	2,23E-01	4,45E-02	-3,85E+01
Water use*	m^3 depriv.	2,74E+00	2,24E-02	1,56E+00	2,23E+01	1,79E-03	1,12E-02	1,89E-03	2,29E-01

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

Table 131: Additional environmental impact indicators - FDMR, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	1,44E-06	2,84E-08	5,08E-07	1,40E-06	2,28E-09	2,36E-09	3,15E-10	-3,00E-07
Human toxicity, non-cancer*	CTUh	1,00E-06	3,85E-09	4,71E-08	1,47E-06	3,08E-10	5,20E-09	1,29E-11	-7,76E-08
Human toxicity, cancer*	CTUh	6,28E-08	1,74E-10	1,89E-09	4,32E-08	1,39E-11	6,19E-11	1,15E-12	-2,74E-08
Land use*	Pt	9,90E+01	3,28E+00	3,83E+01	2,18E+02	2,63E-01	4,26E-01	1,02E-01	-1,23E+01
Ionising radiation**	kBq U-235 eq	1,07E+00	7,34E-03	3,46E-01	5,44E+01	5,88E-04	8,96E-04	5,87E-05	-1,47E-01
Ecotoxicity, freshwater	CTUe	1,63E+02	2,68E+00	1,69E+01	4,60E+02	2,15E-01	3,45E+00	1,95E-02	-1,98E+01

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Table 132: Parameters describing resource use - FDMR, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,18E+01	8,52E-02	1,01E+01	1,43E+02	6,83E-03	3,78E-02	7,65E-04	-3,33E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,18E+01	8,52E-02	1,01E+01	1,43E+02	6,83E-03	3,78E-02	7,65E-04	-3,33E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,68E+02	5,76E+00	4,92E+01	2,23E+03	4,62E-01	2,40E-01	4,74E-02	-4,08E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,12E+01	5,76E+00	4,92E+01	2,23E+03	4,62E-01	2,40E-01	4,74E-02	-4,08E+01
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	3,93E-02	1,13E-03	2,90E-03	2,98E-02	5,04E-05	4,36E-05	8,13E-05	-1,02E-02

Table 133: Other environmental information describing waste categories - FDMR, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	2,05E-02	1,36E-04	8,70E-03	1,58E-01	1,09E-05	8,49E-03	1,11E-06	-1,06E-03
Non-hazardous waste disposed	kg	4,63E+00	2,69E-01	9,83E-01	1,28E+01	2,16E-02	2,11E-02	1,76E-01	-1,55E+00
Radioactive waste disposed/stored	kg	2,63E-04	1,78E-06	7,87E-05	1,30E-02	1,43E-07	2,21E-07	1,42E-08	-3,62E-05

Table 134: Environmental information describing output flows - FDMR, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	5,98E-02	0	0	3,00E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	4,53E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	8,85E-01	0	0

Table 135: Core environmental impact indicators - FDMR, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,94E+01	1,16E+00	2,27E+01	0	9,26E-02	3,18E-01	3,51E-02	-1,26E+01
Climate change - Biogenic	kg CO2 eq	-1,75E+00	1,06E-03	1,75E+00	0	8,48E-05	4,34E-05	2,24E-04	-2,87E-02
Climate change - Land use and LU change	kg CO2 eq	2,69E-02	5,72E-04	6,76E-03	0	4,57E-05	1,58E-06	2,56E-05	-8,75E-03
Climate change	kg CO2 eq	2,77E+01	1,16E+00	2,40E+01	0	9,27E-02	3,18E-01	3,54E-02	-1,26E+01
GWP-GHG	kg CO2 eq	2,91E+01	1,16E+00	2,27E+01	0	9,26E-02	3,18E-01	3,52E-02	-1,26E+01
Ozone depletion	kg CFC11 eq	1,02E-06	2,52E-08	6,86E-08	0	2,02E-09	3,55E-10	8,31E-10	-2,19E-07
Acidification	mol H+ eq	2,80E-01	2,53E-03	9,78E-02	0	2,02E-04	6,90E-05	2,50E-04	-7,21E-02
Eutrophication, freshwater*	kg P eq	1,62E-02	8,23E-05	4,27E-03	0	6,58E-06	6,88E-07	9,21E-06	-7,39E-03
Eutrophication, marine	kg N eq	3,34E-02	6,39E-04	1,83E-02	0	5,10E-05	4,06E-05	9,36E-05	-1,36E-02
Eutrophication, terrestrial	mol N eq	9,30E-01	6,49E-03	1,97E-01	0	5,19E-04	3,44E-04	1,00E-03	-1,41E-01
Photochemical ozone formation	kg NMVOC eq	1,19E-01	3,93E-03	5,77E-02	0	3,14E-04	8,62E-05	3,39E-04	-6,17E-02
Resource use, minerals and metals*	kg Sb eq	8,58E-04	3,79E-06	2,40E-05	0	3,03E-07	1,18E-08	7,13E-08	-3,15E-04
Resource use, fossils*	MJ	3,78E+02	1,65E+01	1,32E+02	0	1,31E+00	4,66E-02	7,61E-01	-1,34E+02
Water use*	m^3 depriv.	4,32E+00	6,78E-02	4,40E+00	0	5,42E-03	1,68E-03	3,22E-02	6,07E-01

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Table 136: Additional environmental impact indicators - FDMR, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	3,07E-06	8,63E-08	1,43E-06	0	6,90E-09	3,07E-10	5,39E-09	-1,10E-06
Human toxicity, non-cancer*	CTUh	8,16E-07	1,17E-08	1,33E-07	0	9,33E-10	7,55E-10	2,20E-10	-4,97E-07
Human toxicity, cancer*	CTUh	1,33E-07	5,28E-10	5,35E-09	0	4,22E-11	1,78E-11	1,96E-11	-1,01E-07
Land use*	Pt	2,29E+02	9,95E+00	1,08E+02	0	7,95E-01	1,30E-02	1,74E+00	-4,79E+01
Ionising radiation**	kBq U-235 eq	2,68E+00	2,23E-02	9,78E-01	0	1,78E-03	1,61E-04	1,00E-03	-4,66E-01
Ecotoxicity, freshwater	CTUe	3,14E+02	8,13E+00	4,34E+01	0	6,50E-01	6,76E-01	3,34E-01	-9,28E+01

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Table 137: Parameters describing resource use - FDMR, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,06E+01	2,59E-01	2,86E+01	0	2,07E-02	2,73E-03	1,31E-02	-1,25E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,06E+01	2,59E-01	2,86E+01	0	2,07E-02	2,73E-03	1,31E-02	-1,25E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,62E+02	1,75E+01	1,39E+02	0	1,40E+00	5,06E-02	8,10E-01	-1,42E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,62E+02	1,75E+01	1,39E+02	0	1,40E+00	5,06E-02	8,10E-01	-1,42E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,20E-01	3,45E-03	8,82E-03	0	1,53E-04	1,33E-04	2,48E-04	-3,11E-02

Table 138: Other environmental information describing waste categories - FDMR, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	2,48E-02	4,12E-04	2,46E-02	0	3,29E-05	3,57E-03	1,89E-05	-4,07E-03
Non-hazardous waste disposed	kg	1,10E+01	8,17E-01	1,64E+00	0	6,53E-02	4,37E-03	3,01E+00	-5,52E+00
Radioactive waste disposed/stored	kg	6,44E-04	5,41E-06	2,22E-04	0	4,32E-07	4,00E-08	2,42E-07	-1,16E-04

Table 139: Environmental information describing output flows - FDMR, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,82E-01	0	0	6,89E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	5,25E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,03E+00	0	0

Table 140: Core environmental impact indicators - FDMR, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	3,33E+01	1,17E+00	2,29E+01	1,30E+02	9,37E-02	5,70E-01	3,51E-02	-1,07E+01
Climate change - Biogenic	kg CO2 eq	-1,75E+00	1,07E-03	1,75E+00	1,23E+00	8,58E-05	4,34E-05	2,24E-04	-2,34E-02
Climate change - Land use and LU change	kg CO2 eq	3,35E-02	5,78E-04	6,83E-03	1,76E-01	4,62E-05	1,89E-05	2,56E-05	-7,24E-03
Climate change	kg CO2 eq	3,16E+01	1,17E+00	2,42E+01	1,31E+02	9,38E-02	5,70E-01	3,54E-02	-1,07E+01
GWP-GHG	kg CO2 eq	3,30E+01	1,17E+00	2,30E+01	1,30E+02	9,37E-02	5,70E-01	3,52E-02	-1,07E+01
Ozone depletion	kg CFC11 eq	1,06E-06	2,55E-08	6,94E-08	9,30E-07	2,04E-09	7,20E-10	8,31E-10	-1,88E-07
Acidification	mol H+ eq	3,29E-01	2,56E-03	9,89E-02	5,81E-01	2,05E-04	2,41E-04	2,50E-04	-4,83E-02
Eutrophication, freshwater*	kg P eq	2,00E-02	8,33E-05	4,32E-03	2,03E-01	6,66E-06	6,21E-06	9,21E-06	-5,27E-03
Eutrophication, marine	kg N eq	4,29E-02	6,46E-04	1,85E-02	1,26E-01	5,17E-05	1,00E-04	9,36E-05	-1,11E-02
Eutrophication, terrestrial	mol N eq	9,72E-01	6,56E-03	1,99E-01	9,34E-01	5,25E-04	1,05E-03	1,00E-03	-1,13E-01
Photochemical ozone formation	kg NMVOC eq	1,53E-01	3,97E-03	5,83E-02	2,74E-01	3,18E-04	2,25E-04	3,39E-04	-5,08E-02
Resource use, minerals and metals*	kg Sb eq	1,30E-03	3,83E-06	2,43E-05	8,42E-04	3,06E-07	2,05E-07	7,13E-08	-7,59E-05
Resource use, fossils*	MJ	4,21E+02	1,66E+01	1,33E+02	2,09E+03	1,33E+00	2,23E-01	7,61E-01	-1,14E+02
Water use*	m^3 depriv.	5,59E+00	6,86E-02	4,45E+00	2,22E+01	5,49E-03	1,12E-02	3,22E-02	7,50E-01

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

Table 141: Additional environmental impact indicators - FDMR, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	3,53E-06	8,73E-08	1,45E-06	1,40E-06	6,98E-09	2,36E-09	5,39E-09	-9,22E-07
Human toxicity, non-cancer*	CTUh	1,36E-06	1,18E-08	1,34E-07	1,47E-06	9,44E-10	5,20E-09	2,20E-10	-2,39E-07
Human toxicity, cancer*	CTUh	1,40E-07	5,34E-10	5,41E-09	4,31E-08	4,27E-11	6,20E-11	1,96E-11	-8,51E-08
Land use*	Pt	2,46E+02	1,01E+01	1,09E+02	2,17E+02	8,04E-01	4,25E-01	1,74E+00	-3,72E+01
Ionising radiation**	kBq U-235 eq	2,81E+00	2,25E-02	9,89E-01	5,42E+01	1,80E-03	8,95E-04	1,00E-03	-3,79E-01
Ecotoxicity, freshwater	CTUe	3,53E+02	8,22E+00	4,39E+01	4,59E+02	6,58E-01	3,45E+00	3,34E-01	-6,01E+01

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 142: Parameters describing resource use - FDMR, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,44E+01	2,62E-01	2,89E+01	1,43E+02	2,09E-02	3,77E-02	1,31E-02	-1,02E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,44E+01	2,62E-01	2,89E+01	1,43E+02	2,09E-02	3,77E-02	1,31E-02	-1,02E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	4,08E+02	1,77E+01	1,40E+02	2,22E+03	1,41E+00	2,40E-01	8,10E-01	-1,21E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	4,08E+02	1,77E+01	1,40E+02	2,22E+03	1,41E+00	2,40E-01	8,10E-01	-1,21E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,21E-01	3,49E-03	8,92E-03	9,17E-02	1,55E-04	1,34E-04	2,50E-04	-3,14E-02

Table 143: Other environmental information describing waste categories - FDMR, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	3,53E-02	4,17E-04	2,48E-02	1,58E-01	3,33E-05	8,52E-03	1,89E-05	-3,08E-03
Non-hazardous waste disposed	kg	1,16E+01	8,27E-01	1,65E+00	1,28E+01	6,61E-02	2,11E-02	3,01E+00	-4,72E+00
Radioactive waste disposed/ stored	kg	6,77E-04	5,47E-06	2,25E-04	1,30E-02	4,37E-07	2,21E-07	2,42E-07	-9,42E-05

Table 144: Environmental information describing output flows - FDMR, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1,84E-01	0	0	7,03E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	4,62E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	9,02E-01	0	0

Table 145: Core environmental impact indicators - FDMR, DN 800 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	9,37E+01	3,92E+00	4,28E+01	0	3,14E-01	6,16E-02	2,26E-01	-2,60E+01
Climate change - Biogenic	kg CO2 eq	-6,41E+00	3,59E-03	6,41E+00	0	2,88E-04	8,41E-06	1,44E-03	-5,62E-02
Climate change - Land use and LU change	kg CO2 eq	7,81E-02	1,93E-03	1,28E-02	0	1,55E-04	3,07E-07	1,65E-04	-1,75E-02
Climate change	kg CO2 eq	8,74E+01	3,92E+00	4,52E+01	0	3,15E-01	6,16E-02	2,28E-01	-2,61E+01
GWP-GHG	kg CO2 eq	9,22E+01	3,92E+00	4,29E+01	0	3,14E-01	6,16E-02	2,27E-01	-2,60E+01
Ozone depletion	kg CFC11 eq	3,09E-06	8,53E-08	1,29E-07	0	6,84E-09	6,89E-11	5,34E-09	-4,55E-07
Acidification	mol H+ eq	7,31E-01	8,56E-03	1,85E-01	0	6,87E-04	1,34E-05	1,61E-03	-1,25E-01
Eutrophication, freshwater*	kg P eq	4,03E-02	2,78E-04	8,06E-03	0	2,23E-05	1,34E-07	5,93E-05	-1,32E-02
Eutrophication, marine	kg N eq	1,15E-01	2,16E-03	3,43E-02	0	1,73E-04	7,87E-06	6,02E-04	-2,72E-02
Eutrophication, terrestrial	mol N eq	2,47E+00	2,19E-02	3,72E-01	0	1,76E-03	6,68E-05	6,44E-03	-2,78E-01
Photochemical ozone formation	kg NMVOC eq	3,91E-01	1,33E-02	1,09E-01	0	1,07E-03	1,67E-05	2,18E-03	-1,25E-01
Resource use, minerals and metals*	kg Sb eq	1,50E-03	1,28E-05	4,54E-05	0	1,03E-06	2,29E-09	4,59E-07	-2,88E-04
Resource use, fossils*	MJ	1,16E+03	5,56E+01	2,48E+02	0	4,46E+00	9,05E-03	4,90E+00	-2,76E+02
Water use*	m^3 depriv.	1,57E+01	2,29E-01	8,31E+00	0	1,84E-02	3,27E-04	2,07E-01	1,77E+00

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

Table 146: Additional environmental impact indicators - FDMR, DN 800 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	8,05E-06	2,92E-07	2,71E-06	0	2,34E-08	5,96E-11	3,47E-08	-2,27E-06
Human toxicity, non-cancer*	CTUh	1,60E-06	3,95E-08	2,51E-07	0	3,17E-09	1,47E-10	1,42E-09	-6,84E-07
Human toxicity, cancer*	CTUh	2,91E-07	1,79E-09	1,01E-08	0	1,43E-10	3,46E-12	1,26E-10	-2,10E-07
Land use*	Pt	9,45E+02	3,36E+01	2,03E+02	0	2,70E+00	2,52E-03	1,12E+01	-9,25E+01
Ionising radiation**	kBq U-235 eq	8,13E+00	7,53E-02	1,85E+00	0	6,04E-03	3,13E-05	6,46E-03	-8,62E-01
Ecotoxicity, freshwater	CTUe	1,07E+03	2,75E+01	8,01E+01	0	2,21E+00	1,31E-01	2,15E+00	-1,57E+02

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Table 147: Parameters describing resource use - FDMR, DN 800 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,46E+02	8,74E-01	5,40E+01	0	7,01E-02	5,29E-04	8,41E-02	-2,52E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,46E+02	8,74E-01	5,40E+01	0	7,01E-02	5,29E-04	8,41E-02	-2,52E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,02E+03	5,91E+01	2,62E+02	0	4,74E+00	9,81E-03	5,21E+00	-2,92E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,02E+03	5,91E+01	2,62E+02	0	4,74E+00	9,81E-03	5,21E+00	-2,92E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,05E-01	1,17E-02	2,99E-02	0	5,20E-04	4,50E-04	8,38E-04	-1,05E-01

Table 148: Other environmental information describing waste categories - FDMR, DN 800 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	6,11E-02	1,39E-03	4,64E-02	0	1,12E-04	6,93E-04	1,22E-04	-7,57E-03
Non-hazardous waste disposed	kg	2,87E+01	2,76E+00	2,58E+00	0	2,22E-01	8,47E-04	1,93E+01	-1,16E+01
Radioactive waste disposed/ stored	kg	1,88E-03	1,83E-05	4,20E-04	0	1,47E-06	7,77E-09	1,56E-06	-2,15E-04

Table 149: Environmental information describing output flows - FDMR, DN 800 mm, manual

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	6,16E-01	0	0	1,46E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	1,02E-01	0	0
Exported energy, heat	MJ	0	0	0	0	0	1,99E-01	0	0

Table 150: Core environmental impact indicators - FDMR, DN 800 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,08E+02	4,19E+00	4,58E+01	2,47E+02	3,36E-01	8,42E-01	2,26E-01	-2,48E+01
Climate change - Biogenic	kg CO2 eq	-6,73E+00	3,84E-03	6,74E+00	2,35E+00	3,08E-04	8,41E-06	1,44E-03	-5,30E-02
Climate change - Land use and LU change	kg CO2 eq	1,05E-01	2,07E-03	1,36E-02	3,35E-01	1,66E-04	4,94E-05	1,65E-04	-1,68E-02
Climate change	kg CO2 eq	1,01E+02	4,20E+00	4,83E+01	2,50E+02	3,37E-01	8,41E-01	2,28E-01	-2,49E+01
GWP-GHG	kg CO2 eq	1,06E+02	4,20E+00	4,58E+01	2,48E+02	3,36E-01	8,43E-01	2,27E-01	-2,48E+01
Ozone depletion	kg CFC11 eq	3,30E-06	9,13E-08	1,38E-07	1,77E-06	7,32E-09	1,17E-09	5,34E-09	-4,34E-07
Acidification	mol H+ eq	9,47E-01	9,17E-03	1,97E-01	1,11E+00	7,35E-04	5,14E-04	1,61E-03	-1,13E-01
Eutrophication, freshwater*	kg P eq	5,77E-02	2,98E-04	8,62E-03	3,87E-01	2,39E-05	1,58E-05	5,93E-05	-1,21E-02
Eutrophication, marine	kg N eq	1,36E-01	2,31E-03	3,67E-02	2,41E-01	1,85E-04	1,84E-04	6,02E-04	-2,59E-02
Eutrophication, terrestrial	mol N eq	2,69E+00	2,35E-02	3,98E-01	1,78E+00	1,88E-03	2,14E-03	6,44E-03	-2,63E-01
Photochemical ozone formation	kg NMVOC eq	4,71E-01	1,42E-02	1,16E-01	5,23E-01	1,14E-03	4,25E-04	2,18E-03	-1,19E-01
Resource use, minerals and metals*	kg Sb eq	3,51E-03	1,37E-05	4,85E-05	1,60E-03	1,10E-06	5,50E-07	4,59E-07	-1,78E-04
Resource use, fossils*	MJ	1,32E+03	5,96E+01	2,66E+02	3,99E+03	4,78E+00	5,17E-01	4,90E+00	-2,63E+02
Water use*	m³ depriv.	2,07E+01	2,46E-01	8,88E+00	4,24E+01	1,97E-02	2,74E-02	2,07E-01	1,79E+00

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Table 151: Additional environmental impact indicators - FDMR, DN 800 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Particulate matter	disease inc.	9,32E-06	3,13E-07	2,89E-06	2,67E-06	2,51E-08	5,92E-09	3,47E-08	-2,16E-06
Human toxicity, non-cancer*	CTUh	3,84E-06	4,23E-08	2,68E-07	2,80E-06	3,39E-09	1,28E-08	1,42E-09	-5,60E-07
Human toxicity, cancer*	CTUh	3,52E-07	1,91E-09	1,08E-08	8,21E-08	1,53E-10	1,32E-10	1,26E-10	-1,99E-07
Land use*	Pt	1,06E+03	3,60E+01	2,17E+02	4,14E+02	2,89E+00	1,17E+00	1,12E+01	-8,71E+01
Ionising radiation**	kBq U-235 eq	9,10E+00	8,06E-02	1,97E+00	1,03E+02	6,46E-03	2,13E-03	6,46E-03	-8,08E-01
Ecotoxicity, freshwater	CTUe	1,29E+03	2,94E+01	8,57E+01	8,75E+02	2,36E+00	8,09E+00	2,15E+00	-1,41E+02

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Table 152: Parameters describing resource use - FDMR, DN 800 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,70E+02	9,36E-01	5,78E+01	2,72E+02	7,51E-02	9,97E-02	8,41E-02	-2,38E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,70E+02	9,36E-01	5,78E+01	2,72E+02	7,51E-02	9,97E-02	8,41E-02	-2,38E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,19E+03	6,33E+01	2,80E+02	4,23E+03	5,08E+00	5,54E-01	5,21E+00	-2,79E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,19E+03	6,33E+01	2,80E+02	4,23E+03	5,08E+00	5,54E-01	5,21E+00	-2,79E+02
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,33E-01	1,25E-02	3,19E-02	3,28E-01	5,55E-04	4,81E-04	8,96E-04	-1,12E-01

Table 153: Other environmental information describing waste categories - FDMR, DN 800 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Hazardous waste	kg	9,74E-02	1,49E-03	4,96E-02	3,01E-01	1,20E-04	1,54E-02	1,22E-04	-7,03E-03
Non-hazardous waste disposed	kg	3,28E+01	2,96E+00	2,76E+00	2,44E+01	2,37E-01	4,90E-02	1,93E+01	-1,11E+01
Radioactive waste disposed/ stored	kg	2,12E-03	1,96E-05	4,49E-04	2,48E-02	1,57E-06	5,27E-07	1,56E-06	-2,01E-04

Table 154: Environmental information describing output flows - FDMR, DN 800 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	6,59E-01	0	0	1,70E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	3,86E-02	0	0
Exported energy, heat	MJ	0	0	0	0	0	7,55E-02	0	0

Table 155: Core environmental impact indicators - FDMQ 120, 150x150 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	2,65E+01	2,66E+01	8,68E-01	1,03E+01	4,96E+00	0	7,93E-02	1,96E-01	8,44E-03	-1,33E+01
Climate change - Biogenic	kg CO2 eq	-1,01E+00	-1,01E+00	5,86E-04	8,98E-02	3,95E-03	0	5,35E-05	1,01E+00	1,09E-06	-1,30E-02
Climate change - Land use and LU change	kg CO2 eq	2,12E-02	2,12E-02	2,89E-04	2,32E-03	3,16E-03	0	2,64E-05	1,22E-04	4,38E-06	-6,63E-03
Climate change	kg CO2 eq	2,55E+01	2,56E+01	8,69E-01	1,04E+01	4,97E+00	0	7,94E-02	4,17E-01	8,45E-03	-1,33E+01
GWP-GHG	kg CO2 eq	2,62E+01	2,54E+01	8,68E-01	9,76E+00	4,93E+00	0	7,88E-02	3,03E-01	8,34E-03	-1,30E+01
Ozone depletion	kg CFC11 eq	3,63E-07	3,63E-07	1,73E-08	3,52E-08	6,14E-08	0	1,58E-09	1,04E-09	2,44E-10	-6,38E-08
Acidification	mol H+ eq	2,63E-01	2,63E-01	1,81E-03	2,46E-02	1,67E-02	0	1,65E-04	6,85E-04	5,98E-05	-6,23E-02
Eutrophication, freshwater*	kg P eq	1,32E-02	1,33E-02	5,88E-05	8,76E-04	8,77E-04	0	5,37E-06	5,99E-05	7,01E-07	-5,99E-03
Eutrophication, marine	kg N eq	3,30E-02	3,31E-02	4,34E-04	7,35E-03	3,51E-03	0	3,97E-05	3,24E-04	2,28E-05	-1,28E-02
Eutrophication, terrestrial	mol N eq	9,28E-01	9,29E-01	4,68E-03	7,82E-02	5,00E-02	0	4,28E-04	1,83E-03	2,49E-04	-1,33E-01
Photochemical ozone formation	kg NMVOC eq	1,00E-01	1,00E-01	3,00E-03	2,26E-02	1,07E-02	0	2,75E-04	5,40E-04	8,91E-05	-4,42E-02
Resource use, minerals and metals*	kg Sb eq	7,17E-04	7,18E-04	2,82E-06	2,45E-05	3,84E-05	0	2,58E-07	2,73E-06	1,31E-08	-1,88E-04
Resource use, fossils*	MJ	3,34E+02	3,35E+02	1,22E+01	4,41E+01	3,62E+01	0	1,12E+00	1,15E+00	2,07E-01	-1,36E+02
Water use*	m^3 depriv.	1,02E+01	1,02E+01	6,88E-02	1,40E+00	1,19E+00	0	6,29E-03	2,60E-02	9,22E-03	-3,80E+00

