Environmental Product Declaration (EPD)
according to ISO 14025 and EN 15804+A2

Installation walls with Uni-cisterns



Registration number:	EPD-Kiwa-EE-000441-EN
Issue date:	26-06-2025
Valid until:	26-06-2030
Declaration owner:	TECE SE
Publisher:	Kiwa-Ecobility Experts
Program operator:	Kiwa-Ecobility Experts
Status:	Verified

1 General information

1.1 PRODUCT

Installation walls with Uni-cisterns

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-000441-EN

1.3 VALIDITY

Issue date: 26-06-2025

Valid until: 26-06-2030

1.4 PROGRAMME OPERATOR

Kiwa-Ecobility Experts
Wattstraße 11-13
13355
Germany



Raoul Mancke

(Head of programme operations, Kiwa-Ecobility Experts)



Kripanshi Gupta

(Verification body, Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Declaration owner: TECE SE

Address: Hollefeldstr. 57, 48282 Emsdetten, Germany

E-mail: info@tece.de

Website: www.tece.com

Production location: TECE Sp. z o.o., Strzelin, Poland

Address production location: Wroclawska 61, 57-100 Strzelin, Poland

Production location: TECE Kunststofftechnik GmbH, Germany

Address production location: Hollefeldstr. 57, 48282 Emsdetten, Germany

Production location: TECE Sanitary & Building Material (Shanghai) Co., Ltd, China

Address production location: No. 3037 Kaixun Rd., Xuhui District, Shanghai 200030, China

Distribution via: TECE Sp. z o.o., Strzelin, Poland

1.6 VERIFICATION OF THE DECLARATION

The Independent verification is in accordance with ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804:2012+A2:2019 serves as the core PCR.

☐ Internal ☐ External



Lucas Pedro Berman, Senda

(Third party verifier)

1.7 STATEMENTS

The owner of this EPD shall be liable for the underlying information and evidence. The program operator Kiwa-Ecobility Experts shall not be liable with respect to manufacturer data, life cycle assessment data and evidence.

1.8 PRODUCT CATEGORY RULES

PCR A

Kiwa-Ecobility Experts (Kiwa-EE) - General Product Category Rules (2022-02-14)

PCR B

IBU – PCR Part B: Requirements for the EPD for sanitary installations

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPDs programs may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

1.10 BASIS OF ACCOUNTING

LCA method :	EN15804+A2
LCA Software	LCA for Experts - Sphera
Characterization method:	EN 15804 +A2
LCA Database Profile:	MLC Database - Manufacturing and End of Life
Database version	2024.1; last change 01.04.2024
LCA Database Profile:	MLC Database -Plastics
Database version	2024.1; last change 01.04.2024
LCA Database Profile:	MLC Database - Electrics and Electronics
Database version	2024.2; last change 01.08.2024
LCA Database Profile:	MLC Database - Professional Core
Database version	2024.2; last change 01.08.2024

1.11 LCA BACKGROUND REPORT

This EPD is prepared on the basis of the LCA background report LCA report Uni-flush tank Grp 3.

2 Product

2.1 PRODUCT DESCRIPTION

This declaration refers to an average of products (see table) with a total GWP value in the sum of A1-A3 with a deviation of ± 35 %.

TECEprofil toilet module are suitable to TECEprofil section tubes or for installation in metal/wooden stud walls and as a pre-wall or corner module. They are also suitable for single block assembly.

Uni-cistern for actuation from the front:

- safety tank made of impact-resistant plastic, tested in accordance with EN 14055
- cistern completely pre-assembled and sealed
- cistern connection with outer thread R 1/2" on the side, compatible with quick adapters
- 10 liter tank volume 6 liter preset standard flush volume 4/4.5/7.5/9 liter flush volume adjustable at any time 2 or 3 liter partial flush with dual-flush technology remaining volume can be used for immediate cleaning flush.
- insulated against condensation water
- for TECE flush plates and toilet flush handle
- can be used as a single or dual-flush cistern
- "easy fit" flush plate installation
- installation tunnel for service opening, can be shortened without tools
- quiet hydraulic filling valve, acoustic group 1 according to DIN 4109

The respective national regulations apply for use.

The TECEprofil and TECEbox toilet module with Uni-cistern is supplied in cardboard packaging secured with foil on a disposable pallet.