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

Table 156: Additional environmental impact indicators - FDMQ 120, 150x150 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	3,44E-06	3,45E-06	6,39E-08	2,39E-07	1,53E-07	0	5,84E-09	1,21E-08	1,36E-09	-1,21E-06
Human toxicity, non-cancer*	CTUh	6,23E-07	6,25E-07	7,90E-09	5,60E-08	2,79E-08	0	7,22E-10	4,50E-09	3,72E-11	-3,73E-07
Human toxicity, cancer*	CTUh	1,67E-06	1,68E-06	6,16E-09	1,04E-08	1,85E-08	0	5,63E-10	1,48E-09	3,81E-11	-1,35E-06
Land use*	Pt	2,01E+02	2,01E+02	7,37E+00	2,59E+01	7,94E+00	0	6,74E-01	5,94E+00	4,07E-01	-4,49E+01
Ionising radiation**	kBq U-235 eq	2,26E+00	2,27E+00	1,58E-02	1,07E-01	2,27E-01	0	1,45E-03	1,63E-02	1,32E-04	-4,04E-01
Ecotoxicity, freshwater	CTUe	7,18E+02	7,21E+02	3,32E+00	2,41E+01	2,68E+01	0	3,04E-01	2,37E+00	2,83E-02	-4,53E+02

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 157: Parameters describing resource use - FDMQ 120, 150x150 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,58E+01	4,59E+01	2,09E-01	3,81E+00	3,12E+00	0	1,91E-02	2,15E-01	1,92E-03	-1,24E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,58E+01	4,59E+01	2,09E-01	3,81E+00	3,12E+00	0	1,91E-02	2,15E-01	1,92E-03	-1,24E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,34E+02	3,35E+02	1,22E+01	4,41E+01	3,62E+01	0	1,12E+00	1,15E+00	2,07E-01	-1,36E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,34E+02	3,35E+02	1,22E+01	4,41E+01	3,62E+01	0	1,12E+00	1,15E+00	2,07E-01	-1,36E+02
Use of secondary material	kg	2,94E+00	2,96E+00	5,66E-03	1,23E-02	6,77E-01	0	5,18E-04	2,18E-03	5,20E-05	-2,29E+00
Use of renewable secondary fuels	MJ, net calorific value	4,21E-01	4,21E-01	7,16E-05	9,85E-03	1,64E-03	0	6,55E-06	1,70E-04	1,08E-06	-1,45E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,52E-01	2,53E-01	1,70E-03	3,39E-02	2,69E-02	0	1,55E-04	6,66E-04	2,15E-04	-9,77E-02

Table 158: Other environmental information describing waste categories - FDMQ 120, 150x150 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	6,50E+00	6,54E+00	1,78E-02	2,40E-01	2,68E-01	0	1,63E-03	1,69E-02	2,30E-04	-5,08E+00
Non-hazardous waste disposed	kg	1,04E+02	1,05E+02	3,76E-01	8,88E+00	9,64E+00	0	3,44E-02	9,33E-01	5,26E-03	-6,02E+01
Radioactive waste disposed/stored	kg	5,56E-04	5,57E-04	3,93E-06	2,65E-05	5,53E-05	0	3,60E-07	4,19E-06	3,22E-08	-1,01E-04

Table 159: Environmental information describing output flows - FDMQ 120, 150x150 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,06E+00	1,06E+00	9,28E-05	1,11E-02	2,14E-03	0	8,48E-06	6,70E+00	9,02E-07	-2,75E-03
Materials for energy recovery	kg	1,12E-04	1,12E-04	7,86E-07	1,05E-05	6,83E-06	0	7,18E-08	2,02E-07	4,06E-09	-5,14E-05
Exported energy, electricity	MJ	1,35E-01	1,35E-01	2,10E-03	9,82E-03	2,12E-02	0	1,92E-04	2,60E-03	1,26E-05	-3,19E-02
Exported energy, heat	MJ	1,48E-01	1,48E-01	3,04E-03	1,54E-02	1,12E-02	0	2,78E-04	2,84E-04	8,08E-06	-7,94E-02

Table 160: Core environmental impact indicators - FDMQ 120, 150x150 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	2,92E+01	2,93E+01	8,80E-01	1,04E+01	5,03E+00	1,22E+02	8,05E-02	4,45E-01	1,35E-02	-1,14E+01
Climate change - Biogenic	kg CO2 eq	-7,25E-01	-7,25E-01	5,94E-04	9,11E-02	4,00E-03	1,43E+00	5,43E-05	7,25E-01	7,70E-05	-1,07E-02
Climate change - Land use and LU change	kg CO2 eq	2,80E-02	2,81E-02	2,93E-04	2,36E-03	3,20E-03	2,00E-01	2,68E-05	1,27E-04	3,28E-06	-5,55E-03
Climate change	kg CO2 eq	2,85E+01	2,86E+01	8,81E-01	1,05E+01	5,04E+00	1,24E+02	8,05E-02	6,35E-01	1,36E-02	-1,14E+01
GWP-GHG	kg CO2 eq	2,89E+01	2,84E+01	8,81E-01	9,90E+00	5,00E+00	1,23E+02	5,84E-02	6,27E-01	1,33E-02	-1,12E+01
Ozone depletion	kg CFC11 eq	3,81E-07	3,82E-07	1,75E-08	3,57E-08	6,23E-08	8,84E-07	1,60E-09	1,21E-09	4,23E-10	-5,41E-08
Acidification	mol H+ eq	3,16E-01	3,16E-01	1,83E-03	2,49E-02	1,70E-02	5,42E-01	1,68E-04	8,04E-04	1,49E-04	-4,76E-02
Eutrophication, freshwater*	kg P eq	1,77E-02	1,78E-02	5,96E-05	8,89E-04	8,89E-04	1,86E-01	5,45E-06	5,81E-05	2,27E-05	-4,67E-03
Eutrophication, marine	kg N eq	3,74E-02	3,75E-02	4,40E-04	7,46E-03	3,56E-03	1,18E-01	4,02E-05	3,48E-04	3,72E-05	-1,07E-02
Eutrophication, terrestrial	mol N eq	9,44E-01	9,45E-01	4,75E-03	7,94E-02	5,07E-02	8,77E-01	4,34E-04	2,39E-03	3,99E-04	-1,10E-01
Photochemical ozone formation	kg NMVOC eq	1,18E-01	1,18E-01	3,05E-03	2,29E-02	1,09E-02	2,57E-01	2,78E-04	6,42E-04	1,46E-04	-3,70E-02
Resource use, minerals and metals*	kg Sb eq	1,31E-03	1,32E-03	2,86E-06	2,48E-05	3,90E-05	8,49E-04	2,61E-07	2,60E-06	2,57E-08	-7,41E-05
Resource use, fossils*	MJ	2,22E+02	2,23E+02	1,24E+01	4,47E+01	3,67E+01	2,13E+03	1,13E+00	1,28E+00	3,14E-01	-1,16E+02
Water use*	m^3 depriv.	1,07E+01	1,08E+01	6,98E-02	1,42E+00	1,21E+00	5,65E+01	6,38E-03	3,69E-02	-1,63E-01	-3,17E+00

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

Table 161: Additional environmental impact indicators - FDMQ 120, 150x150 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	3,57E-06	3,57E-06	6,48E-08	2,43E-07	1,55E-07	1,30E-06	5,92E-09	1,28E-08	2,27E-09	-1,03E-06
Human toxicity, non-cancer*	CTUh	1,09E-06	1,09E-06	8,01E-09	5,68E-08	2,83E-08	1,41E-06	7,33E-10	8,69E-09	3,77E-10	-2,55E-07
Human toxicity, cancer*	CTUh	1,67E-06	1,68E-06	6,25E-09	1,05E-08	1,88E-08	1,84E-07	5,71E-10	1,63E-09	7,68E-11	-1,17E-06
Land use*	Pt	2,23E+02	2,23E+02	7,48E+00	2,63E+01	8,05E+00	2,41E+02	6,83E-01	5,58E+00	7,72E-01	-3,68E+01
Ionising radiation**	kBq U-235 eq	2,42E+00	2,43E+00	1,61E-02	1,09E-01	2,30E-01	5,55E+01	1,47E-03	1,51E-02	4,21E-04	-3,34E-01
Ecotoxicity, freshwater	CTUe	7,65E+02	7,68E+02	3,37E+00	2,45E+01	2,72E+01	4,69E+02	3,08E-01	4,92E+00	2,31E-01	-3,83E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 162: Parameters describing resource use - FDMQ 120, 150x150 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,05E+01	5,06E+01	2,12E-01	3,86E+00	3,17E+00	1,63E+02	1,94E-02	2,27E-01	6,53E-03	-1,04E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,05E+01	5,06E+01	2,12E-01	3,86E+00	3,17E+00	1,63E+02	1,94E-02	2,27E-01	6,53E-03	-1,04E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,22E+02	2,23E+02	1,24E+01	4,47E+01	3,67E+01	2,13E+03	1,13E+00	1,28E+00	3,14E-01	-1,16E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,22E+02	2,23E+02	1,24E+01	4,47E+01	3,67E+01	2,13E+03	1,13E+00	1,28E+00	3,14E-01	-1,16E+02
Use of secondary material	kg	5,71E-01	5,87E-01	5,74E-03	1,25E-02	6,87E-01	2,06E-01	5,25E-04	2,25E-03	1,05E-04	-3,08E+00
Use of renewable secondary fuels	MJ, net calorific value	4,25E-01	4,25E-01	7,26E-05	9,99E-03	1,67E-03	1,78E-03	6,64E-06	3,33E-04	1,89E-06	-1,24E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,85E-01	2,86E-01	1,72E-03	3,44E-02	2,73E-02	1,35E+00	1,57E-04	9,23E-04	-3,80E-03	-8,18E-02

Table 163: Other environmental information describing waste categories - FDMQ 120, 150x150 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	6,37E+00	6,41E+00	1,81E-02	2,43E-01	2,71E-01	3,74E+00	1,65E-03	4,18E-02	5,32E-04	-4,37E+00
Non-hazardous waste disposed	kg	1,01E+02	1,01E+02	3,81E-01	9,00E+00	9,77E+00	9,10E+02	3,49E-02	9,29E-01	4,83E+00	-5,01E+01
Radioactive waste disposed/ stored	kg	4,95E-04	4,96E-04	3,99E-06	2,69E-05	5,61E-05	1,33E-02	3,65E-07	3,86E-06	1,03E-07	-8,35E-05

Table 164: Environmental information describing output flows - FDMQ 120, 150x150 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,08E+00	1,08E+00	9,41E-05	1,12E-02	2,17E-03	1,24E-01	8,60E-06	5,78E+00	4,06E-06	-1,10E+00
Materials for energy recovery	kg	6,17E-05	6,21E-05	7,97E-07	1,07E-05	6,93E-06	2,11E-05	7,29E-08	2,32E-07	7,81E-09	-4,39E-05
Exported energy, electricity	MJ	1,14E-01	1,15E-01	2,13E-03	9,96E-03	2,15E-02	1,16E+00	1,95E-04	2,33E-03	1,31E-04	-2,71E-02
Exported energy, heat	MJ	8,75E-02	8,81E-02	3,08E-03	1,56E-02	1,14E-02	2,80E-01	2,82E-04	3,44E-04	2,93E-04	-6,36E-02

Table 165: Core environmental impact indicators - FDMQ 120, 750x400 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	7,55E+01	7,74E+01	3,27E+00	1,70E+01	1,03E+01	0	2,98E-01	4,16E-01	1,42E-01	-3,27E+01
Climate change - Biogenic	kg CO2 eq	-3,85E+00	-3,95E+00	2,20E-03	9,27E-01	1,20E-02	0	2,01E-04	3,85E+00	8,10E-04	-3,17E-02
Climate change - Land use and LU change	kg CO2 eq	6,41E-02	6,57E-02	1,09E-03	4,06E-03	9,84E-03	0	9,93E-05	2,98E-04	3,45E-05	-1,62E-02
Climate change	kg CO2 eq	7,17E+01	7,35E+01	3,27E+00	1,80E+01	1,03E+01	0	2,99E-01	9,57E-01	1,43E-01	-3,27E+01
GWP-GHG	kg CO2 eq	7,48E+01	7,66E+01	3,07E+00	1,78E+01	1,03E+01	0	2,17E-01	9,45E-01	1,40E-01	-3,20E+01
Ozone depletion	kg CFC11 eq	1,17E-06	1,20E-06	6,49E-08	4,02E-08	1,90E-07	0	5,93E-09	2,53E-09	4,45E-09	-1,56E-07
Acidification	mol H+ eq	7,04E-01	7,21E-01	6,80E-03	6,01E-02	5,11E-02	0	6,22E-04	1,66E-03	1,57E-03	-1,52E-01
Eutrophication, freshwater*	kg P eq	3,84E-02	3,94E-02	2,21E-04	2,73E-03	2,72E-03	0	2,02E-05	1,46E-04	2,39E-04	-1,46E-02
Eutrophication, marine	kg N eq	9,51E-02	9,75E-02	1,63E-03	1,17E-02	9,84E-03	0	1,49E-04	7,86E-04	3,91E-04	-3,13E-02
Eutrophication, terrestrial	mol N eq	2,50E+00	2,57E+00	1,76E-02	1,27E-01	1,50E-01	0	1,61E-03	4,41E-03	4,20E-03	-3,25E-01
Photochemical ozone formation	kg NMVOC eq	2,91E-01	2,98E-01	1,13E-02	3,69E-02	3,20E-02	0	1,03E-03	1,31E-03	1,54E-03	-1,08E-01
Resource use, minerals and metals*	kg Sb eq	1,80E-03	1,85E-03	1,06E-05	1,83E-05	1,20E-04	0	9,70E-07	6,69E-06	2,71E-07	-4,40E-04
Resource use, fossils*	MJ	9,83E+02	1,01E+03	4,59E+01	7,67E+01	1,12E+02	0	4,20E+00	2,80E+00	3,31E+00	-3,34E+02
Water use*	m^3 depriv.	3,01E+01	3,08E+01	2,59E-01	3,96E+00	3,39E+00	0	2,37E-02	6,06E-02	-1,72E+00	-9,31E+00

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

Table 166: Additional environmental impact indicators - FDMQ 120, 750x400 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	9,27E-06	9,50E-06	2,40E-07	9,08E-07	4,71E-07	0	2,20E-08	2,96E-08	2,38E-08	-2,97E-06
Human toxicity, non-cancer*	CTUh	1,58E-06	1,62E-06	2,97E-08	9,63E-08	7,16E-08	0	2,72E-09	1,08E-08	3,97E-09	-9,01E-07
Human toxicity, cancer*	CTUh	4,15E-06	4,25E-06	2,32E-08	2,66E-08	5,65E-08	0	2,12E-09	3,60E-09	8,07E-10	-3,32E-06
Land use*	Pt	6,69E+02	6,86E+02	2,77E+01	7,08E+01	2,38E+01	0	2,54E+00	1,46E+01	8,12E+00	-1,10E+02
Ionising radiation**	kBq U-235 eq	7,48E+00	7,67E+00	5,96E-02	4,77E-01	7,06E-01	0	5,45E-03	4,00E-02	4,43E-03	-9,83E-01
Ecotoxicity, freshwater	CTUe	1,81E+03	1,85E+03	1,25E+01	3,40E+01	6,58E+01	0	1,14E+00	5,67E+00	2,43E+00	-1,11E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 167: Parameters describing resource use - FDMQ 120, 750x400 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,48E+02	1,52E+02	7,88E-01	1,73E+01	9,70E+00	0	7,20E-02	5,25E-01	6,87E-02	-3,04E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,48E+02	1,52E+02	7,88E-01	1,73E+01	9,70E+00	0	7,20E-02	5,25E-01	6,87E-02	-3,04E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	9,83E+02	1,01E+03	4,59E+01	7,67E+01	1,12E+02	0	4,20E+00	2,80E+00	3,31E+00	-3,34E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	9,83E+02	1,01E+03	4,59E+01	7,67E+01	1,12E+02	0	4,20E+00	2,80E+00	3,31E+00	-3,34E+02
Use of secondary material	kg	7,45E+00	7,63E+00	2,13E-02	5,03E-02	2,12E+00	0	1,95E-03	5,34E-03	1,10E-03	-5,63E+00
Use of renewable secondary fuels	MJ, net calorific value	1,58E+00	1,62E+00	2,69E-04	3,87E-02	5,10E-03	0	2,46E-05	4,15E-04	1,99E-05	-3,57E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	7,37E-01	7,55E-01	6,38E-03	9,80E-02	8,38E-02	0	5,83E-04	1,56E-03	-3,99E-02	-2,40E-01

Table 168: Other environmental information describing waste categories - FDMQ 120, 750x400 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	1,63E+01	1,67E+01	6,70E-02	5,61E-01	7,48E-01	0	6,12E-03	4,02E-02	5,59E-03	-1,25E+01
Non-hazardous waste disposed	kg	2,89E+02	2,96E+02	1,42E+00	1,85E+01	2,07E+01	0	1,29E-01	2,26E+00	5,08E+01	-1,47E+02
Radioactive waste disposed/stored	kg	1,83E-03	1,88E-03	1,48E-05	1,11E-04	1,72E-04	0	1,35E-06	1,03E-05	1,08E-06	-2,46E-04

Table 169: Environmental information describing output flows - FDMQ 120, 750x400 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	3,97E+00	4,07E+00	3,49E-04	1,19E-02	1,70E-02	0	3,19E-05	1,64E+01	4,27E-05	-6,70E-03
Materials for energy recovery	kg	3,30E-04	3,39E-04	2,96E-06	2,76E-04	2,12E-05	0	2,70E-07	4,94E-07	8,22E-08	-1,26E-04
Exported energy, electricity	MJ	4,06E-01	4,16E-01	7,90E-03	6,68E-02	6,59E-02	0	7,22E-04	6,36E-03	1,38E-03	-7,84E-02
Exported energy, heat	MJ	3,83E-01	3,92E-01	1,14E-02	3,68E-01	3,55E-02	0	1,05E-03	6,90E-04	3,08E-03	-1,94E-01

Table 170: Core environmental impact indicators - FDMQ 120, 750x400 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	8,05E+01	8,25E+01	3,32E+00	1,73E+01	1,05E+01	2,33E+02	3,04E-01	7,93E-01	1,45E-01	-3,08E+01
Climate change - Biogenic	kg CO2 eq	-3,93E+00	-4,02E+00	2,24E-03	9,43E-01	1,22E-02	2,74E+00	2,05E-04	3,93E+00	8,24E-04	-2,87E-02
Climate change - Land use and LU change	kg CO2 eq	7,41E-02	7,60E-02	1,10E-03	4,13E-03	1,00E-02	3,81E-01	1,01E-04	3,18E-04	3,51E-05	-1,50E-02
Climate change	kg CO2 eq	7,66E+01	7,85E+01	3,32E+00	1,83E+01	1,05E+01	2,37E+02	3,04E-01	1,31E+00	1,46E-01	-3,08E+01
GWP-GHG	kg CO2 eq	7,97E+01	8,17E+01	3,32E+00	1,72E+01	1,04E+01	2,35E+02	2,21E-01	1,30E+00	1,42E-01	-3,01E+01
Ozone depletion	kg CFC11 eq	1,20E-06	1,23E-06	6,60E-08	4,09E-08	1,93E-07	1,68E-06	6,04E-09	2,87E-09	4,53E-09	-1,46E-07
Acidification	mol H+ eq	7,80E-01	7,99E-01	6,92E-03	6,11E-02	5,19E-02	1,03E+00	6,32E-04	1,90E-03	1,60E-03	-1,28E-01
Eutrophication, freshwater*	kg P eq	4,47E-02	4,58E-02	2,25E-04	2,77E-03	2,77E-03	3,54E-01	2,06E-05	1,50E-04	2,43E-04	-1,26E-02
Eutrophication, marine	kg N eq	1,02E-01	1,05E-01	1,66E-03	1,19E-02	1,00E-02	2,25E-01	1,52E-04	8,53E-04	3,98E-04	-2,89E-02
Eutrophication, terrestrial	mol N eq	2,55E+00	2,62E+00	1,79E-02	1,30E-01	1,53E-01	1,67E+00	1,64E-03	5,38E-03	4,27E-03	-2,97E-01
Photochemical ozone formation	kg NMVOC eq	3,18E-01	3,26E-01	1,15E-02	3,75E-02	3,25E-02	4,90E-01	1,05E-03	1,51E-03	1,56E-03	-9,96E-02
Resource use, minerals and metals*	kg Sb eq	2,55E-03	2,62E-03	1,08E-05	1,86E-05	1,22E-04	1,62E-03	9,86E-07	6,79E-06	2,75E-07	-2,00E-04
Resource use, fossils*	MJ	1,04E+03	1,06E+03	4,67E+01	7,80E+01	1,14E+02	4,06E+03	4,27E+00	3,10E+00	3,36E+00	-3,14E+02
Water use*	m^3 depriv.	3,26E+01	3,34E+01	2,63E-01	4,03E+00	3,45E+00	1,08E+02	2,41E-02	7,90E-02	-1,75E+00	-8,55E+00

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Table 171: Additional environmental impact indicators - FDMQ 120, 750x400 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	9,66E-06	9,90E-06	2,45E-07	9,24E-07	4,79E-07	2,48E-06	2,24E-08	3,19E-08	2,43E-08	-2,78E-06
Human toxicity, non-cancer*	CTUh	2,24E-06	2,30E-06	3,02E-08	9,79E-08	7,28E-08	2,70E-06	2,76E-09	1,71E-08	4,04E-09	-6,88E-07
Human toxicity, cancer*	CTUh	4,23E-06	4,34E-06	2,36E-08	2,71E-08	5,75E-08	3,51E-07	2,16E-09	3,97E-09	8,21E-10	-3,15E-06
Land use*	Pt	7,05E+02	7,22E+02	2,82E+01	7,21E+01	2,43E+01	4,60E+02	2,58E+00	1,47E+01	8,26E+00	-9,91E+01
Ionising radiation**	kBq U-235 eq	7,78E+00	7,97E+00	6,06E-02	4,85E-01	7,18E-01	1,06E+02	5,54E-03	4,00E-02	4,51E-03	-9,00E-01
Ecotoxicity, freshwater	CTUe	1,90E+03	1,95E+03	1,27E+01	3,46E+01	6,69E+01	8,94E+02	1,16E+00	9,48E+00	2,47E+00	-1,03E+03

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Table 172: Parameters describing resource use - FDMQ 120, 750x400 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,56E+02	1,60E+02	8,02E-01	1,76E+01	9,87E+00	3,12E+02	7,33E-02	5,65E-01	6,99E-02	-2,81E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,56E+02	1,60E+02	8,02E-01	1,76E+01	9,87E+00	3,12E+02	7,33E-02	5,65E-01	6,99E-02	-2,81E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,04E+03	1,06E+03	4,67E+01	7,80E+01	1,14E+02	4,06E+03	4,27E+00	3,10E+00	3,36E+00	-3,14E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,04E+03	1,06E+03	4,67E+01	7,80E+01	1,14E+02	4,06E+03	4,27E+00	3,10E+00	3,36E+00	-3,14E+02
Use of secondary material	kg	7,62E+00	7,81E+00	2,17E-02	5,12E-02	2,15E+00	3,93E-01	1,98E-03	5,65E-03	1,12E-03	-6,83E+00
Use of renewable secondary fuels	MJ, net calorific value	1,60E+00	1,64E+00	2,74E-04	3,93E-02	5,19E-03	3,39E-03	2,51E-05	6,59E-04	2,02E-05	-3,33E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	7,99E-01	8,19E-01	6,49E-03	9,96E-02	8,52E-02	2,58E+00	5,93E-04	2,00E-03	-4,06E-02	-2,20E-01

Table 173: Other environmental information describing waste categories - FDMQ 120, 750x400 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	1,74E+01	1,79E+01	6,82E-02	5,70E-01	7,61E-01	7,13E+00	6,23E-03	7,67E-02	5,69E-03	-1,18E+01
Non-hazardous waste disposed	kg	3,15E+02	3,23E+02	1,44E+00	1,88E+01	2,11E+01	1,74E+03	1,32E-01	2,35E+00	5,16E+01	-1,35E+02
Radioactive waste disposed/ stored	kg	1,91E-03	1,95E-03	1,51E-05	1,12E-04	1,75E-04	2,54E-02	1,38E-06	1,02E-05	1,10E-06	-2,25E-04

Table 174: Environmental information describing output flows - FDMQ 120, 750x400 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	4,05E+00	4,15E+00	3,55E-04	1,21E-02	1,73E-02	2,36E-01	3,25E-05	1,58E+01	4,35E-05	-1,51E+00
Materials for energy recovery	kg	3,40E-04	3,48E-04	3,01E-06	2,81E-04	2,16E-05	4,03E-05	2,75E-07	5,55E-07	8,36E-08	-1,18E-04
Exported energy, electricity	MJ	4,27E-01	4,37E-01	8,04E-03	6,79E-02	6,71E-02	2,22E+00	7,35E-04	6,26E-03	1,40E-03	-7,30E-02
Exported energy, heat	MJ	4,07E-01	4,17E-01	1,16E-02	3,74E-01	3,62E-02	5,34E-01	1,06E-03	8,04E-04	3,13E-03	-1,71E-01