This EPD covers the following products:

Article no.	Description
9300309	TECEprofil WC geronto module with Uni cistern, ceramic attachment for 48 cm seat height in accordance with DIN 18040-1, 1120
9300317	TECEprofil WC module with Uni cistern, 1120
9300359	TECEprofil WC module with Uni cistern, Nordic with sealing bag, 980
9300362	TECEprofil WC module with Uni cistern, Nordic with sealing bag, 820
9300377	TECEprofil WC module ‘Design’ with Uni cistern, WRAS approval, 1120
9300381	TECEprofil WC geronto module with Uni cistern, ceramic attachment for 48 cm seat height in accordance with DIN 18040-1, 1120
9370035	TECEbox WC module with Uni cistern, installation height 1060
9500312	TECEconstruct WC module “Richardson” with Uni cistern including TECEbase dual flush plate in matt chrome, 1120
9500353	TECEconstruct WC module “Premium” self-supporting with Uni cistern, 1120
9500393	TECEconstruct WC module with Uni cistern, four feet, 1120
9600100	TECElux WC module 100, 1120
9600200	TECElux WC module 200, subsequently height-adjustable, 1120
9600400	TECElux WC module 400, subsequently height-adjustable, with odor extraction, 1120

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The Installation wall with Uni-cistern is a versatile and robust module that has been specially developed for easy installation. It is ideal for attachment to TECEprofil section tubes and for installation in metal/wooden stud walls. It can also be used as a pre-wall or corner module and for single block assembly.

2.3 REFERENCE-UTILISATION-DADUER (RSL)

RSL product

The useful life was set at 50 years and was applied, tested and thus confirmed in the design.

RSL used (years) In this life cycle assessment

50

2.4 TECHNICAL DATA

The exact technical data can be found in the data sheets for the respective products on the website www.tece.com.

The average composition of the product is described in the following table:

Product raw materials	Unit	Value
Metals	wt.%	78,3
Fossil materials	wt.%	21,7

The average composition of the final packaging is described in the following table:

Final packaging materials	Unit	Value
Fossil materials	wt.%	27,3
Biobased materials	wt.%	72,7

2.5 SUBSTANCES OF VERY HIGH CONCERN

The product does not contain REACH SVHC substances in quantities larger than 0.1 % (1000 ppm). Individual components are manufactured from brass and may therefore contain up to 2.5 % lead (EC number: 231-100-4, CAS number: 7439-92-1).

2.6 DESCRIPTION OF THE MANUFACTURING PROCESS

Installation walls are manufactured at the production facility in Strzelin, Poland. Individual components and assemblies are manufactured in the production facilities in Strzelin (Poland), Emsdetten (Germany) and Taicang (China) and transported to the production facility in Strzelin (Poland). Transport from China to Poland is by container shipment and transport from Germany to Poland is by lorry. The respective sites obtain the raw materials independently and process them further.

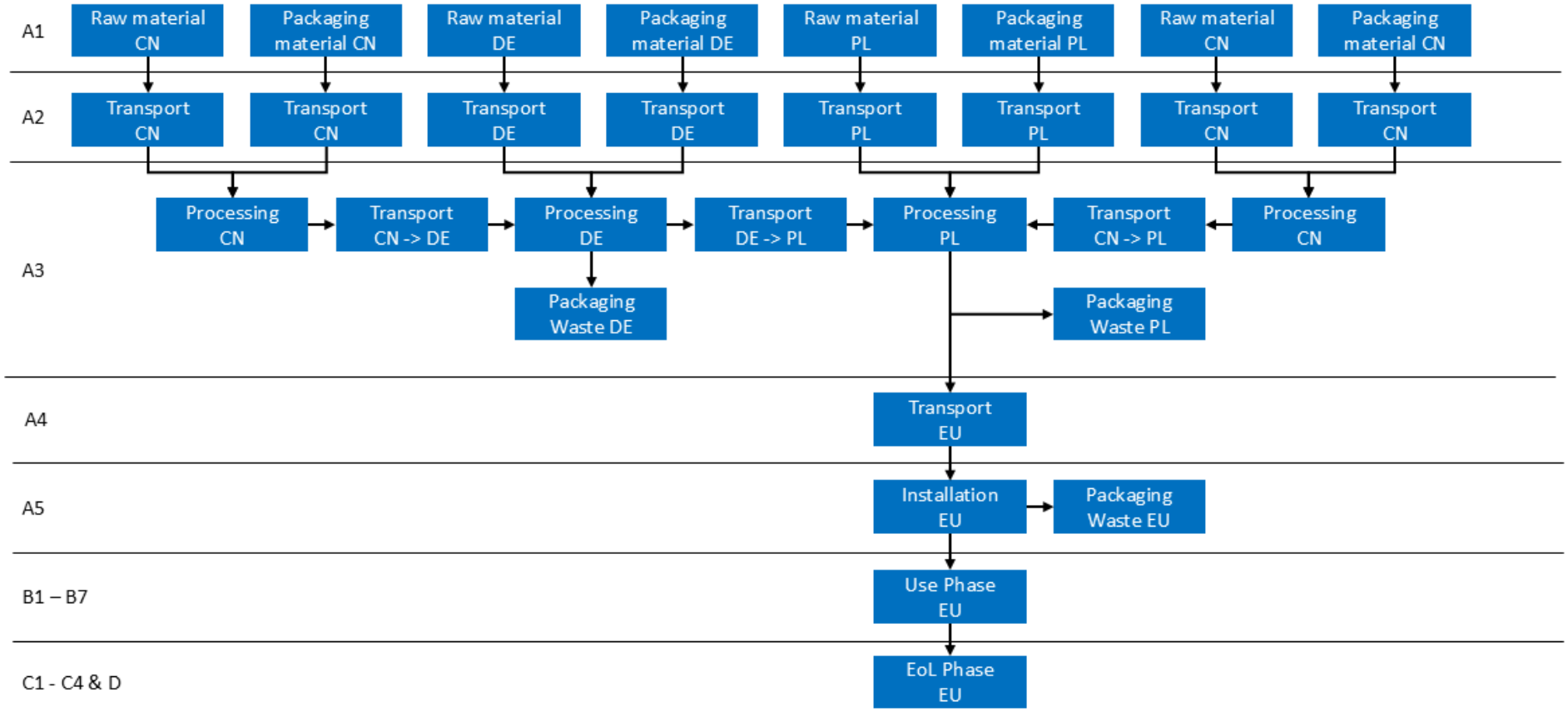


Figure 1: Production diagram

3 Calculation rules

3.1 DECLARED UNIT

This declaration refers to an average of products (see table in chapter 2.2) with a GWP-total value in the sum of A1-A3 with a deviation of ± 30 %.

Reference unit: one piece

3.2 CONVERSION FACTOR

Description	Value	Unit
Reference unit	1	Piece
Average weight of a reference unit	17,3875	kg/piece
Conversion factor to 1 kg	0,0575	Piece/kg

3.3 SCOPE OF THE DECLARATION AND SYSTEM BOUNDARIES

This is an EPD from the cradle to the gate with options, modules C1-C4 and modules D

The life cycle stages included are as shown below:

(X = Module declared, ND = Module not declared)

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

The EN 15804+A2 modules include the following:

Module A1 = Provision of raw materials	Module B5 = Remodeling/ renovation
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Production	Module B7 = Operational water consumption
Module A4 = Transport	Module C1 = Deconstruction/demolition
Module A5 = Construction / installation process	Module C2 = Transport
Module B1 = Utilization	Module C3 = Waste treatment
Module B2 = Maintenance	Module C4 = Landfilling
Module B3 = Repair	Module D = Benefits and loads outside the system boundary
Module B4 = Replacement	

3.4 REPRESENTATIVENESS

This EPD is representative for Installation walls made of TECEprofil with TECE cisterns from TECE SE. The results of this EPD are representative for Europe.

3.5 PERFORMANCE CRITERIA

For reasons of simplification and due to imprecise data, colorants for packaging and assembly instructions as well as additional plastic additives were excluded, which accounts for around 0.01 % of the mass. The manufacture of machinery and buildings, transport vehicles, transport of personal to and within the production plant and infrastructure, as well as the maintenance and operation of facilities, company administration, research and development, other long-term emissions and water consumption are also not included.

No other cut-off criteria were applied.