Table 175: Core environmental impact indicators - FDMQ 120, 1500x800 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	1,58E+02	1,62E+02	8,49E+00	3,01E+01	1,76E+01	0	7,76E-01	1,80E+00	1,36E+00	-5,66E+01
Climate change - Biogenic	kg CO2 eq	-1,01E+01	-1,04E+01	5,73E-03	1,75E+00	2,25E-02	0	5,24E-04	1,01E+01	7,71E-03	-5,34E-02
Climate change - Land use and LU change	kg CO2 eq	1,41E-01	1,44E-01	2,82E-03	7,66E-03	1,89E-02	0	2,58E-04	1,35E-03	3,29E-04	-2,77E-02
Climate change	kg CO2 eq	1,48E+02	1,51E+02	8,50E+00	3,18E+01	1,76E+01	0	7,77E-01	4,26E+00	1,36E+00	-5,67E+01
GWP-GHG	kg CO2 eq	1,56E+02	1,60E+02	8,50E+00	2,99E+01	1,75E+01	0	7,71E-01	3,09E+00	1,35E+00	-5,54E+01
Ozone depletion	kg CFC11 eq	2,65E-06	2,72E-06	1,69E-07	7,51E-08	3,63E-07	0	1,54E-08	1,14E-08	4,24E-08	-2,69E-07
Acidification	mol H+ eq	1,32E+00	1,35E+00	1,77E-02	1,13E-01	9,75E-02	0	1,62E-03	7,52E-03	1,49E-02	-2,43E-01
Eutrophication, freshwater*	kg P eq	8,05E-02	8,25E-02	5,75E-04	5,15E-03	5,22E-03	0	5,26E-05	6,64E-04	2,27E-03	-2,37E-02
Eutrophication, marine	kg N eq	1,99E-01	2,04E-01	4,25E-03	2,17E-02	1,84E-02	0	3,88E-04	3,55E-03	3,72E-03	-5,34E-02
Eutrophication, terrestrial	mol N eq	4,74E+00	4,86E+00	4,58E-02	2,38E-01	2,86E-01	0	4,19E-03	1,99E-02	4,00E-02	-5,50E-01
Photochemical ozone formation	kg NMVOC eq	6,17E-01	6,33E-01	2,94E-02	6,91E-02	6,07E-02	0	2,69E-03	5,90E-03	1,46E-02	-1,84E-01
Resource use, minerals and metals*	kg Sb eq	2,95E-03	3,02E-03	2,76E-05	3,45E-05	2,30E-04	0	2,52E-06	3,03E-05	2,58E-06	-4,68E-04
Resource use, fossils*	MJ	2,12E+03	2,17E+03	1,19E+02	1,45E+02	2,15E+02	0	1,09E+01	1,27E+01	3,15E+01	-5,77E+02
Water use*	m^3 depriv.	6,42E+01	6,58E+01	6,74E-01	7,48E+00	6,50E+00	0	6,16E-02	2,71E-01	-1,64E+01	-1,58E+01

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Table 176: Additional environmental impact indicators - FDMQ 120, 1500x800 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	1,78E-05	1,82E-05	6,25E-07	1,71E-06	9,01E-07	0	5,72E-08	1,34E-07	2,27E-07	-5,12E-06
Human toxicity, non-cancer*	CTUh	2,71E-06	2,78E-06	7,73E-08	1,76E-07	1,31E-07	0	7,07E-09	4,89E-08	3,78E-08	-1,34E-06
Human toxicity, cancer*	CTUh	7,29E-06	7,48E-06	6,03E-08	4,98E-08	1,08E-07	0	5,51E-09	1,63E-08	7,69E-09	-5,78E-06
Land use*	Pt	1,60E+03	1,64E+03	7,21E+01	1,34E+02	4,53E+01	0	6,59E+00	6,60E+01	7,73E+01	-1,84E+02
Ionising radiation**	kBq U-235 eq	1,77E+01	1,82E+01	1,55E-01	9,01E-01	1,35E+00	0	1,42E-02	1,81E-01	4,22E-02	-1,67E+00
Ecotoxicity, freshwater	CTUe	3,21E+03	3,29E+03	3,25E+01	5,68E+01	1,18E+02	0	2,97E+00	2,55E+01	2,32E+01	-1,91E+03

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Table 177: Parameters describing resource use - FDMQ 120, 1500x800 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,45E+02	3,54E+02	2,05E+00	3,27E+01	1,86E+01	0	1,87E-01	2,38E+00	6,55E-01	-5,19E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,45E+02	3,54E+02	2,05E+00	3,27E+01	1,86E+01	0	1,87E-01	2,38E+00	6,55E-01	-5,19E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,12E+03	2,17E+03	1,19E+02	1,45E+02	2,15E+02	0	1,09E+01	1,27E+01	3,15E+01	-5,77E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,12E+03	2,17E+03	1,19E+02	1,45E+02	2,15E+02	0	1,09E+01	1,27E+01	3,15E+01	-5,77E+02
Use of secondary material	kg	1,35E+01	1,38E+01	5,54E-02	9,48E-02	4,06E+00	0	5,07E-03	2,42E-02	1,05E-02	-9,78E+00
Use of renewable secondary fuels	MJ, net calorific value	4,09E+00	4,20E+00	7,01E-04	7,32E-02	9,78E-03	0	6,41E-05	1,88E-03	1,89E-04	-6,14E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,56E+00	1,60E+00	1,66E-02	1,85E-01	1,61E-01	0	1,52E-03	6,97E-03	-3,80E-01	-4,08E-01

Table 178: Other environmental information describing waste categories - FDMQ 120, 1500x800 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	2,90E+01	2,98E+01	1,74E-01	1,02E+00	1,40E+00	0	1,59E-02	1,81E-01	5,33E-02	-2,16E+01
Non-hazardous waste disposed	kg	5,81E+02	5,96E+02	3,68E+00	3,10E+01	3,57E+01	0	3,36E-01	1,02E+01	4,83E+02	-2,50E+02
Radioactive waste disposed/stored	kg	4,33E-03	4,44E-03	3,85E-05	2,09E-04	3,31E-04	0	3,52E-06	4,65E-05	1,03E-05	-4,17E-04

Table 179: Environmental information describing output flows - FDMQ 120, 1500x800 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,03E+01	1,06E+01	9,08E-04	1,32E-02	2,32E-02	0	8,30E-05	7,44E+01	4,07E-04	-1,10E-02
Materials for energy recovery	kg	7,13E-04	7,31E-04	7,69E-06	5,22E-04	4,07E-05	0	7,03E-07	2,24E-06	7,83E-07	-2,18E-04
Exported energy, electricity	MJ	8,85E-01	9,08E-01	2,05E-02	1,26E-01	1,27E-01	0	1,88E-03	2,88E-02	1,31E-02	-1,35E-01
Exported energy, heat	MJ	7,09E-01	7,27E-01	2,97E-02	6,95E-01	6,72E-02	0	2,72E-03	3,12E-03	2,93E-02	-3,20E-01

Table 180: Core environmental impact indicators - FDMQ 120, 1500x800 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	1,72E+02	1,76E+02	8,73E+00	3,09E+01	1,81E+01	3,52E+02	7,98E-01	1,51E+00	5,20E-01	-5,50E+01
Climate change - Biogenic	kg CO2 eq	-1,01E+01	-1,04E+01	5,90E-03	1,80E+00	2,32E-02	4,12E+00	5,39E-04	1,01E+01	2,96E-03	-5,13E-02
Climate change - Land use and LU change	kg CO2 eq	1,65E-01	1,69E-01	2,90E-03	7,88E-03	1,94E-02	5,74E-01	2,66E-04	5,69E-04	1,26E-04	-2,67E-02
Climate change	kg CO2 eq	1,62E+02	1,66E+02	8,74E+00	3,27E+01	1,81E+01	3,57E+02	7,99E-01	2,43E+00	5,23E-01	-5,51E+01
GWP-GHG	kg CO2 eq	1,70E+02	1,75E+02	8,74E+00	3,07E+01	1,80E+01	3,54E+02	5,80E-01	2,40E+00	5,11E-01	-5,38E+01
Ozone depletion	kg CFC11 eq	2,78E-06	2,85E-06	1,74E-07	7,73E-08	3,74E-07	2,54E-06	1,59E-08	5,17E-09	1,63E-08	-2,60E-07
Acidification	mol H+ eq	1,54E+00	1,57E+00	1,82E-02	1,16E-01	1,00E-01	1,56E+00	1,66E-03	3,43E-03	5,73E-03	-2,29E-01
Eutrophication, freshwater*	kg P eq	9,75E-02	9,99E-02	5,92E-04	5,30E-03	5,37E-03	5,34E-01	5,41E-05	2,67E-04	8,72E-04	-2,25E-02
Eutrophication, marine	kg N eq	2,19E-01	2,25E-01	4,37E-03	2,23E-02	1,89E-02	3,39E-01	3,99E-04	1,53E-03	1,43E-03	-5,16E-02
Eutrophication, terrestrial	mol N eq	4,97E+00	5,09E+00	4,71E-02	2,45E-01	2,94E-01	2,52E+00	4,31E-03	9,79E-03	1,53E-02	-5,31E-01
Photochemical ozone formation	kg NMVOC eq	6,93E-01	7,10E-01	3,02E-02	7,11E-02	6,25E-02	7,38E-01	2,76E-03	2,72E-03	5,62E-03	-1,78E-01
Resource use, minerals and metals*	kg Sb eq	4,97E-03	5,10E-03	2,84E-05	3,55E-05	2,36E-04	2,44E-03	2,59E-06	1,20E-05	9,89E-07	-3,57E-04
Resource use, fossils*	MJ	2,13E+03	2,19E+03	1,23E+02	1,49E+02	2,21E+02	6,11E+03	1,12E+01	5,57E+00	1,21E+01	-5,61E+02
Water use*	m^3 depriv.	6,70E+01	6,87E+01	6,93E-01	7,70E+00	6,68E+00	1,62E+02	6,33E-02	1,45E-01	-6,28E+00	-1,53E+01

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

Table 181: Additional environmental impact indicators - FDMQ 120, 1500x800 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	1,90E-05	1,95E-05	6,43E-07	1,76E-06	9,27E-07	3,74E-06	5,88E-08	5,70E-08	8,72E-08	-4,97E-06
Human toxicity, non-cancer*	CTUh	4,45E-06	4,56E-06	7,95E-08	1,81E-07	1,34E-07	4,07E-06	7,27E-09	3,20E-08	1,45E-08	-1,23E-06
Human toxicity, cancer*	CTUh	7,75E-06	7,94E-06	6,20E-08	5,13E-08	1,11E-07	5,29E-07	5,67E-09	7,13E-09	2,95E-09	-5,63E-06
Land use*	Pt	1,71E+03	1,75E+03	7,42E+01	1,37E+02	4,66E+01	6,93E+02	6,78E+00	2,60E+01	2,97E+01	-1,77E+02
Ionising radiation**	kBq U-235 eq	1,87E+01	1,92E+01	1,59E-01	9,26E-01	1,39E+00	1,59E+02	1,46E-02	7,07E-02	1,62E-02	-1,61E+00
Ecotoxicity, freshwater	CTUe	3,54E+03	3,63E+03	3,35E+01	5,84E+01	1,22E+02	1,35E+03	3,06E+00	1,78E+01	8,89E+00	-1,85E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 182: Parameters describing resource use - FDMQ 120, 1500x800 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,69E+02	3,79E+02	2,11E+00	3,36E+01	1,91E+01	4,70E+02	1,93E-01	1,01E+00	2,51E-01	-5,02E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,69E+02	3,79E+02	2,11E+00	3,36E+01	1,91E+01	4,70E+02	1,93E-01	1,01E+00	2,51E-01	-5,02E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,13E+03	2,19E+03	1,23E+02	1,49E+02	2,21E+02	6,11E+03	1,12E+01	5,57E+00	1,21E+01	-5,61E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,13E+03	2,19E+03	1,23E+02	1,49E+02	2,21E+02	6,11E+03	1,12E+01	5,57E+00	1,21E+01	-5,61E+02
Use of secondary material	kg	1,32E+01	1,35E+01	5,70E-02	9,75E-02	4,18E+00	5,93E-01	5,21E-03	1,01E-02	4,02E-03	-1,26E+01
Use of renewable secondary fuels	MJ, net calorific value	4,21E+00	4,31E+00	7,21E-04	7,52E-02	1,01E-02	5,11E-03	6,59E-05	1,23E-03	7,27E-05	-5,95E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,65E+00	1,69E+00	1,71E-02	1,90E-01	1,65E-01	3,89E+00	1,56E-03	3,66E-03	-1,46E-01	-3,94E-01

Table 183: Other environmental information describing waste categories - FDMQ 120, 1500x800 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	3,17E+01	3,24E+01	1,79E-01	1,05E+00	1,44E+00	1,07E+01	1,64E-02	1,46E-01	2,04E-02	-2,10E+01
Non-hazardous waste disposed	kg	5,96E+02	6,11E+02	3,79E+00	3,19E+01	3,67E+01	2,62E+03	3,46E-01	4,19E+00	1,86E+02	-2,41E+02
Radioactive waste disposed/ stored	kg	4,40E-03	4,51E-03	3,96E-05	2,15E-04	3,40E-04	3,83E-02	3,62E-06	1,81E-05	3,96E-06	-4,02E-04

Table 184: Environmental information describing output flows - FDMQ 120, 1500x800 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,06E+01	1,09E+01	9,34E-04	1,36E-02	2,38E-02	3,56E-01	8,53E-05	2,78E+01	1,56E-04	-3,11E+00
Materials for energy recovery	kg	7,15E-04	7,32E-04	7,91E-06	5,37E-04	4,18E-05	6,08E-05	7,23E-07	9,99E-07	3,00E-07	-2,11E-04
Exported energy, electricity	MJ	8,94E-01	9,17E-01	2,11E-02	1,30E-01	1,30E-01	3,35E+00	1,93E-03	1,11E-02	5,03E-03	-1,30E-01
Exported energy, heat	MJ	6,94E-01	7,11E-01	3,06E-02	7,15E-01	6,92E-02	8,04E-01	2,80E-03	1,45E-03	1,13E-02	-3,06E-01

Table 185: Core environmental impact indicators - FDMQ, 150x150/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	3,12E+01	3,13E+01	9,88E-01	7,55E+00	4,39E+00	0	9,03E-02	5,54E-01	1,21E-02	-1,53E+01
Climate change - Biogenic	kg CO2 eq	-1,14E+00	-1,14E+00	6,67E-04	5,85E-02	3,35E-03	0	6,10E-05	1,14E+00	6,90E-05	-1,94E-02
Climate change - Land use and LU change	kg CO2 eq	2,46E-02	2,46E-02	3,29E-04	1,51E-03	2,40E-03	0	3,00E-05	4,44E-05	2,94E-06	-7,61E-03
Climate change	kg CO2 eq	3,01E+01	3,02E+01	9,89E-01	7,61E+00	4,39E+00	0	9,04E-02	5,54E-01	1,22E-02	-1,53E+01
GWP-GHG	kg CO2 eq	3,09E+01	3,00E+01	9,89E-01	7,15E+00	4,36E+00	0	8,98E-02	4,02E-01	1,20E-02	-1,50E+01
Ozone depletion	kg CFC11 eq	4,52E-07	4,52E-07	1,96E-08	2,32E-08	4,69E-08	0	1,80E-09	7,73E-09	3,79E-10	-7,33E-08
Acidification	mol H+ eq	3,08E-01	3,08E-01	2,06E-03	1,62E-02	1,29E-02	0	1,88E-04	4,56E-03	1,34E-04	-7,07E-02
Eutrophication, freshwater*	kg P eq	1,51E-02	1,52E-02	6,69E-05	5,72E-04	6,68E-04	0	6,12E-06	1,49E-05	2,03E-05	-6,81E-03
Eutrophication, marine	kg N eq	3,85E-02	3,86E-02	4,94E-04	4,96E-03	2,80E-03	0	4,52E-05	2,11E-03	3,33E-05	-1,47E-02
Eutrophication, terrestrial	mol N eq	1,09E+00	1,09E+00	5,33E-03	5,18E-02	3,87E-02	0	4,88E-04	2,31E-02	3,58E-04	-1,52E-01
Photochemical ozone formation	kg NMVOC eq	1,17E-01	1,18E-01	3,42E-03	1,49E-02	8,35E-03	0	3,13E-04	6,90E-03	1,31E-04	-5,07E-02
Resource use, minerals and metals*	kg Sb eq	8,16E-04	8,17E-04	3,21E-06	1,60E-05	2,92E-05	0	2,93E-07	1,81E-07	2,31E-08	-2,01E-04
Resource use, fossils*	MJ	3,95E+02	3,96E+02	1,39E+01	2,88E+01	2,77E+01	0	1,27E+00	6,60E+00	2,82E-01	-1,55E+02
Water use*	m^3 depriv.	1,19E+01	1,20E+01	7,84E-02	9,09E-01	8,29E-01	0	7,17E-03	2,18E-02	-1,46E-01	-4,27E+00

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Table 186: Additional environmental impact indicators - FDMQ, 150x150/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	4,04E-06	4,05E-06	7,28E-08	1,57E-07	1,17E-07	0	6,65E-09	1,29E-07	2,03E-09	-1,39E-06
Human toxicity, non-cancer*	CTUh	7,15E-07	7,17E-07	9,00E-09	3,90E-08	2,30E-08	0	8,22E-10	1,10E-09	3,38E-10	-4,18E-07
Human toxicity, cancer*	CTUh	1,95E-06	1,96E-06	7,02E-09	6,96E-09	1,42E-08	0	6,42E-10	1,98E-09	6,88E-11	-1,56E-06
Land use*	Pt	2,30E+02	2,30E+02	8,40E+00	1,70E+01	6,15E+00	0	7,67E-01	4,70E-01	6,92E-01	-5,14E+01
Ionising radiation**	kBq U-235 eq	2,58E+00	2,58E+00	1,80E-02	7,02E-02	1,72E-01	0	1,65E-03	2,98E-03	3,77E-04	-4,63E-01
Ecotoxicity, freshwater	CTUe	8,37E+02	8,40E+02	3,79E+00	1,87E+01	2,25E+01	0	3,46E-01	1,07E+00	2,07E-01	-5,21E+02

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Table 187: Parameters describing resource use - FDMQ, 150x150/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,27E+01	5,28E+01	2,39E-01	2,48E+00	2,38E+00	0	2,18E-02	4,12E-02	5,86E-03	-1,42E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,27E+01	5,28E+01	2,39E-01	2,48E+00	2,38E+00	0	2,18E-02	4,12E-02	5,86E-03	-1,42E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,96E+02	3,97E+02	1,39E+01	2,88E+01	2,77E+01	0	1,27E+00	6,60E+00	2,82E-01	-1,55E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,96E+02	3,97E+02	1,39E+01	2,88E+01	2,77E+01	0	1,27E+00	6,60E+00	2,82E-01	-1,55E+02
Use of secondary material	kg	3,42E+00	3,44E+00	6,45E-03	8,19E-03	5,15E-01	0	5,90E-04	2,75E-03	9,37E-05	-2,63E+00
Use of renewable secondary fuels	MJ, net calorific value	4,79E-01	4,79E-01	8,16E-05	6,40E-03	1,25E-03	0	7,45E-06	1,00E-05	1,70E-06	-1,64E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,95E-01	2,95E-01	1,93E-03	2,21E-02	2,05E-02	0	1,77E-04	5,29E-04	-3,40E-03	-1,10E-01

Table 188: Other environmental information describing waste categories - FDMQ, 150x150/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	7,59E+00	7,63E+00	2,03E-02	1,71E-01	2,14E-01	0	1,85E-03	8,54E-03	4,77E-04	-5,84E+00
Non-hazardous waste disposed	kg	1,21E+02	1,22E+02	4,28E-01	7,32E+00	8,40E+00	0	3,92E-02	1,24E-01	4,33E+00	-6,68E+01
Radioactive waste disposed/stored	kg	6,30E-04	6,30E-04	4,48E-06	1,73E-05	4,21E-05	0	4,10E-07	7,31E-07	9,23E-08	-1,12E-04

Table 189: Environmental information describing output flows - FDMQ, 150x150/500 mm, manual

Impact catergory	Unit.	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,20E+00	1,20E+00	1,06E-04	1,08E-02	1,20E-02	0	9,66E-06	2,21E-05	3,64E-06	-2,90E-03
Materials for energy recovery	kg	1,29E-04	1,29E-04	8,95E-07	6,87E-06	5,21E-06	0	8,18E-08	9,22E-08	7,00E-09	-5,84E-05
Exported energy, electricity	MJ	1,55E-01	1,55E-01	2,39E-03	6,42E-03	1,61E-02	0	2,19E-04	3,01E-04	1,17E-04	-3,61E-02
Exported energy, heat	MJ	1,69E-01	1,69E-01	3,46E-03	1,04E-02	9,46E-03	0	3,16E-04	1,62E-04	2,63E-04	-8,46E-02

Table 190: Core environmental impact indicators - FDMQ, 150x150/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	3,39E+01	3,40E+01	9,90E-01	7,57E+00	4,40E+00	1,22E+02	9,05E-02	7,59E-01	1,21E-02	-1,35E+01
Climate change - Biogenic	kg CO2 eq	-1,04E+00	-1,04E+00	6,68E-04	5,86E-02	3,36E-03	1,43E+00	6,11E-05	1,04E+00	6,92E-05	-1,30E-02
Climate change - Land use and LU change	kg CO2 eq	3,11E-02	3,12E-02	3,29E-04	1,52E-03	2,41E-03	2,00E-01	3,01E-05	6,10E-05	2,95E-06	-6,64E-03
Climate change	kg CO2 eq	3,28E+01	3,29E+01	9,91E-01	7,63E+00	4,40E+00	1,24E+02	9,06E-02	7,58E-01	1,22E-02	-1,35E+01
GWP-GHG	kg CO2 eq	3,35E+01	3,27E+01	9,91E-01	7,17E+00	4,37E+00	1,23E+02	6,58E-02	7,48E-01	1,19E-02	-1,32E+01
Ozone depletion	kg CFC11 eq	4,67E-07	4,68E-07	1,97E-08	2,33E-08	4,70E-08	8,84E-07	1,80E-09	7,12E-09	3,80E-10	-6,42E-08
Acidification	mol H+ eq	3,60E-01	3,61E-01	2,06E-03	1,62E-02	1,29E-02	5,42E-01	1,89E-04	4,23E-03	1,34E-04	-5,62E-02
Eutrophication, freshwater*	kg P eq	1,95E-02	1,96E-02	6,71E-05	5,73E-04	6,69E-04	1,86E-01	6,13E-06	1,95E-05	2,04E-05	-5,49E-03
Eutrophication, marine	kg N eq	4,27E-02	4,28E-02	4,95E-04	4,97E-03	2,81E-03	1,18E-01	4,53E-05	1,93E-03	3,34E-05	-1,27E-02
Eutrophication, terrestrial	mol N eq	1,11E+00	1,11E+00	5,34E-03	5,19E-02	3,88E-02	8,77E-01	4,89E-04	2,12E-02	3,59E-04	-1,31E-01
Photochemical ozone formation	kg NMVOC eq	1,34E-01	1,35E-01	3,43E-03	1,50E-02	8,36E-03	2,57E-01	3,13E-04	6,26E-03	1,31E-04	-4,38E-02
Resource use, minerals and metals*	kg Sb eq	1,42E-03	1,42E-03	3,22E-06	1,60E-05	2,93E-05	8,49E-04	2,94E-07	4,02E-07	2,31E-08	-8,72E-05
Resource use, fossils*	MJ	3,70E+02	3,71E+02	1,39E+01	2,89E+01	2,78E+01	2,13E+03	1,27E+00	6,11E+00	2,82E-01	-1,37E+02
Water use*	m^3 depriv.	1,20E+01	1,20E+01	7,86E-02	9,11E-01	8,31E-01	5,65E+01	7,18E-03	3,34E-02	-1,47E-01	-3,73E+00

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

Table 191: Additional environmental impact indicators - FDMQ, 150x150/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	4,20E-06	4,21E-06	7,29E-08	1,57E-07	1,18E-07	1,30E-06	6,67E-09	1,16E-07	2,04E-09	-1,22E-06
Human toxicity, non-cancer*	CTUh	1,22E-06	1,22E-06	9,02E-09	3,90E-08	2,31E-08	1,41E-06	8,24E-10	5,71E-09	3,39E-10	-3,01E-07
Human toxicity, cancer*	CTUh	1,95E-06	1,96E-06	7,03E-09	6,97E-09	1,42E-08	1,84E-07	6,43E-10	2,11E-09	6,89E-11	-1,37E-06
Land use*	Pt	2,49E+02	2,50E+02	8,41E+00	1,70E+01	6,16E+00	2,41E+02	7,69E-01	8,64E-01	6,93E-01	-4,36E+01
Ionising radiation**	kBq U-235 eq	2,71E+00	2,71E+00	1,81E-02	7,03E-02	1,73E-01	5,55E+01	1,65E-03	3,62E-03	3,78E-04	-3,94E-01
Ecotoxicity, freshwater	CTUe	8,84E+02	8,88E+02	3,79E+00	1,87E+01	2,25E+01	4,69E+02	3,47E-01	3,78E+00	2,08E-01	-4,51E+02