3.6 ALLOCATION

Similar goods are produced at the production sites, with data being recorded on a product-specific basis without using a production-wide mass balance. The energy requirement is determined via electricity meters at the production site and calculated for the production volume per period. Waste flows are also recorded and converted on a product-specific basis. The environmental data of the products are determined individually and summarized as an average, with a deviation of ± 30 % from the GWP total for modules A1-A3.

System extensions and allocations include the substitution of fossil fuels through energy generation with thermal utilization of waste in modules A3, A5 and C3. The energy generated is credited to the system, whereby it is assumed that electricity from

the respective electricity mix is substituted. In addition, material substitution of primary material through recycling in the end-of-life phase is assumed.

3.7 DATA COLLECTION AND REFERENCE PERIOD

Primary data, which includes all raw materials, packaging materials, energy consumption and auxiliary materials, was collected comprehensively for the reference year 2024.

3.8 ESTIMATES AND ASSUMPTIONS

The quantities of raw materials and the transport routes from the suppliers and the internal transport routes were determined. The standard values from the LCA calculation program were used for the means of transport and the processing of plastics. For transport to the construction site (A4), a distance of 500 km was assumed for scaling and 50 km for disposal (C2). The standard values from the LCA calculation program were also used for the recycling rates.

3.9 DATA QUALITY

The data used for balancing the products originate from verified (partly reweighted) master data and are representative for the reference year 2024. An LCA calculation program with the associated background database was used to prepare the life cycle inventory and the impact assessment. Corresponding data sets for the respective raw materials, transport, energy and processing, taking into account the temporal and geographical aspects, were selected accordingly and are used. This means that the temporal, geographical and technological quality is very good.

3.10 ENERGY MIX

Local electricity grid mix is used at the production sites in Germany, Poland and China. At the China site, we use some of our own solar power, which reduces electricity consumption for production/assembly in China. For the EoL-Phase is used Europa grid mix.

GWP – total according to EF 3.1	Unit	Value
Germany grid mix	kg CO_2 / kWh	0,3999
Poland grid mix	kg CO_2 / kWh	0,7823
China grid mix	kg CO_2 / kWh	0,7618
Europe grid mix	kg CO_2 / kWh	0,2892

4 Scenarios and additional technical information

4.1 PROVISION OF RAW MATERIALS (A1)

The raw materials for the respective countries (Germany, Poland and China) are purchased in the respective countries. These are, for example, metal parts (screws) and plastic granulate for the respective plastic parts.

4.2 TRANSPORT RAW MATERIAL TO THE PLANT (A2)

The raw materials purchased in each country are delivered by truck from the supplier to the respective plants.

4.3 PRODUCTION (A3)

The injection molding process for manufacturing plastic parts is used at the sites in Germany, China and Poland. The resulting components are further processed or pre-assembled, depending on the location.

In China, certain components are manufactured using the injection molding process and assembled into modules such as the drain valve and the filling valve. These assemblies are transported to Poland by ship. Trucks are used for transportation to and from the port. Disposable packaging is used for this.

In Germany, special parts required for the end product are produced in series by injection molding. These components are transported to the Polish plant by truck in reusable packaging.

Other plastic parts are also injection molded in Poland. The final assembly of the mounting walls takes place at the plant there. The components from Germany and the pre-assembled valve assemblies from China are brought together to form the finished product.

After assembly, the end product is packed in its final sales packaging.

4.4 TRANSPORT TO THE CONSTRUCTION SITE (A4)

The installation wall is delivered to the customer by truck. The distance was set to 500 km for easier scaling.

4.5 CONSTRUCTION / INSTALLATION PROCESS (A5)

The installation wall delivered to the construction site is installed in the building by hand. The packaging is disposed of at disposal centers close to the construction site.

4.6 USE-Phase (B1 – B7)

Not declared.

4.7 DISMANTLING / DEMOLITION (C1)

Dismantling from the building is carried out by hand, as is installation in the building.

4.8 TRANSPORT FOR WASTE TREATMENT (C2)

The waste produced during dismantling is transported by bulk truck (50 km) to waste treatment.

4.9 WASTE TREATMENT & LANDFILL (C3, C4)

The waste is treated according to its materials, recycling, waste incineration and landfilling.

4.10 BENEFITS AND BURDENS OUTSIDE THE SYSTEM BOUNDARY (D)

Credits resulting from recycling and waste treatment.

5 Results

For the impact assessment, the characterization factors of the LCIA method EN 15804+A2 Method v1.0 are used. Long-term emissions (>100 years) are not considered in the impact assessment. The results of the impact assessment are only relative statements that do not make any statements about endpoints of the impact categories, exceedance of threshold values, safety margins or risks. The following tables show the results of the indicators of the impact assessment, of the use of resources as well as of waste and other output flows.

5.1 ENVIRONMENTAL IMPACT INDICATORS PER UNIT

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
AP	mol H^+ eqv.	1,34E-01	1,83E-03	2,16E-02	1,58E-01	1,98E-03	3,45E-03	0,00E+00	1,37E-03	1,01E-03	4,29E-05	-8,73E-02
GWP-total	kg CO_2 eqv.	4,20E+01	9,43E-01	8,58E+00	5,16E+01	1,01E+00	6,48E+00	0,00E+00	2,36E-01	2,11E+00	7,20E-03	-3,41E+01
GWP-b	kg CO_2 eqv.	-4,56E+00	-2,08E-02	2,12E-01	-4,37E+00	-2,27E-02	4,73E+00	0,00E+00	-5,28E-03	4,00E-03	2,26E-06	2,58E+00
GWP-f	kg CO_2 eqv.	4,66E+01	9,53E-01	8,35E+00	5,59E+01	1,03E+00	1,74E+00	0,00E+00	2,39E-01	2,10E+00	7,18E-03	-3,67E+01
GWP-luluc	kg CO_2 eqv.	3,90E-02	9,88E-03	7,05E-03	5,60E-02	1,05E-02	4,68E-03	0,00E+00	2,46E-03	1,28E-03	1,98E-05	-1,84E-02
EP-m	kg N eqv.	2,96E-02	8,04E-04	6,29E-03	3,67E-02	8,68E-04	1,70E-03	0,00E+00	6,78E-04	2,39E-04	9,32E-06	-1,80E-02
EP-fw	kg P eqv.	5,04E-05	2,54E-06	9,63E-06	6,26E-05	2,76E-06	2,19E-05	0,00E+00	6,43E-07	8,34E-07	3,96E-06	-5,81E-05
EP-t	mol N eqv.	3,20E-01	8,50E-03	6,85E-02	3,97E-01	9,19E-03	1,65E-02	0,00E+00	7,39E-03	3,08E-03	1,02E-04	-1,75E-01
ODP	kg CFC 11 eqv.	2,33E-10	1,58E-13	7,04E-11	3,03E-10	1,70E-13	6,56E-12	0,00E+00	3,96E-14	8,85E-12	2,45E-14	-2,98E-11
POCP	kg NMVOC eqv	1,01E-01	1,68E-03	1,67E-02	1,19E-01	1,82E-03	2,66E-03	0,00E+00	1,26E-03	6,11E-04	2,94E-05	-7,07E-02
ADP-f	MJ	7,23E+02	1,22E+01	8,97E+01	8,25E+02	1,31E+01	1,28E+01	0,00E+00	3,06E+00	8,04E+00	1,19E-01	-6,14E+02
ADP-mm	kg Sb-eqv.	8,89E-04	6,35E-08	6,65E-07	8,90E-04	6,81E-08	-7,45E-08	0,00E+00	1,59E-08	8,10E-08	4,88E-10	-1,37E-04
WDP	m^3 world eqv.	5,96E+00	4,34E-03	3,15E-01	6,27E+00	4,68E-03	6,91E-01	0,00E+00	1,09E-03	2,55E-01	8,83E-04	-3,78E+00