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 192: Parameters describing resource use - FDMQ, 150x150/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,70E+01	5,71E+01	2,39E-01	2,49E+00	2,38E+00	1,63E+02	2,19E-02	7,78E-02	5,87E-03	-1,23E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,70E+01	5,71E+01	2,39E-01	2,49E+00	2,38E+00	1,63E+02	2,19E-02	7,78E-02	5,87E-03	-1,23E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	3,71E+02	3,72E+02	1,39E+01	2,89E+01	2,78E+01	2,13E+03	1,27E+00	6,11E+00	2,82E-01	-1,37E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	3,71E+02	3,72E+02	1,39E+01	2,89E+01	2,78E+01	2,13E+03	1,27E+00	6,11E+00	2,82E-01	-1,37E+02
Use of secondary material	kg	3,05E+00	3,07E+00	6,46E-03	8,21E-03	5,16E-01	2,06E-01	5,91E-04	2,78E-03	9,39E-05	-2,32E+00
Use of renewable secondary fuels	MJ, net calorific value	4,80E-01	4,80E-01	8,17E-05	6,42E-03	1,25E-03	1,78E-03	7,47E-06	1,93E-04	1,70E-06	-1,45E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	3,02E-01	3,03E-01	1,94E-03	2,21E-02	2,06E-02	1,35E+00	1,77E-04	8,08E-04	-3,41E-03	-9,62E-02

Table 193: Other environmental information describing waste categories - FDMQ, 150x150/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	7,96E+00	7,99E+00	2,03E-02	1,71E-01	2,14E-01	3,74E+00	1,86E-03	3,44E-02	4,78E-04	-5,14E+00
Non-hazardous waste disposed	kg	1,15E+02	1,16E+02	4,29E-01	7,34E+00	8,42E+00	9,10E+02	3,92E-02	2,31E-01	4,33E+00	-5,89E+01
Radioactive waste disposed/stored	kg	6,06E-04	6,06E-04	4,49E-06	1,73E-05	4,22E-05	1,33E-02	4,10E-07	8,90E-07	9,25E-08	-9,82E-05

Table 194: Environmental information describing output flows - FDMQ, 150x150/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,20E+00	1,20E+00	1,06E-04	1,08E-02	1,20E-02	1,24E-01	9,68E-06	3,18E-04	3,65E-06	-2,56E-03
Materials for energy recovery	kg	1,20E-04	1,20E-04	8,97E-07	6,88E-06	5,22E-06	2,11E-05	8,20E-08	1,38E-07	7,02E-09	-5,16E-05
Exported energy, electricity	MJ	1,47E-01	1,47E-01	2,40E-03	6,43E-03	1,62E-02	1,16E+00	2,19E-04	3,56E-04	1,17E-04	-3,18E-02
Exported energy, heat	MJ	1,49E-01	1,49E-01	3,47E-03	1,04E-02	9,48E-03	2,80E-01	3,17E-04	2,41E-04	2,63E-04	-7,47E-02

Table 195: Core environmental impact indicators - FDMQ, 750x400/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	8,55E+01	8,78E+01	3,29E+00	1,83E+01	8,67E+00	0	3,01E-01	1,34E+00	1,18E-01	-3,90E+01
Climate change - Biogenic	kg CO2 eq	-3,84E+00	-3,93E+00	2,22E-03	1,82E-01	9,64E-03	0	2,03E-04	3,84E+00	6,73E-04	-3,64E-02
Climate change - Land use and LU change	kg CO2 eq	7,10E-02	7,28E-02	1,09E-03	4,69E-03	7,75E-03	0	1,00E-04	1,13E-04	2,87E-05	-1,90E-02
Climate change	kg CO2 eq	8,18E+01	8,39E+01	3,29E+00	1,85E+01	8,69E+00	0	3,01E-01	1,34E+00	1,19E-01	-3,90E+01
GWP-GHG	kg CO2 eq	8,47E+01	8,51E+01	3,29E+00	1,74E+01	8,62E+00	0	2,99E-01	9,74E-01	1,17E-01	-3,81E+01
Ozone depletion	kg CFC11 eq	1,26E-06	1,29E-06	6,54E-08	7,03E-08	1,50E-07	0	5,98E-09	1,98E-08	3,70E-09	-1,85E-07
Acidification	mol H+ eq	8,28E-01	8,49E-01	6,85E-03	4,93E-02	4,03E-02	0	6,26E-04	1,17E-02	1,30E-03	-1,62E-01
Eutrophication, freshwater*	kg P eq	4,29E-02	4,41E-02	2,23E-04	1,77E-03	2,14E-03	0	2,04E-05	3,79E-05	1,98E-04	-1,59E-02
Eutrophication, marine	kg N eq	1,07E-01	1,10E-01	1,64E-03	1,44E-02	7,86E-03	0	1,50E-04	5,41E-03	3,25E-04	-3,66E-02
Eutrophication, terrestrial	mol N eq	2,96E+00	3,04E+00	1,77E-02	1,56E-01	1,19E-01	0	1,62E-03	5,93E-02	3,49E-03	-3,76E-01
Photochemical ozone formation	kg NMVOC eq	3,25E-01	3,33E-01	1,14E-02	4,51E-02	2,53E-02	0	1,04E-03	1,77E-02	1,28E-03	-1,26E-01
Resource use, minerals and metals*	kg Sb eq	2,12E-03	2,17E-03	1,07E-05	4,96E-05	9,43E-05	0	9,76E-07	4,56E-07	2,25E-07	-2,53E-04
Resource use, fossils*	MJ	1,10E+03	1,12E+03	4,63E+01	8,88E+01	8,83E+01	0	4,23E+00	1,69E+01	2,75E+00	-3,97E+02
Water use*	m^3 depriv.	3,37E+01	3,46E+01	2,61E-01	2,83E+00	2,78E+00	0	2,38E-02	5,20E-02	-1,43E+00	-1,08E+01

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

Table 196: Additional environmental impact indicators - FDMQ, 750x400/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	1,09E-05	1,11E-05	2,42E-07	4,81E-07	3,72E-07	0	2,21E-08	3,31E-07	1,98E-08	-3,52E-06
Human toxicity, non-cancer*	CTUh	1,84E-06	1,88E-06	2,99E-08	1,06E-07	5,80E-08	0	2,74E-09	2,50E-09	3,30E-09	-8,72E-07
Human toxicity, cancer*	CTUh	4,98E-06	5,11E-06	2,33E-08	2,05E-08	4,46E-08	0	2,13E-09	5,07E-09	6,71E-10	-3,99E-06
Land use*	Pt	7,04E+02	7,22E+02	2,79E+01	5,22E+01	1,89E+01	0	2,55E+00	1,19E+00	6,75E+00	-1,26E+02
Ionising radiation**	kBq U-235 eq	8,04E+00	8,24E+00	6,00E-02	2,17E-01	5,56E-01	0	5,48E-03	7,59E-03	3,68E-03	-1,14E+00
Ecotoxicity, freshwater	CTUe	2,16E+03	2,22E+03	1,26E+01	4,02E+01	5,36E+01	0	1,15E+00	2,53E+00	2,02E+00	-1,31E+03

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 197: Parameters describing resource use - FDMQ, 750x400/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,58E+02	1,62E+02	7,94E-01	7,71E+00	7,64E+00	0	7,26E-02	1,04E-01	5,71E-02	-3,56E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,58E+02	1,62E+02	7,94E-01	7,71E+00	7,64E+00	0	7,26E-02	1,04E-01	5,71E-02	-3,56E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,10E+03	1,13E+03	4,63E+01	8,88E+01	8,83E+01	0	4,23E+00	1,69E+01	2,75E+00	-3,97E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,10E+03	1,13E+03	4,63E+01	8,88E+01	8,83E+01	0	4,23E+00	1,69E+01	2,75E+00	-3,97E+02
Use of secondary material	kg	8,84E+00	9,08E+00	2,15E-02	2,46E-02	1,67E+00	0	1,96E-03	7,03E-03	9,14E-04	-6,75E+00
Use of renewable secondary fuels	MJ, net calorific value	1,59E+00	1,63E+00	2,71E-04	2,00E-02	4,02E-03	0	2,48E-05	2,12E-05	1,65E-05	-4,22E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	8,29E-01	8,50E-01	6,43E-03	6,86E-02	6,60E-02	0	5,87E-04	1,27E-03	-3,32E-02	-2,79E-01

Table 198: Other environmental information describing waste categories - FDMQ, 750x400/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	1,94E+01	1,99E+01	6,75E-02	4,43E-01	5,98E-01	0	6,17E-03	2,01E-02	4,65E-03	-1,49E+01
Non-hazardous waste disposed	kg	3,30E+02	3,39E+02	1,42E+00	1,34E+01	1,73E+01	0	1,30E-01	2,81E-01	4,22E+01	-1,71E+02
Radioactive waste disposed/stored	kg	1,97E-03	2,02E-03	1,49E-05	5,35E-05	1,36E-04	0	1,36E-06	1,86E-06	9,00E-07	-2,85E-04

Table 199: Environmental information describing output flows - FDMQ, 750x400/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	4,00E+00	4,10E+00	3,51E-04	1,18E-02	1,56E-02	0	3,21E-05	4,99E-05	3,55E-05	-7,44E-03
Materials for energy recovery	kg	3,65E-04	3,74E-04	2,98E-06	2,13E-05	1,67E-05	0	2,72E-07	2,34E-07	6,83E-08	-1,50E-04
Exported energy, electricity	MJ	4,50E-01	4,61E-01	7,96E-03	1,98E-02	5,19E-02	0	7,27E-04	7,68E-04	1,14E-03	-9,25E-02
Exported energy, heat	MJ	4,40E-01	4,52E-01	1,15E-02	3,01E-02	2,73E-02	0	1,05E-03	4,08E-04	2,56E-03	-2,17E-01

Table 200: Core environmental impact indicators - FDMQ, 750x400/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	8,98E+01	9,22E+01	3,33E+00	1,86E+01	8,78E+00	2,33E+02	3,05E-01	1,66E+00	1,20E-01	-3,73E+01
Climate change - Biogenic	kg CO2 eq	-3,91E+00	-4,00E+00	2,25E-03	1,84E-01	9,77E-03	2,74E+00	2,06E-04	3,91E+00	6,82E-04	-3,55E-02
Climate change - Land use and LU change	kg CO2 eq	8,08E-02	8,28E-02	1,11E-03	4,76E-03	7,85E-03	3,81E-01	1,01E-04	1,37E-04	2,91E-05	-1,83E-02
Climate change	kg CO2 eq	8,60E+01	8,82E+01	3,33E+00	1,88E+01	8,80E+00	2,37E+02	3,05E-01	1,66E+00	1,21E-01	-3,74E+01
GWP-GHG	kg CO2 eq	8,89E+01	8,94E+01	3,33E+00	1,76E+01	8,74E+00	2,35E+02	2,21E-01	1,63E+00	1,18E-01	-3,65E+01
Ozone depletion	kg CFC11 eq	1,29E-06	1,33E-06	6,62E-08	7,12E-08	1,52E-07	1,68E-06	6,05E-09	1,93E-08	3,75E-09	-1,77E-07
Acidification	mol H+ eq	9,01E-01	9,24E-01	6,94E-03	5,00E-02	4,09E-02	1,03E+00	6,34E-04	1,14E-02	1,32E-03	-1,56E-01
Eutrophication, freshwater*	kg P eq	4,91E-02	5,03E-02	2,26E-04	1,79E-03	2,17E-03	3,54E-01	2,06E-05	4,48E-05	2,01E-04	-1,52E-02
Eutrophication, marine	kg N eq	1,14E-01	1,17E-01	1,67E-03	1,46E-02	7,97E-03	2,25E-01	1,52E-04	5,25E-03	3,29E-04	-3,52E-02
Eutrophication, terrestrial	mol N eq	3,01E+00	3,08E+00	1,80E-02	1,58E-01	1,20E-01	1,67E+00	1,64E-03	5,75E-02	3,54E-03	-3,61E-01
Photochemical ozone formation	kg NMVOC eq	3,50E-01	3,59E-01	1,15E-02	4,57E-02	2,57E-02	4,90E-01	1,05E-03	1,71E-02	1,29E-03	-1,21E-01
Resource use, minerals and metals*	kg Sb eq	2,86E-03	2,93E-03	1,08E-05	5,02E-05	9,55E-05	1,62E-03	9,89E-07	7,65E-07	2,28E-07	-2,42E-04
Resource use, fossils*	MJ	1,14E+03	1,17E+03	4,69E+01	9,00E+01	8,94E+01	4,06E+03	4,28E+00	1,65E+01	2,78E+00	-3,80E+02
Water use*	m^3 depriv.	3,60E+01	3,69E+01	2,64E-01	2,86E+00	2,81E+00	1,08E+02	2,42E-02	6,93E-02	-1,45E+00	-1,04E+01

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

Table 201: Additional environmental impact indicators - FDMQ, 750x400/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	1,12E-05	1,15E-05	2,45E-07	4,88E-07	3,76E-07	2,48E-06	2,24E-08	3,18E-07	2,01E-08	-3,38E-06
Human toxicity, non-cancer*	CTUh	2,48E-06	2,55E-06	3,03E-08	1,07E-07	5,88E-08	2,70E-06	2,77E-09	8,89E-09	3,34E-09	-8,35E-07
Human toxicity, cancer*	CTUh	5,06E-06	5,20E-06	2,37E-08	2,07E-08	4,52E-08	3,51E-07	2,16E-09	5,31E-09	6,80E-10	-3,82E-06
Land use*	Pt	7,37E+02	7,56E+02	2,83E+01	5,29E+01	1,91E+01	4,60E+02	2,59E+00	1,75E+00	6,84E+00	-1,21E+02
Ionising radiation**	kBq U-235 eq	8,33E+00	8,54E+00	6,08E-02	2,20E-01	5,63E-01	1,06E+02	5,56E-03	8,59E-03	3,73E-03	-1,09E+00
Ecotoxicity, freshwater	CTUe	2,25E+03	2,31E+03	1,28E+01	4,08E+01	5,43E+01	8,94E+02	1,17E+00	6,31E+00	2,05E+00	-1,25E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 202: Parameters describing resource use - FDMQ, 750x400/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,66E+02	1,70E+02	8,04E-01	7,81E+00	7,74E+00	3,12E+02	7,35E-02	1,56E-01	5,79E-02	-3,41E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,66E+02	1,70E+02	8,04E-01	7,81E+00	7,74E+00	3,12E+02	7,35E-02	1,56E-01	5,79E-02	-3,41E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,15E+03	1,18E+03	4,69E+01	9,00E+01	8,95E+01	4,06E+03	4,28E+00	1,65E+01	2,78E+00	-3,80E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,15E+03	1,18E+03	4,69E+01	9,00E+01	8,95E+01	4,06E+03	4,28E+00	1,65E+01	2,78E+00	-3,80E+02
Use of secondary material	kg	9,02E+00	9,27E+00	2,17E-02	2,49E-02	1,69E+00	3,93E-01	1,99E-03	7,18E-03	9,26E-04	-6,46E+00
Use of renewable secondary fuels	MJ, net calorific value	1,61E+00	1,65E+00	2,75E-04	2,02E-02	4,07E-03	3,39E-03	2,51E-05	2,73E-04	1,68E-05	-4,03E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	8,84E-01	9,07E-01	6,51E-03	6,95E-02	6,69E-02	2,58E+00	5,95E-04	1,68E-03	-3,36E-02	-2,67E-01

Table 203: Other environmental information describing waste categories - FDMQ, 750x400/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	2,06E+01	2,12E+01	6,84E-02	4,49E-01	6,06E-01	7,13E+00	6,25E-03	5,60E-02	4,71E-03	-1,43E+01
Non-hazardous waste disposed	kg	3,56E+02	3,65E+02	1,44E+00	1,36E+01	1,75E+01	1,74E+03	1,32E-01	4,38E-01	4,27E+01	-1,64E+02
Radioactive waste disposed/stored	kg	2,04E-03	2,09E-03	1,51E-05	5,42E-05	1,38E-04	2,54E-02	1,38E-06	2,11E-06	9,12E-07	-2,72E-04

Table 204: Environmental information describing output flows - FDMQ, 750x400/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	4,06E+00	4,16E+00	3,56E-04	1,19E-02	1,58E-02	2,36E-01	3,26E-05	4,55E-04	3,60E-05	-7,12E-03
Materials for energy recovery	kg	3,75E-04	3,85E-04	3,02E-06	2,16E-05	1,69E-05	4,03E-05	2,76E-07	2,99E-07	6,92E-08	-1,43E-04
Exported energy, electricity	MJ	4,71E-01	4,83E-01	8,06E-03	2,00E-02	5,26E-02	2,22E+00	7,37E-04	8,55E-04	1,16E-03	-8,85E-02
Exported energy, heat	MJ	4,66E-01	4,78E-01	1,17E-02	3,05E-02	2,77E-02	5,34E-01	1,07E-03	5,23E-04	2,59E-03	-2,08E-01

Table 205: Core environmental impact indicators - FDMQ, 1500x800/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	1,73E+02	1,77E+02	8,05E+00	3,29E+01	1,45E+01	0	7,36E-01	4,56E-01	4,56E-01	-6,89E+01
Climate change - Biogenic	kg CO2 eq	-9,50E+00	-9,74E+00	5,44E-03	3,48E-01	1,80E-02	0	4,97E-04	9,50E+00	2,60E-03	-6,45E-02
Climate change - Land use and LU change	kg CO2 eq	1,50E-01	1,54E-01	2,68E-03	9,00E-03	1,50E-02	0	2,45E-04	1,11E-04	1,11E-04	-3,35E-02
Climate change	kg CO2 eq	1,63E+02	1,68E+02	8,06E+00	3,33E+01	1,45E+01	0	7,37E-01	4,59E-01	4,59E-01	-6,90E+01
GWP-GHG	kg CO2 eq	1,71E+02	1,72E+02	8,06E+00	3,13E+01	1,44E+01	0	7,31E-01	3,33E-01	4,53E-01	-6,74E+01
Ozone depletion	kg CFC11 eq	2,72E-06	2,78E-06	1,60E-07	1,34E-07	2,88E-07	0	1,46E-08	1,43E-08	1,43E-08	-3,26E-07
Acidification	mol H+ eq	1,55E+00	1,59E+00	1,68E-02	9,41E-02	7,75E-02	0	1,53E-03	5,03E-03	5,03E-03	-2,87E-01
Eutrophication, freshwater*	kg P eq	8,87E-02	9,10E-02	5,45E-04	3,39E-03	4,14E-03	0	4,99E-05	7,64E-04	7,64E-04	-2,82E-02
Eutrophication, marine	kg N eq	2,17E-01	2,23E-01	4,03E-03	2,71E-02	1,47E-02	0	3,68E-04	1,25E-03	1,25E-03	-6,47E-02
Eutrophication, terrestrial	mol N eq	5,58E+00	5,72E+00	4,35E-02	2,97E-01	2,27E-01	0	3,97E-03	1,35E-02	1,35E-02	-6,65E-01
Photochemical ozone formation	kg NMVOC eq	6,64E-01	6,81E-01	2,79E-02	8,59E-02	4,83E-02	0	2,55E-03	4,92E-03	4,92E-03	-2,23E-01
Resource use, minerals and metals*	kg Sb eq	3,68E-03	3,77E-03	2,62E-05	9,50E-05	1,82E-04	0	2,39E-06	8,67E-07	8,67E-07	-4,47E-04
Resource use, fossils*	MJ	2,28E+03	2,33E+03	1,13E+02	1,70E+02	1,71E+02	0	1,04E+01	1,06E+01	1,06E+01	-7,03E+02
Water use*	m^3 depriv.	7,01E+01	7,18E+01	6,39E-01	5,42E+00	5,16E+00	0	5,84E-02	-5,50E+00	-5,50E+00	-1,92E+01

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Table 206: Additional environmental impact indicators - FDMQ, 1500x800/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	2,06E-05	2,11E-05	5,93E-07	9,21E-07	7,16E-07	0	5,42E-08	7,64E-08	7,64E-08	-6,23E-06
Human toxicity, non-cancer*	CTUh	3,27E-06	3,35E-06	7,33E-08	1,97E-07	1,05E-07	0	6,70E-09	1,27E-08	1,27E-08	-1,54E-06
Human toxicity, cancer*	CTUh	8,88E-06	9,11E-06	5,72E-08	3,88E-08	8,58E-08	0	5,23E-09	2,59E-09	2,59E-09	-7,05E-06
Land use*	Pt	1,59E+03	1,63E+03	6,84E+01	9,97E+01	3,61E+01	0	6,25E+00	2,60E+01	2,60E+01	-2,22E+02
Ionising radiation**	kBq U-235 eq	1,85E+01	1,90E+01	1,47E-01	4,16E-01	1,07E+00	0	1,34E-02	1,42E-02	1,42E-02	-2,02E+00
Ecotoxicity, freshwater	CTUe	3,89E+03	3,99E+03	3,08E+01	6,94E+01	9,58E+01	0	2,82E+00	7,80E+00	7,80E+00	-2,31E+03

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 207: Parameters describing resource use - FDMQ, 1500x800/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,51E+02	3,60E+02	1,94E+00	1,48E+01	1,48E+01	0	1,78E-01	2,20E-01	2,20E-01	-6,29E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,51E+02	3,60E+02	1,94E+00	1,48E+01	1,48E+01	0	1,78E-01	2,20E-01	2,20E-01	-6,29E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,29E+03	2,35E+03	1,13E+02	1,70E+02	1,71E+02	0	1,04E+01	1,06E+01	1,06E+01	-7,03E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,29E+03	2,35E+03	1,13E+02	1,70E+02	1,71E+02	0	1,04E+01	1,06E+01	1,06E+01	-7,03E+02
Use of secondary material	kg	1,61E+01	1,65E+01	5,26E-02	4,67E-02	3,22E+00	0	4,80E-03	3,52E-03	3,52E-03	-1,19E+01
Use of renewable secondary fuels	MJ, net calorific value	3,88E+00	3,98E+00	6,65E-04	3,83E-02	7,76E-03	0	6,07E-05	6,37E-05	6,37E-05	-7,45E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,71E+00	1,76E+00	1,57E-02	1,31E-01	1,28E-01	0	1,44E-03	-1,28E-01	-1,28E-01	-4,94E-01

Table 208: Other environmental information describing waste categories - FDMQ, 1500x800/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	3,48E+01	3,57E+01	1,65E-01	8,13E-01	1,12E+00	0	1,51E-02	1,79E-02	1,79E-02	-2,64E+01
Non-hazardous waste disposed	kg	6,55E+02	6,71E+02	3,49E+00	2,17E+01	2,92E+01	0	3,19E-01	1,63E+02	1,63E+02	-3,02E+02
Radioactive waste disposed/stored	kg	4,51E-03	4,63E-03	3,65E-05	1,03E-04	2,62E-04	0	3,34E-06	3,47E-06	3,47E-06	-5,05E-04

Table 209: Environmental information describing output flows - FDMQ, 1500x800/500 mm, manual

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	9,78E+00	1,00E+01	8,61E-04	1,30E-02	2,05E-02	0	7,87E-05	1,37E-04	1,37E-04	-1,32E-02
Materials for energy recovery	kg	7,54E-04	7,73E-04	7,29E-06	4,09E-05	3,23E-05	0	6,67E-07	2,63E-07	2,63E-07	-2,65E-04
Exported energy, electricity	MJ	9,53E-01	9,78E-01	1,95E-02	3,79E-02	1,00E-01	0	1,78E-03	4,41E-03	4,41E-03	-1,63E-01
Exported energy, heat	MJ	8,13E-01	8,34E-01	2,82E-02	5,69E-02	5,36E-02	0	2,58E-03	9,87E-03	9,87E-03	-3,84E-01

Table 210: Core environmental impact indicators - FDMQ, 1500x800/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Climate change - Fossil	kg CO2 eq	1,86E+02	1,91E+02	8,28E+00	3,39E+01	1,49E+01	3,34E+02	7,57E-01	3,11E+00	4,69E-01	-6,77E+01
Climate change - Biogenic	kg CO2 eq	-9,50E+00	-9,74E+00	5,59E-03	3,58E-01	1,85E-02	3,91E+00	5,11E-04	9,50E+00	2,67E-03	-6,45E-02
Climate change - Land use and LU change	kg CO2 eq	1,73E-01	1,77E-01	2,75E-03	9,25E-03	1,54E-02	5,44E-01	2,52E-04	2,57E-04	1,14E-04	-3,32E-02
Climate change	kg CO2 eq	1,77E+02	1,81E+02	8,29E+00	3,42E+01	1,49E+01	3,38E+02	7,58E-01	3,11E+00	4,72E-01	-6,78E+01
GWP-GHG	kg CO2 eq	1,84E+02	1,85E+02	8,29E+00	3,22E+01	1,48E+01	3,36E+02	5,50E-01	3,07E+00	4,61E-01	-6,63E+01
Ozone depletion	kg CFC11 eq	2,84E-06	2,91E-06	1,65E-07	1,38E-07	2,97E-07	2,41E-06	1,51E-08	3,51E-08	1,47E-08	-3,22E-07
Acidification	mol H+ eq	1,75E+00	1,80E+00	1,72E-02	9,68E-02	7,97E-02	1,48E+00	1,58E-03	2,08E-02	5,17E-03	-2,83E-01
Eutrophication, freshwater*	kg P eq	1,04E-01	1,06E-01	5,61E-04	3,49E-03	4,26E-03	5,06E-01	5,13E-05	8,36E-05	7,86E-04	-2,76E-02
Eutrophication, marine	kg N eq	2,36E-01	2,42E-01	4,14E-03	2,79E-02	1,51E-02	3,21E-01	3,79E-04	9,55E-03	1,29E-03	-6,38E-02
Eutrophication, terrestrial	mol N eq	5,78E+00	5,93E+00	4,47E-02	3,05E-01	2,34E-01	2,39E+00	4,09E-03	1,05E-01	1,38E-02	-6,56E-01
Photochemical ozone formation	kg NMVOC eq	7,35E-01	7,53E-01	2,87E-02	8,83E-02	4,97E-02	7,00E-01	2,62E-03	3,10E-02	5,07E-03	-2,20E-01
Resource use, minerals and metals*	kg Sb eq	5,55E-03	5,69E-03	2,69E-05	9,77E-05	1,87E-04	2,31E-03	2,46E-06	1,47E-06	8,92E-07	-4,39E-04
Resource use, fossils*	MJ	2,27E+03	2,32E+03	1,17E+02	1,75E+02	1,75E+02	5,80E+03	1,06E+01	3,00E+01	1,09E+01	-6,89E+02
Water use*	m^3 depriv.	7,16E+01	7,35E+01	6,57E-01	5,57E+00	5,30E+00	1,54E+02	6,01E-02	1,31E-01	-5,66E+00	-1,88E+01

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Table 211: Additional environmental impact indicators - FDMQ, 1500x800/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Particulate matter	disease inc.	2,17E-05	2,23E-05	6,10E-07	9,47E-07	7,36E-07	3,55E-06	5,57E-08	5,79E-07	7,86E-08	-6,12E-06
Human toxicity, non-cancer*	CTUh	4,88E-06	5,01E-06	7,54E-08	2,02E-07	1,08E-07	3,86E-06	6,89E-09	1,78E-08	1,31E-08	-1,51E-06
Human toxicity, cancer*	CTUh	9,33E-06	9,57E-06	5,88E-08	3,99E-08	8,83E-08	5,02E-07	5,38E-09	9,77E-09	2,66E-09	-6,92E-06
Land use*	Pt	1,70E+03	1,74E+03	7,04E+01	1,03E+02	3,71E+01	6,57E+02	6,43E+00	3,33E+00	2,68E+01	-2,19E+02
Ionising radiation**	kBq U-235 eq	1,91E+01	1,96E+01	1,51E-01	4,28E-01	1,11E+00	1,51E+02	1,38E-02	1,59E-02	1,46E-02	-1,98E+00
Ecotoxicity, freshwater	CTUe	4,20E+03	4,31E+03	3,17E+01	7,14E+01	9,85E+01	1,28E+03	2,90E+00	1,25E+01	8,02E+00	-2,27E+03

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Table 212: Parameters describing resource use - FDMQ, 1500x800/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Use of renewable primary energy excl. raw materials	MJ, net calorific value	3,74E+02	3,83E+02	2,00E+00	1,52E+01	1,52E+01	4,45E+02	1,83E-01	2,98E-01	2,27E-01	-6,18E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	3,74E+02	3,83E+02	2,00E+00	1,52E+01	1,52E+01	4,45E+02	1,83E-01	2,98E-01	2,27E-01	-6,18E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,28E+03	2,33E+03	1,17E+02	1,75E+02	1,75E+02	5,80E+03	1,06E+01	3,00E+01	1,09E+01	-6,89E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,28E+03	2,33E+03	1,17E+02	1,75E+02	1,75E+02	5,80E+03	1,06E+01	3,00E+01	1,09E+01	-6,89E+02
Use of secondary material	kg	1,58E+01	1,62E+01	5,41E-02	4,80E-02	3,31E+00	5,62E-01	4,94E-03	1,32E-02	3,62E-03	-1,17E+01
Use of renewable secondary fuels	MJ, net calorific value	3,99E+00	4,09E+00	6,83E-04	3,94E-02	7,99E-03	4,84E-03	6,25E-05	5,59E-04	6,56E-05	-7,32E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,77E+00	1,82E+00	1,62E-02	1,35E-01	1,31E-01	3,69E+00	1,48E-03	3,18E-03	-1,32E-01	-4,85E-01

Table 213: Other environmental information describing waste categories - FDMQ, 1500x800/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Hazardous waste	kg	3,76E+01	3,86E+01	1,70E-01	8,36E-01	1,15E+00	1,02E+01	1,55E-02	1,11E-01	1,84E-02	-2,59E+01
Non-hazardous waste disposed	kg	6,61E+02	6,78E+02	3,59E+00	2,23E+01	3,01E+01	2,48E+03	3,28E-01	8,42E-01	1,67E+02	-2,97E+02
Radioactive waste disposed/stored	kg	4,50E-03	4,61E-03	3,76E-05	1,05E-04	2,70E-04	3,63E-02	3,43E-06	3,92E-06	3,57E-06	-4,94E-04

Table 214: Environmental information describing output flows - FDMQ, 1500x800/500 mm, with the actuator

Impact category	Unit	A1-A3		A4	A5		B6	C2	C3	C4	D
		Mortar	Mineral wool		Mortar	Mineral wool					
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,01E+01	1,03E+01	8,85E-04	1,34E-02	2,11E-02	3,37E-01	8,09E-05	9,30E-04	1,41E-04	-1,29E-02
Materials for energy recovery	kg	7,57E-04	7,76E-04	7,50E-06	4,20E-05	3,32E-05	5,76E-05	6,86E-07	5,63E-07	2,71E-07	-2,60E-04
Exported energy, electricity	MJ	9,51E-01	9,75E-01	2,00E-02	3,89E-02	1,03E-01	3,17E+00	1,83E-03	1,59E-03	4,53E-03	-1,60E-01
Exported energy, heat	MJ	7,91E-01	8,12E-01	2,90E-02	5,85E-02	5,51E-02	7,63E-01	2,65E-03	9,85E-04	1,02E-02	-3,77E-01

Table 215: Core environmental impact indicators - FDML, 200x300 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - fossil	kg CO2 eq	4,78E+01	2,15E+00	6,43E+00	6,32E+01	1,71E-01	1,42E+00	6,22E-02	-2,01E+01
Climate change - biogenic	kg CO2 eq	-1,27E+00	1,58E-02	9,97E-01	2,23E+00	1,15E-04	1,27E+00	3,54E-04	-2,07E-02
Climate change - land use and LU change	kg CO2 eq	4,38E-02	7,18E-04	1,63E-03	1,93E-01	5,69E-05	8,26E-05	1,51E-05	-1,00E-02
Climate change	kg CO2 eq	4,66E+01	2,17E+00	7,43E+00	6,56E+01	1,71E-01	2,69E+00	6,26E-02	-2,02E+01
GWP-GHG	kg CO2 eq	4,52E+01	2,15E+00	7,42E+00	6,17E+01	1,70E-01	1,42E+00	6,18E-02	-1,97E+01
Ozone depletion	kg CFC11 eq	7,62E-07	4,29E-08	1,73E-08	1,16E-06	3,40E-09	1,06E-08	1,95E-09	-9,90E-08
Acidification	mol H+ eq	4,42E-01	4,49E-03	2,62E-02	3,72E-01	3,56E-04	6,27E-03	6,86E-04	-8,37E-02
Eutrophication, freshwater*	kg P eq	2,80E-02	1,46E-04	1,20E-03	5,88E-02	1,16E-05	2,72E-05	1,04E-04	-8,33E-03
Eutrophication, marine	kg N eq	6,03E-02	1,08E-03	4,93E-03	5,83E-02	8,55E-05	2,89E-03	1,71E-04	-1,89E-02
Eutrophication, terrestrial	mol N eq	1,33E+00	1,16E-02	5,48E-02	5,23E-01	9,23E-04	3,15E-02	1,84E-03	-1,94E-01
Photochemical ozone formation	kg NMVOC eq	1,91E-01	7,46E-03	1,59E-02	1,72E-01	5,92E-04	9,31E-03	6,72E-04	-6,51E-02
Resource use - minerals and metals*	kg Sb eq	1,70E-03	7,01E-06	8,05E-06	8,49E-04	5,55E-07	4,99E-07	1,18E-07	-1,29E-04
Resource use, fossils*	MJ	6,09E+02	1,58E+01	4,18E-02	1,47E+03	2,41E+00	9,00E+00	1,45E+00	-2,06E+02
Water use*	m^3 depriv.	6,85E+00	3,40E-02	1,33E-01	4,97E+01	1,36E-02	6,33E-02	-7,51E-01	-5,59E+00

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

Table 216: Additional environmental impact indicators - FDML, 200x300 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	4,67E-06	1,26E-07	3,70E-07	1,33E-06	1,26E-08	1,72E-07	1,04E-08	-1,80E-06
Human toxicity, non-cancer*	CTUh	1,46E-06	1,90E-08	3,79E-08	1,11E-06	1,56E-09	7,44E-09	1,74E-09	-4,46E-07
Human toxicity, cancer*	CTUh	2,55E-06	1,53E-08	1,16E-08	1,50E-07	1,21E-09	3,05E-09	3,53E-10	-2,04E-06
Land use*	Pt	4,12E+02	1,83E+01	3,10E+01	3,27E+02	1,45E+00	1,08E+00	3,55E+00	-6,47E+01
Ionising radiation**	kBq U-235 eq	4,48E+00	3,93E-02	2,09E-01	4,06E+01	3,12E-03	5,04E-03	1,94E-03	-6,43E-01
Ecotoxicity, freshwater	CTUe	1,13E+03	8,25E+00	1,16E+01	2,63E+02	6,55E-01	5,08E+00	1,06E+00	-6,68E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 217: Parameters describing resource use - FDML, 200x300 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	9,10E+01	5,20E-01	7,59E+00	4,03E+02	4,13E-02	9,85E-02	3,01E-02	-1,83E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	9,10E+01	5,20E-01	7,59E+00	4,03E+02	4,13E-02	9,85E-02	3,01E-02	-1,83E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	9,86E+01	2,57E-03	4,61E-02	1,47E+03	2,41E+00	9,00E+00	1,45E+00	-2,06E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	9,86E+01	2,57E-03	4,61E-02	1,47E+03	2,41E+00	9,00E+00	1,45E+00	-2,06E+02
Use of secondary material	kg	3,02E-01	0	2,71E-04	2,43E-01	1,12E-03	4,03E-03	4,81E-04	-3,44E+00
Use of renewable secondary fuels	MJ, net calorific value	8,99E-01	0	2,19E-06	1,94E-03	1,41E-05	1,99E-04	8,70E-06	-2,15E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	2,68E-01	1,91E-03	1,61E-02	1,28E+00	3,34E-04	1,52E-03	-1,75E-02	-1,44E-01

Table 218: Other environmental information describing waste categories - FDML, 200x300 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	9,09E+00	2,99E-02	8,93E-02	3,72E+00	3,51E-03	4,53E-02	2,45E-03	-7,62E+00
Non-hazardous waste disposed	kg	8,32E+01	3,33E-01	9,78E-01	2,88E+02	7,41E-02	4,83E-01	2,22E+01	-8,82E+01
Radioactive waste disposed/ stored	kg	3,65E-05	0	9,05E-08	1,04E-02	7,75E-07	1,24E-06	4,74E-07	-1,60E-04

Table 219: Environmental information describing output flows - FDML, 200x300 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	2,66E+00	0	7,35E-02	1,53E-01	1,83E-05	1,16E+01	1,87E-05	-3,83E-03
Materials for energy recovery	kg	8,63E-05	0	3,03E-08	2,06E-05	1,55E-07	1,91E-01	3,59E-08	-7,65E-05
Exported energy, electricity	MJ	2,23E-02	0	5,26E-05	6,56E+00	4,14E-04	5,02E-04	6,02E-04	-4,73E-02
Exported energy, heat	MJ	1,58E-02	0	1,37E-05	2,48E-01	5,99E-04	3,46E-04	1,35E-03	-1,11E-01

Table 220: Core environmental impact indicators - FDML, 500x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - fossil	kg CO2 eq	8,84E+01	4,32E+00	1,05E+01	1,21E+02	3,43E-01	2,58E+00	1,49E-01	-3,72E+01
Climate change - biogenic	kg CO2 eq	-2,71E+00	3,18E-02	1,62E+00	4,25E+00	2,32E-04	2,71E+00	8,50E-04	-3,82E-02
Climate change - land use and LU change	kg CO2 eq	7,98E-02	1,44E-03	2,66E-03	3,67E-01	1,14E-04	1,42E-04	3,62E-05	-1,84E-02
Climate change	kg CO2 eq	8,58E+01	4,36E+00	1,21E+01	1,25E+02	3,44E-01	5,30E+00	1,50E-01	-3,72E+01
GWP-GHG	kg CO2 eq	8,32E+01	4,33E+00	1,21E+01	1,18E+02	3,41E-01	2,58E+00	1,48E-01	-3,64E+01
Ozone depletion	kg CFC11 eq	1,58E-06	8,60E-08	2,82E-08	2,22E-06	6,82E-09	1,93E-08	4,67E-09	-1,83E-07
Acidification	mol H+ eq	7,80E-01	9,01E-03	4,26E-02	7,09E-01	7,15E-04	1,14E-02	1,65E-03	-1,54E-01
Eutrophication, freshwater*	kg P eq	5,03E-02	2,93E-04	1,95E-03	1,12E-01	2,32E-05	4,72E-05	2,50E-04	-1,54E-02
Eutrophication, marine	kg N eq	1,11E-01	2,16E-03	8,04E-03	1,11E-01	1,72E-04	5,29E-03	4,10E-04	-3,49E-02
Eutrophication, terrestrial	mol N eq	2,40E+00	2,33E-02	8,92E-02	9,97E-01	1,85E-03	5,77E-02	4,41E-03	-3,58E-01
Photochemical ozone formation	kg NMVOC eq	3,52E-01	1,50E-02	2,59E-02	3,28E-01	1,19E-03	1,71E-02	1,61E-03	-1,20E-01
Resource use - minerals and metals*	kg Sb eq	2,77E-03	1,41E-05	1,31E-05	1,62E-03	1,11E-06	8,06E-07	2,84E-07	-2,38E-04
Resource use, fossils*	MJ	1,14E+03	3,17E+01	8,40E-02	2,80E+03	4,83E+00	1,64E+01	3,47E+00	-3,81E+02
Water use*	m^3 depriv.	1,24E+01	6,82E-02	2,18E-01	9,48E+01	2,72E-02	1,14E-01	-1,80E+00	-1,03E+01

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Table 221: Additional environmental impact indicators - FDML, 500x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	8,50E-06	2,53E-07	6,02E-07	2,53E-06	2,53E-08	3,15E-07	2,50E-08	-3,32E-06
Human toxicity, non-cancer*	CTUh	2,41E-06	3,82E-08	6,18E-08	2,12E-06	3,12E-09	1,17E-08	4,17E-09	-8,22E-07
Human toxicity, cancer*	CTUh	4,62E-06	3,07E-08	1,89E-08	2,87E-07	2,44E-09	5,45E-09	8,47E-10	-3,75E-06
Land use*	Pt	7,95E+02	3,67E+01	5,05E+01	6,24E+02	2,92E+00	1,78E+00	8,52E+00	-1,19E+02
Ionising radiation**	kBq U-235 eq	8,58E+00	7,89E-02	3,41E-01	7,75E+01	6,26E-03	8,82E-03	4,65E-03	-1,20E+00
Ecotoxicity, freshwater	CTUe	2,02E+03	1,66E+01	1,90E+01	5,01E+02	1,31E+00	8,17E+00	2,55E+00	-1,23E+03

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 222: Parameters describing resource use - FDML, 500x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,74E+02	1,04E+00	1,24E+01	7,69E+02	8,28E-02	1,62E-01	7,21E-02	-3,38E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,74E+02	1,04E+00	1,24E+01	7,69E+02	8,28E-02	1,62E-01	7,21E-02	-3,38E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,98E+02	5,15E-03	9,09E-02	2,80E+03	4,83E+00	1,64E+01	3,47E+00	-3,81E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,98E+02	5,15E-03	9,09E-02	2,80E+03	4,83E+00	1,64E+01	3,47E+00	-3,81E+02
Use of secondary material	kg	6,06E-01	0	5,43E-04	4,64E-01	2,24E-03	7,25E-03	1,15E-03	-6,35E+00
Use of renewable secondary fuels	MJ, net calorific value	1,80E+00	0	4,40E-06	3,70E-03	2,83E-05	2,78E-04	2,09E-05	-3,97E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,93E-01	3,84E-03	2,61E-02	2,43E+00	6,71E-04	2,73E-03	-4,19E-02	-2,66E-01

Table 223: Other environmental information describing waste categories - FDML, 500x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	1,62E+01	6,00E-02	1,46E-01	7,10E+00	7,04E-03	7,20E-02	5,87E-03	-1,40E+01
Non-hazardous waste disposed	kg	1,52E+02	6,69E-01	1,70E+00	5,49E+02	1,49E-01	8,74E-01	5,33E+01	-1,63E+02
Radioactive waste disposed/ stored	kg	7,32E-05	0	1,82E-07	1,99E-02	1,56E-06	2,17E-06	1,14E-06	-2,98E-04

Table 224: Environmental information describing output flows - FDML, 500x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	5,34E+00	0	1,48E-01	2,91E-01	3,67E-05	2,08E+01	4,48E-05	-7,07E-03
Materials for energy recovery	kg	1,73E-04	0	6,08E-08	3,92E-05	3,11E-07	3,99E-01	8,62E-08	-1,41E-04
Exported energy, electricity	MJ	4,48E-02	0	1,06E-04	1,25E+01	8,30E-04	8,82E-04	1,44E-03	-8,72E-02
Exported energy, heat	MJ	3,16E-02	0	2,76E-05	4,72E-01	1,20E-03	5,96E-04	3,23E-03	-2,05E-01

Table 225: Core environmental impact indicators - FDML, 1000x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - fossil	kg CO2 eq	2,04E+02	1,12E+01	1,86E+01	1,72E+02	8,86E-01	5,99E+00	4,79E-01	-7,94E+01
Climate change - biogenic	kg CO2 eq	-7,58E+00	8,21E-02	2,88E+00	6,08E+00	5,98E-04	7,58E+00	2,73E-03	-8,32E-02
Climate change - land use and LU change	kg CO2 eq	1,87E-01	3,72E-03	4,74E-03	5,25E-01	2,95E-04	3,05E-04	1,16E-04	-3,95E-02
Climate change	kg CO2 eq	1,97E+02	1,12E+01	2,15E+01	1,79E+02	8,86E-01	1,36E+01	4,82E-01	-7,96E+01
GWP-GHG	kg CO2 eq	1,91E+02	1,12E+01	2,15E+01	1,68E+02	8,80E-01	5,97E+00	4,75E-01	-7,78E+01
Ozone depletion	kg CFC11 eq	4,09E-06	2,22E-07	5,01E-08	3,17E-06	1,76E-08	4,15E-08	1,50E-08	-3,95E-07
Acidification	mol H+ eq	1,69E+00	2,32E-02	7,57E-02	1,01E+00	1,84E-03	2,46E-02	5,28E-03	-3,30E-01
Eutrophication, freshwater*	kg P eq	1,16E-01	7,56E-04	3,46E-03	1,60E-01	6,00E-05	1,02E-04	8,03E-04	-3,30E-02
Eutrophication, marine	kg N eq	2,55E-01	5,58E-03	1,43E-02	1,59E-01	4,43E-04	1,14E-02	1,32E-03	-7,45E-02
Eutrophication, terrestrial	mol N eq	5,20E+00	6,02E-02	1,59E-01	1,42E+00	4,78E-03	1,24E-01	1,41E-02	-7,64E-01
Photochemical ozone formation	kg NMVOC eq	8,19E-01	3,86E-02	4,60E-02	4,69E-01	3,07E-03	3,66E-02	5,17E-03	-2,56E-01
Resource use - minerals and metals*	kg Sb eq	5,77E-03	3,63E-05	2,34E-05	2,31E-03	2,88E-06	1,72E-06	9,11E-07	-5,08E-04
Resource use, fossils*	MJ	2,68E+03	8,17E+01	2,17E-01	4,01E+03	1,25E+01	3,52E+01	1,11E+01	-8,17E+02
Water use*	m^3 depriv.	2,76E+01	1,76E-01	3,89E-01	1,36E+02	7,03E-02	2,67E-01	-5,78E+00	-2,21E+01

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

Table 226: Additional environmental impact indicators - FDML, 1000x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,88E-05	6,53E-07	1,07E-06	3,61E-06	6,52E-08	6,74E-07	8,03E-08	-7,08E-06
Human toxicity, non-cancer*	CTUh	5,15E-06	9,86E-08	1,10E-07	3,03E-06	8,06E-09	2,60E-08	1,34E-08	-1,75E-06
Human toxicity, cancer*	CTUh	9,91E-06	7,92E-08	3,39E-08	4,10E-07	6,29E-09	1,17E-08	2,72E-09	-8,00E-06
Land use*	Pt	1,96E+03	9,47E+01	8,99E+01	8,91E+02	7,52E+00	3,80E+00	2,73E+01	-2,54E+02
Ionising radiation**	kBq U-235 eq	2,11E+01	2,04E-01	6,06E-01	1,11E+02	1,62E-02	1,89E-02	1,49E-02	-2,62E+00
Ecotoxicity, freshwater	CTUe	4,33E+03	4,27E+01	3,44E+01	7,16E+02	3,39E+00	1,82E+01	8,19E+00	-2,63E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 227: Parameters describing resource use - FDML, 1000x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,24E+02	2,70E+00	2,19E+01	1,10E+03	2,14E-01	3,46E-01	2,31E-01	-7,21E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,24E+02	2,70E+00	2,19E+01	1,10E+03	2,14E-01	3,46E-01	2,31E-01	-7,21E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,11E+02	1,33E-02	2,29E-01	4,01E+03	1,25E+01	3,52E+01	1,11E+01	-8,17E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,11E+02	1,33E-02	2,29E-01	4,01E+03	1,25E+01	3,52E+01	1,11E+01	-8,17E+02
Use of secondary material	kg	1,56E+00	0	1,40E-03	6,63E-01	5,78E-03	1,56E-02	3,70E-03	-1,35E+01
Use of renewable secondary fuels	MJ, net calorific value	4,66E+00	0	1,14E-05	5,29E-03	7,31E-05	5,79E-04	6,70E-05	-8,46E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,12E+00	9,90E-03	4,60E-02	3,48E+00	1,73E-03	6,36E-03	-1,34E-01	-5,68E-01

Table 228: Other environmental information describing waste categories - FDML, 1000x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	3,46E+01	1,55E-01	2,60E-01	1,01E+01	1,82E-02	1,60E-01	1,88E-02	-2,99E+01
Non-hazardous waste disposed	kg	3,33E+02	1,73E+00	3,49E+00	7,84E+02	3,84E-01	2,08E+00	1,71E+02	-3,48E+02
Radioactive waste disposed/ stored	kg	1,89E-04	0	4,69E-07	2,84E-02	4,02E-06	4,66E-06	3,65E-06	-6,51E-04

Table 229: Environmental information describing output flows - FDML, 1000x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,38E+01	0	3,81E-01	4,16E-01	9,47E-05	4,44E+01	1,44E-04	-1,51E-02
Materials for energy recovery	kg	4,47E-04	0	1,57E-07	5,61E-05	8,02E-07	1,06E+00	2,77E-07	-3,01E-04
Exported energy, electricity	MJ	1,16E-01	0	2,73E-04	1,79E+01	2,14E-03	1,90E-03	4,63E-03	-1,86E-01
Exported energy, heat	MJ	8,16E-02	0	7,13E-05	6,75E-01	3,10E-03	1,31E-03	1,04E-02	-4,37E-01