AP= Acidification (AP) | **GWP-total**= Global warming potential (GWP-total) | **GWP-b**= Global warming potential - Biogenic (GWP-b) | **GWP-f**= Global warming potential - Fossil (GWP-f) | **GWP-luluc**= Global warming potential - Land use and land use change (GW**P-lul**uc) **| EP-**=Eutrophication marine (EP-m) | EP-fw= Eutrophication. freshwater (E, freshwater (EP-fw) | **EP-t**= Eutrophication, terrestrial (EP-T) | **ODP**= Ozone depletion (ODP) | **POCP**= Photochemical ozone formation - human health (POCP) | **ADP-f**= Resource use, fossils (ADP-f) | **ADP-mm**= Resource use, minerals and metals (ADP-mm) | **WDP**= Water use (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
ETP-fw	CTUe	5,13E+02	1,58E+01	3,56E+01	5,64E+02	1,71E+01	3,54E+00	0,00E+00	3,97E+00	1,40E+00	2,70E-01	-2,30E+02
PM	Disease incidence	2,31E-06	1,55E-08	3,12E-07	2,64E-06	1,68E-08	2,31E-08	0,00E+00	7,48E-09	7,97E-09	4,43E-10	-8,50E-07
HTP-c	CTUh	8,71E-07	2,13E-10	1,18E-09	8,72E-07	2,30E-10	3,00E-10	0,00E+00	5,36E-11	1,36E-10	3,72E-12	5,20E-09
HTP-nc	CTUh	1,06E-04	1,19E-08	3,87E-08	1,06E-04	1,29E-08	1,79E-08	0,00E+00	3,00E-09	2,68E-09	6,63E-11	-3,09E-08
IR	kBq U-235 eqv.	2,08E+00	3,28E-03	2,53E-01	2,33E+00	3,56E-03	1,47E-01	0,00E+00	8,28E-04	2,06E-01	2,29E-04	-8,53E-01
SQP	Pt	1,02E+03	5,37E+00	3,20E+01	1,05E+03	5,80E+00	1,66E+01	0,00E+00	1,35E+00	3,20E+00	1,84E-02	-3,85E+02

ETP-fw= Ecotoxicity, freshwater (ETP-fw) | **PM**= Particulate Matter (PM) | **HTP-c**= Human toxicity, cancer (HTP-c) | **HTP-nc**= Human toxicity, non-cancer (HTP-nc) | **IR**= Ionizing radiation, human health (IR) | **SQP**= Land use (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

Disclaimer 1 - This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 - The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

5.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1,36E+02	9,16E-01	3,68E+01	1,73E+02	9,89E-01	6,23E+00	0,00E+00	2,30E-01	5,42E+00	1,98E-02	-7,97E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,36E+02	9,16E-01	3,68E+01	1,73E+02	9,89E-01	6,23E+00	0,00E+00	2,30E-01	5,42E+00	1,98E-02	-7,97E+01
PENRE	MJ	7,23E+02	1,22E+01	8,97E+01	8,25E+02	1,31E+01	1,28E+01	0,00E+00	3,06E+00	8,04E+00	1,19E-01	-6,14E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	7,23E+02	1,22E+01	8,97E+01	8,25E+02	1,31E+01	1,28E+01	0,00E+00	3,06E+00	8,04E+00	1,19E-01	-6,14E+02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,04E-01	4,55E-04	2,72E-02	2,32E-01	4,89E-04	9,22E-03	0,00E+00	1,14E-04	7,87E-03	2,59E-05	-2,49E+00

PERE= renewable primary energy ex. raw materials | **PERM**= renewable primary energy used as raw materials | **PERT**= renewable primary energy total | **PENRE**= non-renewable primary energy ex. raw materials | **PENRM**= non-renewable primary energy used as raw materials | **PENRT**= non-renewable primary energy total | **SM**= use of secondary material | F=use of renewable secondary fuels | **NRSF**= use of non-renewable secondary fuels | **FW**= use of net fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1,28E-05	4,89E-10	1,01E-07	1,29E-05	5,26E-10	2,06E-07	0,00E+00	1,23E-10	1,03E-08	2,65E-11	-2,25E-06
NHWD	kg	1,91E+00	1,70E-03	6,52E-02	1,98E+00	1,83E-03	2,60E-01	0,00E+00	4,27E-04	1,29E-02	2,40E-01	2,69E+00
RWD	kg	1,44E-02	2,29E-05	2,56E-03	1,69E-02	2,48E-05	8,77E-04	0,00E+00	5,77E-06	1,25E-03	1,71E-06	-8,48E-03