Table 230: Core environmental impact indicators - FDMA, 180x180 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,92E+01	1,16E+00	4,47E+00	0	9,22E-02	5,55E-01	2,03E-02	-1,45E+01
Climate change - Biogenic	kg CO2 eq	-5,76E-01	8,55E-03	6,95E-01	0	6,23E-05	5,76E-01	1,16E-04	-1,38E-02
Climate change - Land use and LU change	kg CO2 eq	2,41E-02	3,87E-04	1,14E-03	0	3,07E-05	4,22E-05	4,93E-06	-7,08E-03
Climate change	kg CO2 eq	2,86E+01	1,17E+00	5,17E+00	0	9,23E-02	1,13E+00	2,05E-02	-1,45E+01
GWP-GHG	kg CO2 eq	2,78E+01	1,16E+00	5,17E+00	0	9,16E-02	5,54E-01	2,02E-02	-1,42E+01
Ozone depletion	kg CFC11 eq	4,08E-07	2,31E-08	1,20E-08	0	1,83E-09	7,37E-09	6,36E-10	-6,93E-08
Acidification	mol H+ eq	3,16E-01	2,42E-03	1,82E-02	0	1,92E-04	4,35E-03	2,24E-04	-6,05E-02
Eutrophication, freshwater*	kg P eq	1,42E-02	7,87E-05	8,32E-04	0	6,25E-06	1,42E-05	3,41E-05	-5,96E-03
Eutrophication, marine	kg N eq	3,77E-02	5,82E-04	3,43E-03	0	4,61E-05	2,02E-03	5,59E-05	-1,36E-02
Eutrophication, terrestrial	mol N eq	1,18E+00	6,27E-03	3,81E-02	0	4,98E-04	2,21E-02	6,00E-04	-1,40E-01
Photochemical ozone formation	kg NMVOC eq	1,10E-01	4,02E-03	1,11E-02	0	3,19E-04	6,58E-03	2,20E-04	-4,70E-02
Resource use, minerals and metals*	kg Sb eq	7,62E-04	3,78E-06	5,60E-06	0	3,00E-07	1,71E-07	3,87E-08	-9,41E-05
Resource use, fossils*	MJ	3,65E+02	1,56E+01	2,26E-02	0	1,30E+00	6,29E+00	4,73E-01	-1,48E+02
Water use*	m^3 depriv.	4,35E+00	1,83E-02	9,28E-02	0	7,32E-03	2,20E-02	-2,45E-01	-4,04E+00

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

Table 231: Additional environmental impact indicators - FDMA, 180x180 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	3,44E-06	6,80E-08	2,58E-07	0	6,79E-09	1,23E-07	3,41E-09	-1,31E-06
Human toxicity, non-cancer*	CTUh	5,38E-07	1,03E-08	2,64E-08	0	8,40E-10	1,08E-09	5,68E-10	-3,24E-07
Human toxicity, cancer*	CTUh	1,84E-06	8,25E-09	8,04E-09	0	6,55E-10	1,89E-09	1,15E-10	-1,48E-06
Land use*	Pt	2,27E+02	9,86E+00	2,16E+01	0	7,84E-01	4,44E-01	1,16E+00	-4,67E+01
Ionising radiation**	kBq U-235 eq	2,59E+00	2,12E-02	1,46E-01	0	1,68E-03	2,83E-03	6,33E-04	-4,34E-01
Ecotoxicity, freshwater	CTUe	8,06E+02	4,45E+00	8,01E+00	0	3,53E-01	1,04E+00	3,48E-01	-4,87E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 232: Parameters describing resource use - FDMA, 180x180 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,17E+01	2,81E-01	5,28E+00	0	2,23E-02	3,90E-02	9,83E-03	-1,33E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,17E+01	2,81E-01	5,28E+00	0	2,23E-02	3,90E-02	9,83E-03	-1,33E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,32E+01	1,39E-03	2,55E-02	0	1,30E+00	6,29E+00	4,73E-01	-1,48E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,32E+01	1,39E-03	2,55E-02	0	1,30E+00	6,29E+00	4,73E-01	-1,48E+02
Use of secondary material	kg	1,63E-01	0	1,46E-04	0	6,02E-04	2,62E-03	1,57E-04	-2,51E+00
Use of renewable secondary fuels	MJ, net calorific value	4,85E-01	0	1,18E-06	0	7,61E-06	7,25E-06	2,84E-06	-1,57E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,69E-01	1,03E-03	1,12E-02	0	1,80E-04	5,34E-04	-5,71E-03	-1,04E-01

Table 233: Other environmental information describing waste categories - FDMA, 180x180 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	6,04E+00	1,61E-02	6,20E-02	0	1,89E-03	8,30E-03	8,00E-04	-5,55E+00
Non-hazardous waste disposed	kg	5,81E+01	1,80E-01	6,35E-01	0	4,00E-02	1,31E-01	7,26E+00	-6,37E+01
Radioactive waste disposed/stored	kg	1,97E-05	0	4,88E-08	0	4,18E-07	6,96E-07	1,55E-07	-1,08E-04

Table 234: Environmental information describing output flows - FDMA, 180x180 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,44E+00	0	3,96E-02	0	9,86E-06	7,65E+00	6,71E-06	-2,49E-03
Materials for energy recovery	kg	4,66E-05	0	1,63E-08	0	8,35E-08	3,15E-02	1,29E-08	-5,01E-05
Exported energy, electricity	MJ	1,20E-02	0	2,84E-05	0	2,23E-04	2,58E-04	2,16E-04	-3,09E-02
Exported energy, heat	MJ	8,50E-03	0	7,42E-06	0	3,23E-04	1,40E-04	4,84E-04	-7,26E-02

Table 235: Core environmental impact indicators - FDMA, 180x180 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	3,27E+01	1,22E+00	4,73E+00	6,66E+01	9,72E-02	5,03E-01	2,23E-02	-1,31E+01
Climate change - Biogenic	kg CO2 eq	-5,84E-01	9,00E-03	7,35E-01	2,35E+00	6,56E-05	5,84E-01	1,27E-04	-1,29E-02
Climate change - Land use and LU change	kg CO2 eq	3,14E-02	4,08E-04	1,20E-03	2,03E-01	3,23E-05	3,79E-05	5,42E-06	-6,48E-03
Climate change	kg CO2 eq	3,22E+01	1,23E+00	5,47E+00	6,92E+01	9,73E-02	1,09E+00	2,25E-02	-1,31E+01
GWP-GHG	kg CO2 eq	2,52E+01	9,74E-01	4,49E+01	6,17E+01	7,68E-02	1,23E+00	1,61E-02	-9,65E+00
Ozone depletion	kg CFC11 eq	4,37E-07	2,44E-08	1,27E-08	1,23E-06	1,93E-09	6,62E-09	6,99E-10	-6,29E-08
Acidification	mol H+ eq	3,70E-01	2,55E-03	1,93E-02	3,92E-01	2,02E-04	3,90E-03	2,46E-04	-5,46E-02
Eutrophication, freshwater*	kg P eq	1,97E-02	8,30E-05	8,81E-04	6,20E-02	6,58E-06	1,28E-05	3,75E-05	-5,36E-03
Eutrophication, marine	kg N eq	4,29E-02	6,13E-04	3,63E-03	6,14E-02	4,86E-05	1,81E-03	6,14E-05	-1,23E-02
Eutrophication, terrestrial	mol N eq	1,16E+00	6,61E-03	4,04E-02	5,51E-01	5,24E-04	1,98E-02	6,59E-04	-1,27E-01
Photochemical ozone formation	kg NMVOC eq	1,31E-01	4,24E-03	1,17E-02	1,81E-01	3,36E-04	5,91E-03	2,41E-04	-4,26E-02
Resource use, minerals and metals*	kg Sb eq	1,45E-03	3,99E-06	5,92E-06	8,95E-04	3,16E-07	1,54E-07	4,25E-08	-8,46E-05
Resource use, fossils*	MJ	4,05E+02	1,65E+01	2,26E-02	1,55E+03	1,37E+00	5,65E+00	5,19E-01	-1,33E+02
Water use*	m^3 depriv.	4,92E+00	1,93E-02	9,82E-02	5,24E+01	7,71E-03	2,00E-02	-2,70E-01	-3,63E+00

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Table 236: Additional environmental impact indicators - FDMA, 180x180 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,30E-05	2,56E-07	9,75E-07	4,99E-06	2,56E-08	3,95E-07	1,34E-08	-4,22E-06
Human toxicity, non-cancer*	CTUh	1,15E-06	1,08E-08	2,79E-08	1,17E-06	8,85E-10	9,81E-10	6,24E-10	-2,92E-07
Human toxicity, cancer*	CTUh	1,87E-06	8,69E-09	8,50E-09	1,58E-07	6,90E-10	1,70E-09	1,27E-10	-1,33E-06
Land use*	Pt	2,57E+02	1,04E+01	2,28E+01	3,45E+02	8,25E-01	3,99E-01	1,27E+00	-4,24E+01
Ionising radiation**	kBq U-235 eq	1,01E+01	7,99E-02	5,51E-01	1,53E+02	6,34E-03	9,11E-03	2,49E-03	-1,40E+00
Ecotoxicity, freshwater	CTUe	8,69E+02	4,69E+00	8,47E+00	2,77E+02	3,72E-01	9,44E-01	3,82E-01	-4,37E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 237: Parameters describing resource use - FDMA, 180x180 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	5,82E+01	2,96E-01	5,59E+00	4,25E+02	2,35E-02	3,50E-02	1,08E-02	-1,19E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	5,82E+01	2,96E-01	5,59E+00	4,25E+02	2,35E-02	3,50E-02	1,08E-02	-1,19E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,60E+01	1,46E-03	2,57E-02	1,55E+03	1,37E+00	5,65E+00	5,19E-01	-1,33E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,60E+01	1,46E-03	2,57E-02	1,55E+03	1,37E+00	5,65E+00	5,19E-01	-1,33E+02
Use of secondary material	kg	1,72E-01	0	1,46E-04	2,56E-01	6,34E-04	2,35E-03	1,73E-04	-2,25E+00
Use of renewable secondary fuels	MJ, net calorific value	5,11E-01	0	1,18E-06	2,04E-03	8,02E-06	6,54E-06	3,12E-06	-1,41E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,87E-01	1,09E-03	1,19E-02	1,34E+00	1,90E-04	4,85E-04	-6,27E-03	-9,35E-02

Table 238: Other environmental information describing waste categories - FDMA, 180x180 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	6,69E+00	1,70E-02	6,56E-02	3,92E+00	1,99E-03	7,54E-03	8,79E-04	-4,98E+00
Non-hazardous waste disposed	kg	5,94E+01	1,89E-01	6,63E-01	3,03E+02	4,21E-02	1,20E-01	7,97E+00	-5,73E+01
Radioactive waste disposed/ stored	kg	2,07E-05	0	4,88E-08	1,10E-02	4,41E-07	6,25E-07	1,70E-07	-9,74E-05

Table 239: Environmental information describing output flows - FDMA, 180x180 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,51E+00	0	3,96E-02	1,61E-01	1,04E-05	1,54E-05	6,71E-06	-2,49E-03
Materials for energy recovery	kg	4,90E-05	0	1,63E-08	2,17E-05	8,80E-08	7,90E-08	1,29E-08	-5,01E-05
Exported energy, electricity	MJ	1,27E-02	0	2,84E-05	6,91E+00	2,35E-04	2,58E-04	2,16E-04	-3,09E-02
Exported energy, heat	MJ	8,96E-03	0	7,42E-06	2,61E-01	3,40E-04	1,40E-04	4,84E-04	-7,26E-02

Table 240: Core environmental impact indicators - FDMA, 800x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	8,41E+01	4,27E+00	1,21E+01	0	3,39E-01	1,45E+00	1,65E-01	-3,61E+01
Climate change - Biogenic	kg CO2 eq	-2,73E+00	3,14E-02	1,88E+00	0	2,29E-04	2,73E+00	9,41E-04	-3,45E-02
Climate change - Land use and LU change	kg CO2 eq	7,25E-02	1,42E-03	3,08E-03	0	1,13E-04	1,05E-04	4,01E-05	-1,76E-02
Climate change	kg CO2 eq	8,14E+01	4,30E+00	1,40E+01	0	3,39E-01	4,17E+00	1,66E-01	-3,62E+01
GWP-GHG	kg CO2 eq	7,90E+01	4,27E+00	1,40E+01	0	3,36E-01	1,44E+00	1,64E-01	-3,54E+01
Ozone depletion	kg CFC11 eq	1,31E-06	8,48E-08	3,26E-08	0	6,73E-09	1,83E-08	5,17E-09	-1,73E-07
Acidification	mol H+ eq	8,31E-01	8,89E-03	4,93E-02	0	7,05E-04	1,08E-02	1,82E-03	-1,50E-01
Eutrophication, freshwater*	kg P eq	4,20E-02	2,89E-04	2,25E-03	0	2,29E-05	3,55E-05	2,77E-04	-1,48E-02
Eutrophication, marine	kg N eq	1,08E-01	2,13E-03	9,29E-03	0	1,69E-04	5,02E-03	4,54E-04	-3,39E-02
Eutrophication, terrestrial	mol N eq	3,07E+00	2,30E-02	1,03E-01	0	1,83E-03	5,49E-02	4,88E-03	-3,48E-01
Photochemical ozone formation	kg NMVOC eq	3,23E-01	1,48E-02	3,00E-02	0	1,17E-03	1,64E-02	1,79E-03	-1,17E-01
Resource use, minerals and metals*	kg Sb eq	1,93E-03	1,39E-05	1,52E-05	0	1,10E-06	4,28E-07	3,14E-07	-2,34E-04
Resource use, fossils*	MJ	1,09E+03	5,74E+01	8,29E-02	0	4,76E+00	1,56E+01	3,84E+00	-3,69E+02
Water use*	m^3 depriv.	1,17E+01	6,72E-02	2,52E-01	0	2,69E-02	5,80E-02	-2,00E+00	-1,00E+01

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

Table 241: Additional environmental impact indicators - FDMA, 800x500 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	9,21E-06	2,50E-07	6,97E-07	0	2,49E-08	3,06E-07	2,77E-08	-3,26E-06
Human toxicity, non-cancer*	CTUh	1,41E-06	3,77E-08	7,14E-08	0	3,08E-09	2,88E-09	4,61E-09	-8,06E-07
Human toxicity, cancer*	CTUh	4,61E-06	3,03E-08	2,18E-08	0	2,40E-09	4,72E-09	9,38E-10	-3,69E-06
Land use*	Pt	7,52E+02	3,62E+01	5,84E+01	0	2,88E+00	1,11E+00	9,43E+00	-1,16E+02
Ionising radiation**	kBq U-235 eq	8,47E+00	7,78E-02	3,94E-01	0	6,18E-03	7,07E-03	5,15E-03	-1,09E+00
Ecotoxicity, freshwater	CTUe	2,04E+03	1,63E+01	2,19E+01	0	1,30E+00	2,72E+00	2,83E+00	-1,21E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 242: Parameters describing resource use - FDMA, 800x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,66E+02	1,03E+00	1,43E+01	0	8,17E-02	9,73E-02	7,99E-02	-3,30E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,66E+02	1,03E+00	1,43E+01	0	8,17E-02	9,73E-02	7,99E-02	-3,30E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,95E+02	5,08E-03	9,09E-02	0	4,76E+00	1,56E+01	3,84E+00	-3,69E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,95E+02	5,08E-03	9,09E-02	0	4,76E+00	1,56E+01	3,84E+00	-3,69E+02
Use of secondary material	kg	5,98E-01	0,00E+00	5,37E-04	0	2,21E-03	6,52E-03	1,28E-03	-6,24E+00
Use of renewable secondary fuels	MJ, net calorific value	1,78E+00	0,00E+00	4,35E-06	0	2,79E-05	1,84E-05	2,31E-05	-3,90E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	4,71E-01	3,78E-03	3,02E-02	0	6,62E-04	1,40E-03	-4,64E-02	-2,59E-01

Table 243: Other environmental information describing waste categories - FDMA, 800x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	1,52E+01	5,91E-02	1,68E-01	0	6,95E-03	2,18E-02	6,50E-03	-1,38E+01
Non-hazardous waste disposed	kg	1,52E+02	6,60E-01	1,87E+00	0	1,47E-01	3,56E-01	5,90E+01	-1,59E+02
Radioactive waste disposed/stored	kg	7,22E-05	0	1,79E-07	0	1,53E-06	1,73E-06	1,26E-06	-2,71E-04

Table 244: Environmental information describing output flows - FDMA, 800x500 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	5,27E+00	0	1,46E-01	0	3,62E-05	1,90E+01	9,55E-08	-1,39E-04
Materials for energy recovery	kg	1,71E-04	0	6,00E-08	0	3,07E-07	1,07E-01	0	0
Exported energy, electricity	MJ	4,42E-02	0	1,04E-04	0	8,19E-04	7,16E-04	1,60E-03	-8,56E-02
Exported energy, heat	MJ	3,12E-02	0	2,73E-05	0	1,19E-03	3,93E-04	3,58E-03	-2,01E-01

Table 245: Core environmental impact indicators - FDMA, 800x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	8,98E+01	4,38E+00	1,23E+01	6,32E+01	3,47E-01	1,28E+00	1,67E-01	-3,48E+01
Climate change - Biogenic	kg CO2 eq	-2,74E+00	3,22E-02	1,91E+00	2,23E+00	2,34E-04	2,74E+00	9,52E-04	-3,47E-02
Climate change - Land use and LU change	kg CO2 eq	8,32E-02	1,46E-03	3,14E-03	1,93E-01	1,16E-04	9,10E-05	4,06E-05	-1,72E-02
Climate change	kg CO2 eq	8,72E+01	4,41E+00	1,43E+01	6,56E+01	3,48E-01	4,03E+00	1,68E-01	-3,49E+01
GWP-GHG	kg CO2 eq	8,45E+01	4,38E+00	1,43E+01	6,17E+01	3,45E-01	1,28E+00	1,66E-01	-3,41E+01
Ozone depletion	kg CFC11 eq	1,36E-06	8,71E-08	3,32E-08	1,16E-06	6,91E-09	1,58E-08	5,24E-09	-1,69E-07
Acidification	mol H+ eq	9,15E-01	9,12E-03	5,02E-02	3,72E-01	7,23E-04	9,34E-03	1,84E-03	-1,45E-01
Eutrophication, freshwater*	kg P eq	4,99E-02	2,97E-04	2,29E-03	5,88E-02	2,35E-05	3,08E-05	2,81E-04	-1,43E-02
Eutrophication, marine	kg N eq	1,17E-01	2,19E-03	9,47E-03	5,83E-02	1,74E-04	4,34E-03	4,60E-04	-3,27E-02
Eutrophication, terrestrial	mol N eq	3,08E+00	2,36E-02	1,05E-01	5,23E-01	1,87E-03	4,74E-02	4,94E-03	-3,36E-01
Photochemical ozone formation	kg NMVOC eq	3,56E-01	1,52E-02	3,05E-02	1,72E-01	1,20E-03	1,41E-02	1,81E-03	-1,13E-01
Resource use, minerals and metals*	kg Sb eq	2,90E-03	1,42E-05	1,55E-05	8,49E-04	1,13E-06	3,71E-07	3,18E-07	-2,24E-04
Resource use, fossils*	MJ	1,16E+03	5,89E+01	8,29E-02	1,47E+03	4,89E+00	1,35E+01	3,89E+00	-3,56E+02
Water use*	m^3 depriv.	1,26E+01	6,90E-02	2,56E-01	4,97E+01	2,76E-02	5,16E-02	-2,02E+00	-9,67E+00

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

Table 246: Additional environmental impact indicators - FDMA, 800x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	9,59E-06	2,56E-07	7,10E-07	1,33E-06	2,56E-08	2,64E-07	2,80E-08	-3,13E-06
Human toxicity, non-cancer*	CTUh	2,26E-06	3,87E-08	7,28E-08	1,11E-06	3,16E-09	2,58E-09	4,67E-09	-7,74E-07
Human toxicity, cancer*	CTUh	4,73E-06	3,11E-08	2,22E-08	1,50E-07	2,47E-09	4,08E-09	9,50E-10	-3,54E-06
Land use*	Pt	8,00E+02	3,72E+01	5,95E+01	3,27E+02	2,95E+00	9,56E-01	9,55E+00	-1,12E+02
Ionising radiation**	kBq U-235 eq	8,86E+00	7,99E-02	4,02E-01	4,06E+01	6,34E-03	6,11E-03	5,21E-03	-1,08E+00
Ecotoxicity, freshwater	CTUe	2,16E+03	1,68E+01	2,23E+01	2,63E+02	1,33E+00	2,41E+00	2,86E+00	-1,16E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 247: Parameters describing resource use - FDMA, 800x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,76E+02	1,06E+00	1,46E+01	4,03E+02	8,39E-02	8,43E-02	8,08E-02	-3,17E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,76E+02	1,06E+00	1,46E+01	4,03E+02	8,39E-02	8,43E-02	8,08E-02	-3,17E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,00E+02	5,22E-03	9,11E-02	1,47E+03	4,89E+00	1,35E+01	3,89E+00	-3,56E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,00E+02	5,22E-03	9,11E-02	1,47E+03	4,89E+00	1,35E+01	3,89E+00	-3,56E+02
Use of secondary material	kg	6,13E-01	0	5,37E-04	2,43E-01	2,27E-03	5,63E-03	1,29E-03	-5,98E+00
Use of renewable secondary fuels	MJ, net calorific value	1,83E+00	0	4,35E-06	1,94E-03	2,87E-05	1,61E-05	2,34E-05	-3,74E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	5,01E-01	3,88E-03	3,08E-02	1,28E+00	6,79E-04	1,25E-03	-4,70E-02	-2,49E-01

Table 248: Other environmental information describing waste categories - FDMA, 800x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	1,63E+01	6,07E-02	1,71E-01	3,72E+00	7,13E-03	1,94E-02	6,58E-03	-1,32E+01
Non-hazardous waste disposed	kg	1,55E+02	6,77E-01	1,90E+00	2,88E+02	1,51E-01	3,23E-01	5,97E+01	-1,53E+02
Radioactive waste disposed/ stored	kg	7,41E-05	0	1,79E-07	1,04E-02	1,58E-06	1,50E-06	1,27E-06	-2,68E-04

Table 249: Environmental information describing output flows - FDMA, 800x500 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	5,41E+00	0	1,46E-01	1,53E-01	3,71E-05	5,02E-05	-6,63E-03	0
Materials for energy recovery	kg	1,75E-04	0	6,00E-08	2,06E-05	3,15E-07	9,67E-08	-1,33E-04	0
Exported energy, electricity	MJ	4,53E-02	0	1,04E-04	6,56E+00	8,41E-04	6,19E-04	1,62E-03	-8,21E-02
Exported energy, heat	MJ	3,20E-02	0	2,73E-05	2,48E-01	1,22E-03	3,42E-04	3,62E-03	-1,93E-01

Table 250: Core environmental impact indicators - FDMA, 1600x1000 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,81E+02	1,19E+01	2,26E+01	0	9,41E-01	3,97E+00	6,35E-01	-6,74E+01
Climate change - Biogenic	kg CO2 eq	-8,99E+00	8,72E-02	3,51E+00	0	6,35E-04	8,99E+00	3,62E-03	-6,45E-02
Climate change - Land use and LU change	kg CO2 eq	1,67E-01	3,95E-03	5,76E-03	0	3,13E-04	1,87E-04	1,54E-04	-3,29E-02
Climate change	kg CO2 eq	1,72E+02	1,19E+01	2,62E+01	0	9,42E-01	1,30E+01	6,39E-01	-6,75E+01
GWP-GHG	kg CO2 eq	1,67E+02	1,19E+01	2,62E+01	0	9,35E-01	3,96E+00	6,31E-01	-6,60E+01
Ozone depletion	kg CFC11 eq	3,16E-06	2,36E-07	6,10E-08	0	1,87E-08	3,13E-08	1,99E-08	-3,23E-07
Acidification	mol H+ eq	1,64E+00	2,47E-02	9,21E-02	0	1,96E-03	1,85E-02	7,00E-03	-2,81E-01
Eutrophication, freshwater*	kg P eq	9,35E-02	8,03E-04	4,21E-03	0	6,37E-05	6,45E-05	1,07E-03	-2,77E-02
Eutrophication, marine	kg N eq	2,35E-01	5,93E-03	1,74E-02	0	4,71E-04	8,63E-03	1,75E-03	-6,33E-02
Eutrophication, terrestrial	mol N eq	6,03E+00	6,40E-02	1,93E-01	0	5,08E-03	9,39E-02	1,87E-02	-6,50E-01
Photochemical ozone formation	kg NMVOC eq	7,17E-01	4,10E-02	5,60E-02	0	3,26E-03	2,79E-02	6,86E-03	-2,18E-01
Resource use, minerals and metals*	kg Sb eq	3,65E-03	3,86E-05	2,84E-05	0	3,06E-06	7,95E-07	1,21E-06	-4,36E-04
Resource use, fossils*	MJ	2,46E+03	1,60E+02	2,30E-01	0	1,32E+01	2,66E+01	1,48E+01	-6,89E+02
Water use*	m^3 depriv.	2,24E+01	1,87E-01	4,72E-01	0	7,47E-02	1,72E-01	-7,67E+00	-1,87E+01

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

Table 251: Additional environmental impact indicators - FDMA, 1600x1000 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,83E-05	6,94E-07	1,30E-06	0	6,93E-08	5,15E-07	1,06E-07	-6,08E-06
Human toxicity, non-cancer*	CTUh	2,70E-06	1,05E-07	1,34E-07	0	8,57E-09	9,44E-09	1,77E-08	-1,50E-06
Human toxicity, cancer*	CTUh	7,87E-06	8,42E-08	4,11E-08	0	6,68E-09	8,27E-09	3,61E-09	-6,88E-06
Land use*	Pt	1,91E+03	1,01E+02	1,09E+02	0	7,99E+00	1,94E+00	3,62E+01	-2,17E+02
Ionising radiation**	kBq U-235 eq	2,12E+01	2,16E-01	7,37E-01	0	1,72E-02	1,24E-02	1,98E-02	-2,03E+00
Ecotoxicity, freshwater	CTUe	3,63E+03	4,54E+01	4,15E+01	0	3,60E+00	7,66E+00	1,09E+01	-2,26E+03

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 252: Parameters describing resource use - FDMA, 1600x1000 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,08E+02	2,86E+00	2,67E+01	0	2,27E-01	1,75E-01	3,07E-01	-6,15E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,08E+02	2,86E+00	2,67E+01	0	2,27E-01	1,75E-01	3,07E-01	-6,15E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,42E+02	1,41E-02	2,45E-01	0	1,32E+01	2,66E+01	1,48E+01	-6,89E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,42E+02	1,41E-02	2,45E-01	0	1,32E+01	2,66E+01	1,48E+01	-6,89E+02
Use of secondary material	kg	1,66E+00	0	1,49E-03	0	6,14E-03	1,12E-02	4,91E-03	-1,16E+01
Use of renewable secondary fuels	MJ, net calorific value	4,95E+00	0	1,21E-05	0	7,77E-05	3,98E-05	8,88E-05	-7,27E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	9,63E-01	1,05E-02	5,62E-02	0	1,84E-03	4,09E-03	-1,78E-01	-4,83E-01

Table 253: Other environmental information describing waste categories - FDMA, 1600x1000 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	2,62E+01	1,64E-01	3,16E-01	0	1,93E-02	6,31E-02	2,50E-02	-2,57E+01
Non-hazardous waste disposed	kg	2,78E+02	1,83E+00	4,02E+00	0	4,08E-01	1,31E+00	2,27E+02	-2,96E+02
Radioactive waste disposed/stored	kg	2,01E-04	0	4,98E-07	0	4,27E-06	3,05E-06	4,84E-06	-5,07E-04

Table 254: Environmental information describing output flows - FDMA, 1600x1000 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,46E+01	0	4,05E-01	0	1,01E-04	3,55E+01	1,91E-04	-1,29E-02
Materials for energy recovery	kg	4,75E-04	0	1,67E-07	0	8,52E-07	2,11E-01	3,67E-07	-2,58E-04
Exported energy, electricity	MJ	1,23E-01	0	2,90E-04	0	2,28E-03	1,26E-03	6,14E-03	-1,60E-01
Exported energy, heat	MJ	8,67E-02	0	7,57E-05	0	3,30E-03	7,88E-04	1,38E-02	-3,75E-01

Table 255: Core environmental impact indicators - FDMA, 1600x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,01E+02	1,20E+01	2,29E+01	1,15E+02	9,54E-01	3,88E+00	6,32E-01	-6,50E+01
Climate change - Biogenic	kg CO2 eq	-8,76E+00	8,84E-02	3,55E+00	4,05E+00	6,44E-04	8,76E+00	3,60E-03	-6,35E-02
Climate change - Land use and LU change	kg CO2 eq	1,93E-01	4,00E-03	5,83E-03	3,50E-01	3,17E-04	1,80E-04	1,53E-04	-3,20E-02
Climate change	kg CO2 eq	1,92E+02	1,21E+01	2,65E+01	1,19E+02	9,55E-01	1,26E+01	6,36E-01	-6,51E+01
GWP-GHG	kg CO2 eq	1,86E+02	1,20E+01	2,65E+01	1,12E+02	9,48E-01	3,87E+00	6,28E-01	-6,36E+01
Ozone depletion	kg CFC11 eq	3,29E-06	2,39E-07	6,17E-08	2,12E-06	1,90E-08	3,02E-08	1,98E-08	-3,13E-07
Acidification	mol H+ eq	1,86E+00	2,50E-02	9,32E-02	6,76E-01	1,99E-03	1,78E-02	6,97E-03	-2,71E-01
Eutrophication, freshwater*	kg P eq	1,13E-01	8,15E-04	4,26E-03	1,07E-01	6,46E-05	6,22E-05	1,06E-03	-2,67E-02
Eutrophication, marine	kg N eq	2,60E-01	6,02E-03	1,76E-02	1,06E-01	4,77E-04	8,31E-03	1,74E-03	-6,12E-02
Eutrophication, terrestrial	mol N eq	6,18E+00	6,49E-02	1,95E-01	9,51E-01	5,15E-03	9,04E-02	1,87E-02	-6,29E-01
Photochemical ozone formation	kg NMVOC eq	8,11E-01	4,16E-02	5,67E-02	3,13E-01	3,30E-03	2,69E-02	6,83E-03	-2,11E-01
Resource use, minerals and metals*	kg Sb eq	5,74E-03	3,91E-05	2,88E-05	1,54E-03	3,10E-06	7,68E-07	1,20E-06	-4,20E-04
Resource use, fossils*	MJ	2,68E+03	1,62E+02	2,30E-01	2,67E+03	1,34E+01	2,56E+01	1,47E+01	-6,63E+02
Water use*	m^3 depriv.	2,60E+01	1,89E-01	4,78E-01	9,04E+01	7,57E-02	1,68E-01	-7,63E+00	-1,80E+01

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

Table 256: Additional environmental impact indicators - FDMA, 1600x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,98E-05	7,04E-07	1,32E-06	2,41E-06	7,03E-08	4,96E-07	1,06E-07	-5,86E-06
Human toxicity, non-cancer*	CTUh	4,63E-06	1,06E-07	1,35E-07	2,02E-06	8,69E-09	9,28E-09	1,76E-08	-1,45E-06
Human toxicity, cancer*	CTUh	8,99E-06	8,53E-08	4,16E-08	2,73E-07	6,78E-09	7,98E-09	3,59E-09	-6,62E-06
Land use*	Pt	2,03E+03	1,02E+02	1,11E+02	5,95E+02	8,11E+00	1,87E+00	3,61E+01	-2,10E+02
Ionising radiation**	kBq U-235 eq	2,22E+01	2,19E-01	7,46E-01	7,39E+01	1,74E-02	1,20E-02	1,97E-02	-1,96E+00
Ecotoxicity, freshwater	CTUe	4,16E+03	4,60E+01	4,20E+01	4,78E+02	3,66E+00	7,50E+00	1,08E+01	-2,17E+03

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 257: Parameters describing resource use - FDMA, 1600x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,36E+02	2,90E+00	2,70E+01	7,33E+02	2,30E-01	1,69E-01	3,05E-01	-5,92E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,36E+02	2,90E+00	2,70E+01	7,33E+02	2,30E-01	1,69E-01	3,05E-01	-5,92E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,50E+02	1,43E-02	2,45E-01	2,67E+03	1,34E+01	2,56E+01	1,47E+01	-6,63E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,50E+02	1,43E-02	2,45E-01	2,67E+03	1,34E+01	2,56E+01	1,47E+01	-6,63E+02
Use of secondary material	kg	1,68E+00	0	1,49E-03	4,42E-01	6,23E-03	1,08E-02	4,89E-03	-1,12E+01
Use of renewable secondary fuels	MJ, net calorific value	5,02E+00	0	1,21E-05	3,53E-03	7,87E-05	3,87E-05	8,84E-05	-7,00E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,08E+00	1,07E-02	5,69E-02	2,32E+00	1,86E-03	4,01E-03	-1,77E-01	-4,65E-01

Table 258: Other environmental information describing waste categories - FDMA, 1600x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	3,13E+01	1,67E-01	3,20E-01	6,77E+00	1,96E-02	6,18E-02	2,49E-02	-2,48E+01
Non-hazardous waste disposed	kg	3,11E+02	1,86E+00	4,05E+00	5,23E+02	4,14E-01	1,29E+00	2,26E+02	-2,85E+02
Radioactive waste disposed/ stored	kg	2,04E-04	0	4,98E-07	1,90E-02	4,33E-06	2,94E-06	4,82E-06	-4,88E-04

Table 259: Environmental information describing output flows - FDMA, 1600x1000 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,49E+01	0	4,05E-01	2,77E-01	1,02E-04	3,72E+01	1,90E-04	-1,24E-02
Materials for energy recovery	kg	4,82E-04	0	1,67E-07	3,74E-05	8,64E-07	2,10E-01	3,65E-07	-2,49E-04
Exported energy, electricity	MJ	1,25E-01	0	2,90E-04	1,19E+01	2,31E-03	1,22E-03	6,11E-03	-1,54E-01
Exported energy, heat	MJ	8,80E-02	0	7,57E-05	4,50E-01	3,34E-03	7,64E-04	1,37E-02	-3,61E-01

Table 260: Core environmental impact indicators - FDMR 60, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,06E+01	3,78E-01	7,62E+00	0	3,00E-02	7,42E-01	1,19E-03	-5,57E+00
Climate change - Biogenic	kg CO2 eq	-1,76E-01	2,78E-03	1,19E+00	0	2,03E-05	1,76E-01	6,79E-06	-6,94E-03
Climate change - Land use and LU change	kg CO2 eq	8,57E-03	1,26E-04	1,93E-03	0	9,98E-06	1,89E-05	2,89E-07	-2,85E-03
Climate change	kg CO2 eq	1,04E+01	3,81E-01	8,81E+00	0	3,00E-02	9,18E-01	1,20E-03	-5,58E+00
GWP-GHG	kg CO2 eq	1,01E+01	3,78E-01	8,81E+00	0	2,98E-02	7,41E-01	1,18E-03	-5,45E+00
Ozone depletion	kg CFC11 eq	1,66E-07	7,52E-09	2,05E-08	0	5,97E-10	2,90E-09	3,73E-11	-3,04E-08
Acidification	mol H+ eq	9,96E-02	7,88E-04	3,11E-02	0	6,25E-05	1,71E-03	1,31E-05	-2,28E-02
Eutrophication, freshwater*	kg P eq	5,40E-03	2,56E-05	1,42E-03	0	2,03E-06	6,90E-06	2,00E-06	-2,42E-03
Eutrophication, marine	kg N eq	1,29E-02	1,89E-04	5,83E-03	0	1,50E-05	8,08E-04	3,28E-06	-5,17E-03
Eutrophication, terrestrial	mol N eq	3,29E-01	2,04E-03	6,50E-02	0	1,62E-04	8,67E-03	3,52E-05	-5,27E-02
Photochemical ozone formation	kg NMVOC eq	4,07E-02	1,31E-03	1,89E-02	0	1,04E-04	2,56E-03	1,29E-05	-1,77E-02
Resource use, minerals and metals*	kg Sb eq	3,19E-04	1,23E-06	9,52E-06	0	9,75E-08	8,94E-08	2,27E-09	-3,46E-05
Resource use, fossils*	MJ	1,39E+02	1,29E+01	7,21E-03	0	4,22E-01	2,41E+00	2,77E-02	-5,86E+01
Water use*	m^3 depriv.	1,57E+00	5,96E-03	1,57E-01	0	2,38E-03	3,41E-02	-1,44E-02	-1,55E+00

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

Table 261: Additional environmental impact indicators - FDMR 60, DN 100 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,09E-06	2,21E-08	4,39E-07	0	2,21E-09	4,57E-08	2,00E-10	-4,82E-07
Human toxicity, non-cancer*	CTUh	2,58E-07	3,34E-09	4,50E-08	0	2,73E-10	2,01E-09	3,33E-11	-1,20E-07
Human toxicity, cancer*	CTUh	6,21E-07	2,68E-09	1,36E-08	0	2,13E-10	8,16E-10	6,77E-12	-5,44E-07
Land use*	Pt	7,81E+01	3,21E+00	3,68E+01	0	2,55E-01	1,92E-01	6,80E-02	-1,74E+01
Ionising radiation**	kBq U-235 eq	8,64E-01	6,90E-03	2,48E-01	0	5,48E-04	1,23E-03	3,71E-05	-2,30E-01
Ecotoxicity, freshwater	CTUe	2,75E+02	1,45E+00	1,34E+01	0	1,15E-01	1,46E+00	2,04E-02	-1,79E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 262: Parameters describing resource use - FDMR 60, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	1,76E+01	9,14E-02	9,01E+00	0	7,25E-03	1,85E-02	5,76E-04	-5,00E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	1,76E+01	9,14E-02	9,01E+00	0	7,25E-03	1,85E-02	5,76E-04	-5,00E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,96E+01	4,51E-04	1,22E-02	0	4,22E-01	2,41E+00	2,77E-02	-5,86E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,96E+01	4,51E-04	1,22E-02	0	4,22E-01	2,41E+00	2,77E-02	-5,86E+01
Use of secondary material	kg	5,36E-02	0	4,67E-05	0	1,96E-04	1,05E-03	9,22E-06	-9,20E-01
Use of renewable secondary fuels	MJ, net calorific value	1,58E-01	0	3,78E-07	0	2,48E-06	5,79E-06	1,67E-07	-5,75E-04
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	5,85E-02	3,35E-04	1,93E-02	0	5,87E-05	8,04E-04	-3,35E-04	-3,99E-02

Table 263: Other environmental information describing waste categories - FDMR 60, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	2,09E+00	5,24E-03	1,05E-01	0	6,16E-04	1,23E-02	4,69E-05	-2,04E+00
Non-hazardous waste disposed	kg	2,14E+01	5,85E-02	8,69E-01	0	1,30E-02	2,99E-01	4,25E-01	-2,45E+01
Radioactive waste disposed/stored	kg	8,74E-06	0	1,56E-08	0	1,36E-07	3,03E-07	9,08E-09	-5,68E-05

Table 264: Environmental information describing output flows - FDMR 60, DN 100 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	4,67E-01	0	1,27E-02	0	3,21E-06	2,80E+00	3,58E-07	-1,06E-03
Materials for energy recovery	kg	1,53E-05	0	5,22E-09	0	2,72E-08	2,38E-01	6,89E-10	-2,05E-05
Exported energy, electricity	MJ	5,12E-03	0	9,07E-06	0	7,26E-05	1,27E-04	1,15E-05	-1,28E-02
Exported energy, heat	MJ	3,53E-03	0	2,37E-06	0	1,05E-04	1,02E-04	2,58E-05	-3,00E-02

Table 265: Core environmental impact indicators - FDMR 60, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,31E+01	3,73E-01	7,53E+00	6,32E+01	2,96E-02	6,92E-01	1,18E-03	-3,60E+00
Climate change - Biogenic	kg CO2 eq	-1,14E-01	2,75E-03	1,17E+00	2,23E+00	2,00E-05	4,29E-01	6,70E-06	-4,65E-03
Climate change - Land use and LU change	kg CO2 eq	1,51E-02	1,24E-04	1,91E-03	1,93E-01	9,86E-06	3,40E-05	2,85E-07	-1,91E-03
Climate change	kg CO2 eq	1,30E+01	3,76E-01	8,70E+00	6,56E+01	2,97E-02	1,12E+00	1,18E-03	-3,61E+00
GWP-GHG	kg CO2 eq	1,26E+01	3,65E-01	8,70E+00	6,17E+01	2,94E-02	6,90E-01	1,17E-03	-3,53E+00
Ozone depletion	kg CFC11 eq	1,81E-07	7,43E-09	2,03E-08	1,16E-06	5,89E-10	2,16E-09	3,68E-11	-1,94E-08
Acidification	mol H+ eq	1,62E-01	7,78E-04	3,07E-02	3,72E-01	6,17E-05	1,31E-03	1,30E-05	-1,49E-02
Eutrophication, freshwater*	kg P eq	1,00E-02	2,53E-05	1,40E-03	5,88E-02	2,01E-06	1,07E-05	1,97E-06	-1,52E-03
Eutrophication, marine	kg N eq	1,75E-02	1,87E-04	5,76E-03	5,83E-02	1,48E-05	5,83E-04	3,24E-06	-3,41E-03
Eutrophication, terrestrial	mol N eq	3,85E-01	2,02E-03	6,42E-02	5,23E-01	1,60E-04	6,35E-03	3,47E-05	-3,49E-02
Photochemical ozone formation	kg NMVOC eq	5,75E-02	1,29E-03	1,86E-02	1,72E-01	1,03E-04	1,81E-03	1,27E-05	-1,17E-02
Resource use, minerals and metals*	kg Sb eq	9,58E-04	1,22E-06	9,40E-06	8,49E-04	9,63E-08	3,00E-07	2,24E-09	-2,25E-05
Resource use, fossils*	MJ	1,61E+02	1,28E+01	7,12E-03	1,47E+03	4,17E-01	1,83E+00	2,74E-02	-3,71E+01
Water use*	m^3 depriv.	2,01E+00	5,89E-03	1,55E-01	4,97E+01	2,35E-03	3,35E-02	-1,42E-02	-9,92E-01

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

Table 266: Additional environmental impact indicators - FDMR 60, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,35E-06	2,19E-08	4,34E-07	1,33E-06	2,18E-09	3,18E-08	1,97E-10	-3,15E-07
Human toxicity, non-cancer*	CTUh	7,92E-07	3,30E-09	4,44E-08	1,11E-06	2,70E-10	5,92E-09	3,29E-11	-7,78E-08
Human toxicity, cancer*	CTUh	6,56E-07	2,65E-09	1,34E-08	1,50E-07	2,10E-10	8,74E-10	6,68E-12	-3,52E-07
Land use*	Pt	9,77E+01	3,17E+00	3,63E+01	3,27E+02	2,52E-01	5,75E-01	6,72E-02	-1,16E+01
Ionising radiation**	kBq U-235 eq	1,02E+00	6,81E-03	2,45E-01	4,06E+01	5,41E-04	1,78E-03	3,67E-05	-1,37E-01
Ecotoxicity, freshwater	CTUe	3,38E+02	1,43E+00	1,32E+01	2,63E+02	1,14E-01	3,70E+00	2,01E-02	-1,16E+02

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Table 267: Parameters describing resource use - FDMR 60, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,21E+01	9,02E-02	8,90E+00	4,03E+02	7,15E-03	5,34E-02	5,69E-04	-3,22E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,21E+01	9,02E-02	8,90E+00	4,03E+02	7,15E-03	5,34E-02	5,69E-04	-3,22E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	1,71E+01	4,45E-04	1,21E-02	1,47E+03	4,17E-01	1,83E+00	2,74E-02	-3,71E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	1,71E+01	4,45E-04	1,21E-02	1,47E+03	4,17E-01	1,83E+00	2,74E-02	-3,71E+01
Use of secondary material	kg	5,23E-02	0	4,61E-05	2,43E-01	1,93E-04	1,03E-03	9,10E-06	-5,95E-01
Use of renewable secondary fuels	MJ, net calorific value	1,56E-01	0	3,73E-07	1,94E-03	2,45E-06	1,90E-04	1,65E-07	-3,72E-04
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	7,33E-02	3,31E-04	1,90E-02	1,28E+00	5,79E-05	7,97E-04	-3,31E-04	-2,55E-02

Table 268: Other environmental information describing waste categories - FDMR 60, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	2,69E+00	5,18E-03	1,04E-01	3,72E+00	6,08E-04	3,41E-02	4,63E-05	-1,32E+00
Non-hazardous waste disposed	kg	2,20E+01	5,77E-02	8,58E-01	2,88E+02	1,28E-02	2,88E-01	4,20E-01	-1,56E+01
Radioactive waste disposed/ stored	kg	6,32E-06	0,00E+00	1,54E-08	1,04E-02	1,34E-07	4,40E-07	8,97E-09	-3,37E-05

Table 269: Environmental information describing output flows - FDMR 60, DN 100 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	4,61E-01	0	1,25E-02	1,53E-01	3,17E-06	2,91E+00	3,54E-07	-6,77E-04
Materials for energy recovery	kg	1,50E-05	0	5,15E-09	2,06E-05	2,68E-08	1,13E-01	6,80E-10	-1,32E-05
Exported energy, electricity	MJ	3,87E-03	0	8,95E-06	6,56E+00	7,17E-05	1,71E-04	1,14E-05	-8,22E-03
Exported energy, heat	MJ	2,73E-03	0	2,34E-06	2,48E-01	1,04E-04	1,60E-04	2,55E-05	-1,93E-02

Table 270: Core environmental impact indicators - FDMR 60, DN 200 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,47E+01	5,54E-01	2,29E+01	0	4,40E-02	9,30E-01	4,44E-03	-7,71E+00
Climate change - Biogenic	kg CO2 eq	-2,73E-01	4,08E-03	3,56E+00	0	2,97E-05	2,73E-01	2,53E-05	-9,30E-03
Climate change - Land use and LU change	kg CO2 eq	1,20E-02	1,85E-04	5,80E-03	0	1,46E-05	2,57E-05	1,08E-06	-3,93E-03
Climate change	kg CO2 eq	1,44E+01	5,58E-01	2,64E+01	0	4,40E-02	1,20E+00	4,47E-03	-7,73E+00
GWP-GHG	kg CO2 eq	1,40E+01	5,54E-01	2,64E+01	0	4,37E-02	9,28E-01	4,41E-03	-7,55E+00
Ozone depletion	kg CFC11 eq	2,20E-07	1,10E-08	6,15E-08	0	8,74E-10	4,00E-09	1,39E-10	-4,14E-08
Acidification	mol H+ eq	1,42E-01	1,15E-03	9,32E-02	0	9,16E-05	2,36E-03	4,89E-05	-3,17E-02
Eutrophication, freshwater*	kg P eq	7,39E-03	3,75E-05	4,26E-03	0	2,98E-06	9,28E-06	7,44E-06	-3,32E-03
Eutrophication, marine	kg N eq	1,81E-02	2,77E-04	1,75E-02	0	2,20E-05	1,11E-03	1,22E-05	-7,16E-03
Eutrophication, terrestrial	mol N eq	4,87E-01	2,99E-03	1,95E-01	0	2,37E-04	1,20E-02	1,31E-04	-7,31E-02
Photochemical ozone formation	kg NMVOC eq	5,63E-02	1,92E-03	5,66E-02	0	1,52E-04	3,53E-03	4,79E-05	-2,46E-02
Resource use, minerals and metals*	kg Sb eq	4,20E-04	1,80E-06	2,85E-05	0	1,43E-07	1,19E-07	8,44E-09	-4,81E-05
Resource use, fossils*	MJ	1,92E+02	1,89E+01	1,06E-02	0	6,19E-01	3,33E+00	1,03E-01	-8,08E+01
Water use*	m^3 depriv.	2,16E+00	8,73E-03	4,72E-01	0	3,49E-03	4,25E-02	-5,36E-02	-2,15E+00

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

Table 271: Additional environmental impact indicators - FDMR 60, DN 200 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,56E-06	3,24E-08	1,32E-06	0	3,24E-09	6,35E-08	7,44E-10	-6,71E-07
Human toxicity, non-cancer*	CTUh	3,31E-07	4,90E-09	1,35E-07	0	4,00E-10	2,49E-09	1,24E-10	-1,67E-07
Human toxicity, cancer*	CTUh	8,65E-07	3,93E-09	4,07E-08	0	3,12E-10	1,11E-09	2,52E-11	-7,57E-07
Land use*	Pt	1,11E+02	4,70E+00	1,10E+02	0	3,74E-01	2,62E-01	2,53E-01	-2,42E+01
Ionising radiation**	kBq U-235 eq	1,24E+00	1,01E-02	7,45E-01	0	8,03E-04	1,68E-03	1,38E-04	-3,07E-01
Ecotoxicity, freshwater	CTUe	3,82E+02	2,12E+00	4,01E+01	0	1,68E-01	1,83E+00	7,59E-02	-2,49E+02

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** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 272: Parameters describing resource use - FDMR 60, DN 200 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,51E+01	1,34E-01	2,70E+01	0	1,06E-02	2,49E-02	2,14E-03	-6,94E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,51E+01	1,34E-01	2,70E+01	0	1,06E-02	2,49E-02	2,14E-03	-6,94E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,76E+01	6,60E-04	2,57E-02	0	6,19E-01	3,33E+00	1,03E-01	-8,08E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,76E+01	6,60E-04	2,57E-02	0	6,19E-01	3,33E+00	1,03E-01	-8,08E+01
Use of secondary material	kg	7,82E-02	0	6,87E-05	0	2,87E-04	1,45E-03	3,43E-05	-1,28E+00
Use of renewable secondary fuels	MJ, net calorific value	2,31E-01	0	5,56E-07	0	3,63E-06	7,46E-06	6,21E-07	-8,01E-04
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	8,17E-02	4,92E-04	5,79E-02	0	8,59E-05	1,00E-03	-1,25E-03	-5,52E-02

Table 273: Other environmental information describing waste categories - FDMR 60, DN 200 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	2,89E+00	7,68E-03	3,15E-01	0	9,02E-04	1,54E-02	1,75E-04	-2,84E+00
Non-hazardous waste disposed	kg	2,92E+01	8,57E-02	2,53E+00	0	1,91E-02	3,68E-01	1,58E+00	-3,39E+01
Radioactive waste disposed/stored	kg	1,17E-05	0	2,30E-08	0	1,99E-07	4,13E-07	3,38E-08	-7,59E-05

Table 274: Environmental information describing output flows - FDMR 60, DN 200 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	6,85E-01	0	1,86E-02	0	4,70E-06	3,90E+00	1,33E-06	-1,47E-03
Materials for energy recovery	kg	2,24E-05	0	7,68E-09	0	3,98E-08	2,88E-01	2,56E-09	-2,85E-05
Exported energy, electricity	MJ	6,94E-03	0	1,33E-05	0	1,06E-04	1,72E-04	4,29E-05	-1,77E-02
Exported energy, heat	MJ	4,81E-03	0	3,49E-06	0	1,54E-04	1,34E-04	9,61E-05	-4,17E-02