HWD= hazardous waste disposed | **NHWD**= non-hazardous waste disposed | **RWD**= radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	2,01E-01	2,01E-01	0,00E+00	3,02E+00	0,00E+00	0,00E+00	1,69E+01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	1,21E-01	1,21E-01	0,00E+00	3,11E+00	0,00E+00	0,00E+00	5,49E-01	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	3,78E-01	3,78E-01	0,00E+00	9,36E+00	0,00E+00	0,00E+00	6,52E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	5,23E-01	5,23E-01	0,00E+00	1,33E+01	0,00E+00	0,00E+00	3,66E+00	0,00E+00	0,00E+00

CRU= Components for re-use | **MFR**= Materials for recycling | **MER**= Materials for energy recovery | **EET**= Exported Energy Thermic | **EEE**= Exported Energy Electric

5.3 INFORMATION ON BIOGENIC CARBON CONTENT PER KILOGRAM

BIOGENIC CARBON CONTENT

The following information describes the biogenic carbon content in the product at the factory gate per kilogram:

Biogenic carbon content	Value	Unit
Biogenic carbon content in the product	0,0000	kg C
Biogenic carbon content in the final packaging	2,2142	kg C

MOUNTING BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide absorption is taken into account. The associated mounting and release of carbon dioxide in downstream processes is not included in this figure, although it appears in the results shown. One kilogram of biogenic carbon content corresponds to 44/12 kg of biogenic carbon dioxide uptake.

Mounting biogenic carbon dioxide	Value	Unit
Product	0,0000	kg CO_2 (biogenic)
Final packaging	8,1186	kg CO_2 (biogenic)

6 Analyzing the results

6.1 Dominance analysis

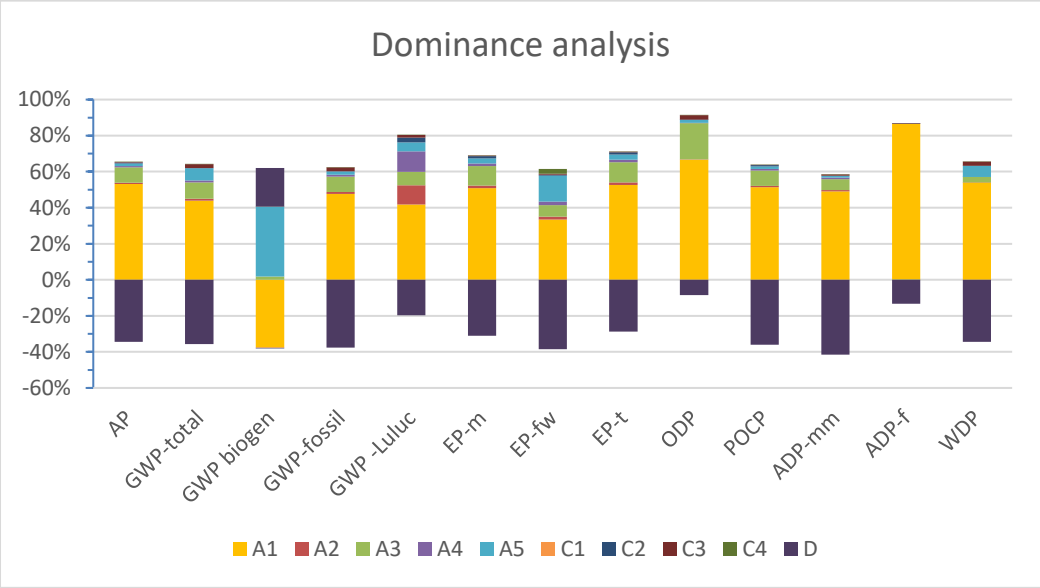


Figure 2: Dominance analysis diagram

It is clear that the impact of the raw materials used A1 is the largest in most impact categories, which is due to the petroleum-based plastics. Furthermore, the entire EoL phase (C1-C4 & D) has a negative influence on the impact categories.

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8 Contact information

Publisher	Operator	Owner of the declaration
Kiwa-Ecobility Experts Wattstraße 11-13 13355 Berlin, DE	**Kiwa-Ecobility Experts** Wattstraße 11-13 13355 Berlin, DE	**TECE SE** Hollefeldstr. 57 48282 Emsdetten, DE
E-mail: DE.Ecobility.Experts@kiwa.com **Website:** https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/	**E-mail:** DE.Ecobility.Experts@kiwa.com **Website:** https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/	**E-mail:** info@tece.com **Website:** www.tece.com

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