Table 275: Core environmental impact indicators - FDMR 60, DN 200 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	1,74E+01	5,49E-01	2,27E+01	6,32E+01	4,36E-02	7,61E-01	4,40E-03	-5,73E+00
Climate change - Biogenic	kg CO2 eq	-2,08E-01	4,04E-03	3,53E+00	2,23E+00	2,94E-05	2,08E-01	2,50E-05	-6,95E-03
Climate change - Land use and LU change	kg CO2 eq	1,84E-02	1,83E-04	5,75E-03	1,93E-01	1,45E-05	4,00E-05	1,07E-06	-2,98E-03
Climate change	kg CO2 eq	1,72E+01	5,54E-01	2,62E+01	6,56E+01	4,36E-02	9,69E-01	4,43E-03	-5,74E+00
GWP-GHG	kg CO2 eq	1,66E+01	5,49E-01	2,62E+01	6,17E+01	4,33E-02	7,59E-01	4,37E-03	-5,61E+00
Ozone depletion	kg CFC11 eq	2,59E-07	1,09E-08	6,10E-08	1,16E-06	8,67E-10	3,22E-09	1,38E-10	-3,02E-08
Acidification	mol H+ eq	1,95E-01	1,14E-03	9,24E-02	3,72E-01	9,08E-05	1,93E-03	4,85E-05	-2,37E-02
Eutrophication, freshwater*	kg P eq	1,20E-02	3,72E-05	4,22E-03	5,88E-02	2,95E-06	1,27E-05	7,38E-06	-2,42E-03
Eutrophication, marine	kg N eq	2,25E-02	2,75E-04	1,73E-02	5,83E-02	2,18E-05	8,72E-04	1,21E-05	-5,40E-03
Eutrophication, terrestrial	mol N eq	4,98E-01	2,97E-03	1,93E-01	5,23E-01	2,35E-04	9,51E-03	1,30E-04	-5,53E-02
Photochemical ozone formation	kg NMVOC eq	7,35E-02	1,90E-03	5,61E-02	1,72E-01	1,51E-04	2,75E-03	4,75E-05	-1,85E-02
Resource use, minerals and metals*	kg Sb eq	1,03E-03	1,79E-06	2,83E-05	8,49E-04	1,42E-07	3,24E-07	8,37E-09	-3,60E-05
Resource use, fossils*	MJ	2,15E+02	1,88E+01	1,05E-02	1,47E+03	6,13E-01	2,74E+00	1,02E-01	-5,92E+01
Water use*	m^3 depriv.	2,64E+00	8,66E-03	4,68E-01	4,97E+01	3,46E-03	3,61E-02	-5,31E-02	-1,59E+00

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

Table 276: Additional environmental impact indicators - FDMR 60, DN 200 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	1,77E-06	3,22E-08	1,31E-06	1,33E-06	3,21E-09	4,95E-08	7,38E-10	-5,04E-07
Human toxicity, non-cancer*	CTUh	8,62E-07	4,85E-09	1,34E-07	1,11E-06	3,97E-10	6,04E-09	1,23E-10	-1,25E-07
Human toxicity, cancer*	CTUh	9,22E-07	3,90E-09	4,04E-08	1,50E-07	3,10E-10	1,14E-09	2,50E-11	-5,65E-07
Land use*	Pt	1,31E+02	4,66E+00	1,09E+02	3,27E+02	3,70E-01	6,38E-01	2,51E-01	-1,84E+01
Ionising radiation**	kBq U-235 eq	1,39E+00	1,00E-02	7,38E-01	4,06E+01	7,96E-04	2,19E-03	1,37E-04	-2,11E-01
Ecotoxicity, freshwater	CTUe	4,43E+02	2,10E+00	3,97E+01	2,63E+02	1,67E-01	3,83E+00	7,52E-02	-1,86E+02

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Table 277: Parameters describing resource use - FDMR 60, DN 200 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	2,97E+01	1,33E-01	2,68E+01	4,03E+02	1,05E-02	5,90E-02	2,13E-03	-5,15E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	2,97E+01	1,33E-01	2,68E+01	4,03E+02	1,05E-02	5,90E-02	2,13E-03	-5,15E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	2,52E+01	6,55E-04	2,55E-02	1,47E+03	6,13E-01	2,74E+00	1,02E-01	-5,92E+01
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	2,52E+01	6,55E-04	2,55E-02	1,47E+03	6,13E-01	2,74E+00	1,02E-01	-5,92E+01
Use of secondary material	kg	7,70E-02	0	6,81E-05	2,43E-01	2,85E-04	1,41E-03	3,40E-05	-9,56E-01
Use of renewable secondary fuels	MJ, net calorific value	2,29E-01	0	5,51E-07	1,94E-03	3,60E-06	1,91E-04	6,15E-07	-5,98E-04
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	9,76E-02	4,87E-04	5,74E-02	1,28E+00	8,52E-05	8,61E-04	-1,24E-03	-4,08E-02

Table 278: Other environmental information describing waste categories - FDMR 60, DN 200 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	3,56E+00	7,62E-03	3,13E-01	3,72E+00	8,95E-04	3,51E-02	1,73E-04	-2,12E+00
Non-hazardous waste disposed	kg	3,06E+01	8,49E-02	2,51E+00	2,88E+02	1,89E-02	3,01E-01	1,57E+00	-2,50E+01
Radioactive waste disposed/ stored	kg	9,30E-06	0	2,28E-08	1,04E-02	1,98E-07	5,39E-07	3,35E-08	-5,21E-05

Table 279: Environmental information describing output flows - FDMR 60, DN 200 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	6,79E-01	0	1,85E-02	1,53E-01	4,66E-06	4,01E+00	1,32E-06	-1,08E-03
Materials for energy recovery	kg	2,20E-05	0	7,61E-09	2,06E-05	3,95E-08	1,55E-01	2,54E-09	-2,13E-05
Exported energy, electricity	MJ	5,69E-03	0	1,32E-05	6,56E+00	1,05E-04	2,12E-04	4,26E-05	-1,32E-02
Exported energy, heat	MJ	4,02E-03	0	3,46E-06	2,48E-01	1,53E-04	1,82E-04	9,53E-05	-3,10E-02

Table 280: Core environmental impact indicators - FDMR 60, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,68E+01	1,08E+00	4,33E+01	0	8,60E-02	1,60E+00	1,80E-02	-1,34E+01
Climate change - Biogenic	kg CO2 eq	-5,56E-01	7,97E-03	6,72E+00	0	5,80E-05	5,56E-01	1,03E-04	-1,61E-02
Climate change - Land use and LU change	kg CO2 eq	2,28E-02	3,61E-04	1,10E-02	0	2,86E-05	4,45E-05	4,37E-06	-6,79E-03
Climate change	kg CO2 eq	2,63E+01	1,09E+00	5,00E+01	0	8,61E-02	2,16E+00	1,81E-02	-1,34E+01
GWP-GHG	kg CO2 eq	2,55E+01	1,08E+00	5,00E+01	0	8,54E-02	1,60E+00	1,79E-02	-1,31E+01
Ozone depletion	kg CFC11 eq	4,64E-07	2,15E-08	1,16E-07	0	1,71E-09	6,92E-09	5,64E-10	-7,16E-08
Acidification	mol H+ eq	2,72E-01	2,26E-03	1,76E-01	0	1,79E-04	4,09E-03	1,99E-04	-5,49E-02
Eutrophication, freshwater*	kg P eq	1,40E-02	7,34E-05	8,05E-03	0	5,82E-06	1,61E-05	3,02E-05	-5,75E-03
Eutrophication, marine	kg N eq	3,38E-02	5,42E-04	3,31E-02	0	4,30E-05	1,93E-03	4,96E-05	-1,24E-02
Eutrophication, terrestrial	mol N eq	9,33E-01	5,85E-03	3,69E-01	0	4,64E-04	2,07E-02	5,32E-04	-1,27E-01
Photochemical ozone formation	kg NMVOC eq	1,05E-01	3,75E-03	1,07E-01	0	2,98E-04	6,12E-03	1,95E-04	-4,25E-02
Resource use, minerals and metals*	kg Sb eq	8,46E-04	3,53E-06	5,41E-05	0	2,79E-07	2,06E-07	3,43E-08	-8,33E-05
Resource use, fossils*	MJ	3,55E+02	3,70E+01	2,04E-01	0	1,21E+00	5,78E+00	4,19E-01	-1,40E+02
Water use*	m^3 depriv.	3,88E+00	1,71E-02	8,98E-01	0	6,82E-03	7,33E-02	-2,18E-01	-3,72E+00

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Table 281: Additional environmental impact indicators - FDMR 60, DN 400 mm manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	2,90E-06	6,34E-08	2,49E-06	0	6,33E-09	1,10E-07	3,02E-09	-1,16E-06
Human toxicity, non-cancer*	CTUh	6,40E-07	9,57E-09	2,55E-07	0	7,83E-10	4,29E-09	5,03E-10	-2,89E-07
Human toxicity, cancer*	CTUh	1,51E-06	7,69E-09	7,77E-08	0	6,10E-10	1,93E-09	1,02E-10	-1,31E-06
Land use*	Pt	2,14E+02	9,19E+00	2,09E+02	0	7,30E-01	4,53E-01	1,03E+00	-4,19E+01
Ionising radiation**	kBq U-235 eq	2,41E+00	1,98E-02	1,41E+00	0	1,57E-03	2,90E-03	5,62E-04	-5,31E-01
Ecotoxicity, freshwater	CTUe	6,90E+02	4,15E+00	7,61E+01	0	3,29E-01	3,16E+00	3,08E-01	-4,31E+02

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 282: Parameters describing resource use - FDMR 60, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,80E+01	2,62E-01	5,11E+01	0	2,08E-02	4,31E-02	8,71E-03	-1,20E+01
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,80E+01	2,62E-01	5,11E+01	0	2,08E-02	4,31E-02	8,71E-03	-1,20E+01
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	5,37E+01	1,29E-03	2,33E-01	0	1,21E+00	5,78E+00	4,19E-01	-1,40E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	5,37E+01	1,29E-03	2,33E-01	0	1,21E+00	5,78E+00	4,19E-01	-1,40E+02
Use of secondary material	kg	1,53E-01	0	1,34E-03	0	5,61E-04	2,51E-03	1,39E-04	-2,22E+00
Use of renewable secondary fuels	MJ, net calorific value	4,52E-01	0	1,09E-05	0	7,09E-06	1,29E-05	2,52E-06	-1,39E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,49E-01	9,61E-04	1,09E-01	0	1,68E-04	1,73E-03	-5,06E-03	-9,56E-02

Table 283: Other environmental information describing waste categories - FDMR 60, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	5,13E+00	1,50E-02	6,00E-01	0	1,76E-03	2,65E-02	7,09E-04	-4,91E+00
Non-hazardous waste disposed	kg	5,15E+01	1,67E-01	4,90E+00	0	3,73E-02	6,34E-01	6,43E+00	-5,87E+01
Radioactive waste disposed/stored	kg	2,25E-05	0	4,49E-07	0	3,90E-07	7,16E-07	1,37E-07	-1,31E-04

Table 284: Environmental information describing output flows - FDMR 60, DN 400 mm, manual

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,34E+00	0	3,65E-01	0	9,19E-06	6,76E+00	5,42E-06	-2,54E-03
Materials for energy recovery	kg	4,37E-05	0	1,50E-07	0	7,79E-08	4,96E-01	1,04E-08	-4,93E-05
Exported energy, electricity	MJ	1,34E-02	0	2,61E-04	0	2,08E-04	2,98E-04	1,74E-04	-3,07E-02
Exported energy, heat	MJ	9,29E-03	0	6,82E-05	0	3,01E-04	2,31E-04	3,90E-04	-7,21E-02

Table 285: Core environmental impact indicators - FDMR 60, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Climate change - Fossil	kg CO2 eq	2,64E+01	9,74E-01	3,89E+01	6,32E+01	7,73E-02	1,23E+00	1,62E-02	-9,86E+00
Climate change - Biogenic	kg CO2 eq	-4,61E-01	7,16E-03	6,04E+00	2,23E+00	5,22E-05	4,61E-01	9,23E-05	-1,16E-02
Climate change - Land use and LU change	kg CO2 eq	2,59E-02	3,24E-04	9,88E-03	1,93E-01	2,57E-05	5,12E-05	3,93E-06	-5,05E-03
Climate change	kg CO2 eq	2,60E+01	9,82E-01	4,50E+01	6,56E+01	7,74E-02	1,69E+00	1,63E-02	-9,88E+00
GWP-GHG	kg CO2 eq	2,52E+01	9,74E-01	4,49E+01	6,17E+01	7,68E-02	1,23E+00	1,61E-02	-9,65E+00
Ozone depletion	kg CFC11 eq	4,25E-07	1,94E-08	1,05E-07	1,16E-06	1,54E-09	4,90E-09	5,08E-10	-5,17E-08
Acidification	mol H+ eq	2,79E-01	2,03E-03	1,58E-01	3,72E-01	1,61E-04	2,92E-03	1,79E-04	-4,08E-02
Eutrophication, freshwater*	kg P eq	1,64E-02	6,60E-05	7,24E-03	5,88E-02	5,24E-06	1,68E-05	2,72E-05	-4,17E-03
Eutrophication, marine	kg N eq	3,38E-02	4,88E-04	2,98E-02	5,83E-02	3,87E-05	1,34E-03	4,46E-05	-9,25E-03
Eutrophication, terrestrial	mol N eq	8,03E-01	5,26E-03	3,32E-01	5,23E-01	4,17E-04	1,45E-02	4,79E-04	-9,46E-02
Photochemical ozone formation	kg NMVOC eq	1,08E-01	3,37E-03	9,63E-02	1,72E-01	2,68E-04	4,24E-03	1,75E-04	-3,17E-02
Resource use, minerals and metals*	kg Sb eq	1,22E-03	3,17E-06	4,87E-05	8,49E-04	2,51E-07	3,78E-07	3,08E-08	-6,20E-05
Resource use, fossils*	MJ	3,33E+02	3,33E+01	1,84E-01	1,47E+03	1,09E+00	4,13E+00	3,77E-01	-1,02E+02
Water use*	m^3 depriv.	3,90E+00	1,54E-02	8,08E-01	4,97E+01	6,13E-03	5,78E-02	-1,96E-01	-2,73E+00

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

Table 286: Additional environmental impact indicators - FDMR 60, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Particulate matter	disease inc.	2,73E-06	5,70E-08	2,24E-06	1,33E-06	5,69E-09	7,59E-08	2,72E-09	-8,66E-07
Human toxicity, non-cancer*	CTUh	1,01E-06	8,61E-09	2,30E-07	1,11E-06	7,04E-10	7,33E-09	4,53E-10	-2,15E-07
Human toxicity, cancer*	CTUh	1,43E-06	6,92E-09	6,99E-08	1,50E-07	5,49E-10	1,62E-09	9,21E-11	-9,75E-07
Land use*	Pt	2,09E+02	8,27E+00	1,88E+02	3,27E+02	6,57E-01	7,51E-01	9,26E-01	-3,14E+01
Ionising radiation**	kBq U-235 eq	2,26E+00	1,78E-02	1,27E+00	4,06E+01	1,41E-03	2,91E-03	5,05E-04	-3,64E-01
Ecotoxicity, freshwater	CTUe	6,63E+02	3,73E+00	6,85E+01	2,63E+02	2,96E-01	4,75E+00	2,77E-01	-3,21E+02

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising 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 ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 287: Parameters describing resource use - FDMR 60, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Use of renewable primary energy excl. raw materials	MJ, net calorific value	4,69E+01	2,35E-01	4,60E+01	4,03E+02	1,87E-02	6,99E-02	7,84E-03	-8,88E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ, net calorific value	4,69E+01	2,35E-01	4,60E+01	4.03E+02	1,87E-02	6,99E-02	7,84E-03	-8,88E+00
Use of non-renewable primary energy excl. raw materials	MJ, net calorific value	4,46E+01	1.16E-03	2,10E-01	1,47E+03	1,09E+00	4,13E+00	3,77E-01	-1,02E+02
Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ, net calorific value	4,46E+01	1,16E-03	2,10E-01	1,47E+03	1,09E+00	4,13E+00	3,77E-01	-1,02E+02
Use of secondary material	kg	1,36E-01	0	1,21E-03	2,43E-01	5,05E-04	2,02E-03	1,25E-04	-1,65E+00
Use of renewable secondary fuels	MJ, net calorific value	4,06E-01	0	9.78E-06	1,94E-03	6,38E-06	1,95E-04	2,27E-06	-1,03E-03
Use of non renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0
Use of net fresh water	m3	1,48E-01	8,64E-04	9,84E-02	1,28E+00	1,51E-04	1,37E-03	-4,55E-03	-7,03E-02

Table 288: Other environmental information describing waste categories - FDMR 60, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Hazardous waste	kg	5,24E+00	1,35E-02	5,39E-01	3,72E+00	1,59E-03	4,30E-02	6,38E-04	-3,65E+00
Non-hazardous waste disposed	kg	4,76E+01	1,51E-01	4,41E+00	2,88E+02	3,35E-02	4,93E-01	5,79E+00	-4,31E+01
Radioactive waste disposed/ stored	kg	1,65E-05	0	4,04E-07	1,04E-02	3,51E-07	7,17E-07	1,24E-07	-8,99E-05

Table 289: Environmental information describing output flows - FDMR 60, DN 400 mm, with the actuator

Impact category	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	1,20E+00	0	3,28E-01	1,53E-01	8,27E-06	6.12E+00	4,87E-06	-1,87E-03
Materials for energy recovery	kg	3,90E-05	0	1,35E-07	2,06E-05	7,00E-08	2,68E-01	9,37E-09	-3,67E-05
Exported energy, electricity	MJ	1,01E-02	0	2,35E-04	6,56E+00	1,87E-04	2,87E-04	1,57E-04	-2,28E-02
Exported energy, heat	MJ	7,13E-03	0	6,13E-05	2,48E-01	2,71E-04	2,44E-04	3,51E-04	-5,35E-02

Table 290: Information describing the biogenic carbon content - FDMB

Biogenic carbon content per 1 pc of FDMB	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 100x100 mm, manual	kg C	3,31E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 100x100 mm, with the actuator	kg C	4,30E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 500x400 mm, manual	kg C	1,06E+00
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 500x400 mm, with the actuator	kg C	1,07E+00
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1000x500 mm, manual	kg C	1,84E+00
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1000x500 mm, with the actuator	kg C	1,99E+00
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 291: Information describing the biogenic carbon content - FDMS

Biogenic carbon content per 1 pc of FDMS	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, manual	kg C	4,30E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, with the actuator	kg C	4,30E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 315 mm, manual	kg C	1,34E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 315 mm, with the actuator	kg C	1,07E+00
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 630 mm, manual	kg C	2,59E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 630 mm, with the actuator	kg C	1,99E+00
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 292: Information describing the biogenic carbon content - CFDM/CFDM-V

Biogenic carbon content per 1 pc of CFDM/CFDM-V	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, CFDM	kg C	3,56E-03
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, CFDM-V	kg C	3,56E-03
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 160 mm, CFDM	kg C	5,92E-03
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 160 mm, CFDM-V	kg C	5,92E-03
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 200 mm, CFDM	kg C	7,57E-03
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 200 mm, CFDM-V	kg C	7,57E-03
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 293: Information describing the biogenic carbon content - FDMR

Biogenic carbon content per 1 pc of FDMR	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, manual	kg C	3,05E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, with the actuator	kg C	3,24E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 400 mm, manual	kg C	9,85E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 400 mm, with the actuator	kg C	9,97E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 800 mm, manual	kg C	3,34E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 800 mm, with the actuator	kg C	3,57E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 294: Information describing the biogenic carbon content - FDMQ 120

Biogenic carbon content per 1 pc of FDMQ 120	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 150x150 mm, manual	kg C	8,22E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 150x150 mm, with the actuator	kg C	8,34E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 750x400 mm, manual	kg C	3,09E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 750x400 mm, with the actuator	kg C	3,14E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1500x800 mm, manual	kg C	8,04E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1500x800 mm, with the actuator	kg C	8,28E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 295: Information describing the biogenic carbon content - FDMQ

Biogenic carbon content per 1 pc of FDMQ	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 150x150 mm, manual	kg C	9,13E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 150x150 mm, with the actuator	kg C	9,24E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 750x400 mm, manual	kg C	3,19E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 750x400 mm, with the actuator	kg C	3,24E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1500x800 mm, manual	kg C	8,05E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1500x800 mm, with the actuator	kg C	8,29E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 296: Information describing the biogenic carbon content - FDML

Biogenic carbon content per 1 pc of FDML	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 200x300 mm, with the actuator	kg C	1,47E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 200x300 mm, with the actuator	kg C	2,95E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 200x300 mm, with the actuator	kg C	7,62E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 297: Information describing the biogenic carbon content - FDMA

Biogenic carbon content per 1 pc of FDMA	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 180x180 mm, manual	kg C	7,93E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 180x180 mm, with the actuator	kg C	8,35E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 800x500 mm, manual	kg C	2,91E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 800x500 mm, with the actuator	kg C	2,99E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1600x1000 mm, manual	kg C	8,10E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), 1600x1000 mm, with the actuator	kg C	8,17E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Table 298: Information describing the biogenic carbon content - FDMR 60

Biogenic carbon content per 1 pc of FDMR 60	Unit	Biogenic C content
Biogenic carbon content in product (all types and sizes)	kg C	0
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, manual	kg C	2,20E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 100 mm, with the actuator	kg C	1,76E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 200 mm, manual	kg C	3,09E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 200 mm, with the actuator	kg C	2,59E-01
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 400 mm, manual	kg C	5,49E-02
Biogenic carbon content in accompanying packaging (cardboard and packaging wood), DN 400 mm, with the actuator	kg C	4,58E-01
NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

ADDITIONAL ENVIRONMENTAL INFORMATION

EMS

The company has established, maintain and have certified the environmental management system according to EN ISO 14001.


BUILDING RESEARCH INSTITUTE CERTIFICATION COMPANY Ltd.

CERTIFICATE

MANDÍK, a.s.

ISO 14001:2015

Packaging waste

The take-back and use of packaging waste that the company has put on the market in the Czech Republic is ensured through the authorized packaging company EKO-KOM, a.s. according to Act No. 447/2001 Sb., on packaging, as amended.

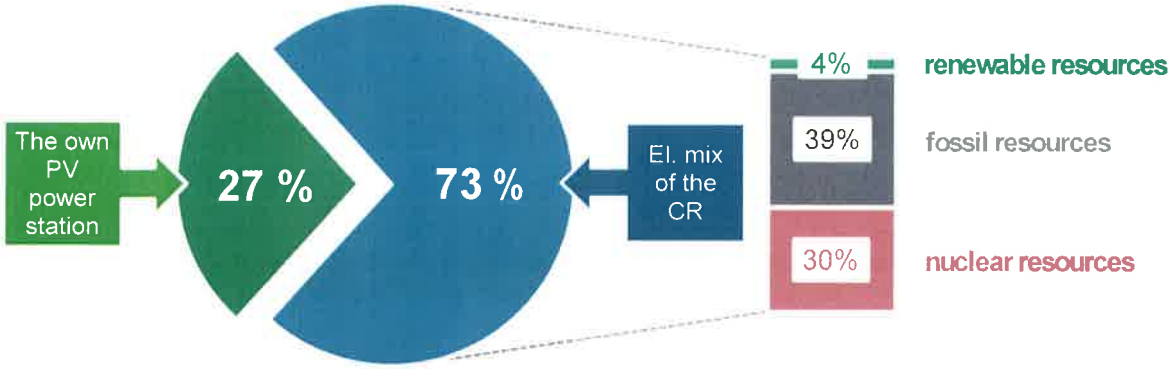
Waste of electrical equipment

The company fulfills the obligations set for manufacturers of electrical equipment for the separate collection, take-back, processing, use and disposal of electrical equipment and electrical waste through the ASEKOL a.s. collective system in the Czech Republic according to Act No. 542/2020 Sb., on end-of-life products, as amended.

Further information about the validity of certification is on the company's website.

Electricity production

The graph shows the considered energy mix of the company. More than a quater of the electricity comes from renewable resource - from the own photovoltaic power station.



Energy Source and Emission Level for Electricity: Czech residual mix, contains: 53,6 % of fossil fuels, 41 % of nuclear, 5,4 % of renewable sources was used for modelling of electricity an A3 phase.
GWP-GHG from the production of electricity for the Czech residual mix: 0,707 kg CO_2 eq/kWh,
for the company's mix: 0,516 kg CO_2 eq/kWh.

REFERENCES

ISO 14025:2006, Environmental labels and declarations - Type III environmental declarations — Principles and procedures

EN ISO 14040:2006, Environmental management - Life cycle assessment — Principles and framework

ISO 14044:2006-10, Environmental management - Life Cycle Assessment — Requirements and guidelines

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the construction products product category

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/Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

/SimaPro/ SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

Adress:

MANDÍK, a.s.
Dobřišská 550
267 24 Hostomice
Czech Republic

Contacts:

tel.: +420 311 706 706
e-mail: mandik@mandik.cz

www.mandik.com