38/71 Eagle Street Brisbane City QLD, 4000 Australia

Global GreenTag
International EPD Program

EPD™

Environmental Product Declaration
In accordance with ISO 14025 and EN 15804

KINGKUS NEW MATERIAL CO., LTD.

Polyester fiber acoustic panel

Company Address: No.11, Changsheng Industrial Park, Renkun Road, Zhitang Town, Changshu city, Jiangsu Province, China

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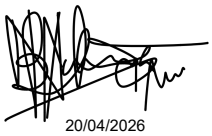
Document Version:1.0

ECO PLATFORM

ECO PLATFORM EPD VERIFIED

Contents

1. General Information

Product Category Rules (PCR)	**CEN standard EN 15804+A2 2019 serves as core Product Category Rules (PCR) (07 2022) (1)**			
Sub-PCR	Wall and Ceiling Linings Sub-PCR WCL: 2023 V1			
Verification Statement	Independent verification of the declaration and data, according to ISO 14025:2010 ☐Internal ☐ External Independent external verification of the declaration and data, mandatory for business-to-consumer communication according to ISO 14025:2010			
	Signature	**Name**	**Details**	**Logo**
Third Party Verifier		Stephen Forson	ViridisPride Ltd Brent Street London, United Kingdom www.viridispride.com	Viridis Pride
LCA and EPD Producer		Guangping Chen	Hangzhou REACH Technology Group Co., Ltd. 11th floor, Building 1, Dongguan High-tech Park, 288 Qiuyi Road, Binjiang District, Hangzhou City, Zhejiang Province, China. chenguangping@cirs-group.com https://www.cirs-group.com/en	CIRS
Program Operator	 20/04/2026	Nana Bortsie-Aryee	Global GreenTag International Pty Ltd Level 38, 71 Eagle Street, Brisbane 4000 Australia epd@globalgreentag.com www.globalgreentag.com	Global GreenTag International
EPD Owner		Baojun Bai	Kingkus new material co., ltd. No.11, Changsheng Industrial Park, Renkun Road, Zhitang Town, Changshu city, Jiangsu Province, China rick@kingkus.com https://www.kingkus.com/	Kingkus
Communication	This EPD can be used for business-to-consumer (B2C) communication.			
Comparability	EPD of construction products may not be comparable if they do not comply with EN 15804			
Geographical Area	The product is produced in Changshu city, Jiangsu Province, China, the market place is worldwide.			
Life Cycle Assessment (LCA)-method Cut-off Classification	Complies with EN15804+A2:2019			
Characterisation Factors Version	The “EN 15804 reference package” based on EF 3.1.			
Electricity mix	Consumption mix			

2. Product Information – Product Specific EPD

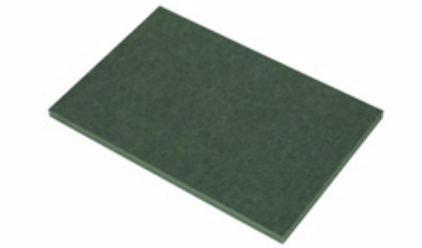


Figure 1 Product Image

EPD Data Type	**This EPD is based on product specific information.**	
Product Name	Polyester fiber acoustic panel	
Product Specifications	This report covers one product – polyester fiber acoustic panel – in five different specifications, as detailed in Table 1.	
Product Description	Polyester fiber acoustic panels are designed to absorb sound and improve acoustics in various environments. Made from polyester fibers, these panels reduce noise, control echo, and enhance speech clarity by absorbing mid to high-frequency sound waves. They are commonly used in offices, home theaters, recording studios, classrooms, and public spaces to reduce background noise and improve sound quality. Key functions include sound absorption, noise reduction, and acoustic enhancement, making spaces quieter and more comfortable. These panels also contribute to thermal insulation in some cases and are available in various sizes, shapes, and colors to fit different design needs.	
Production Site	Changshu, Jiangsu, China	
Description of Manufacturing Processes	First, recycled polyester fiber (the raw material) is processed through opening to loosen and disentangle the fiber mass, preparing it for subsequent steps. This opened recycled fiber then moves to fiber blending to ensure uniform mixing of the material. The blended recycled fibers undergo carding to align and refine the fiber structure into a consistent sliver, followed by web-laying to form a continuous, evenly distributed fibrous web.Next, the web is consolidated via needle-punching (a mechanical bonding process that interlocks the fibers to enhance structural integrity), then subjected to heat-treating for further stabilization of the fiber web. The treated web proceeds to heat-setting to fix its shape, density, and dimensional stability, after which calendering is performed to achieve the desired thickness, flatness, and surface smoothness.Finally, the finished panel is cut to the specified dimensions, undergoes inspection to verify compliance with quality and performance standards, and is prepared for distribution through packaging.	
Product Performance and Standard Compliance	**Standard**	**Result**
	EN13501-12007	Class B
	ASTM E84	Class A
	BS 476 Part 7	class 1Y fire rated
	BS EN 717-1	E0 Formaldehyde-free environmental test
	NRC EN 13964;2004+A1:2006 acoustic test	Available on request
	24MM EN 12667-2001 Thermal Conductivity and Thermal Resistance	Available on request
	24MM NRC EN ISO 354-2003	Available on request
	Updated technical information can be found on the https://www.kingkus.com product/9mmpolyester_fiber_acoustic_panel.	

Candidate List of Substances of Very High Concern for Authorisation	Product does not contain substances on the “Candidate List of Substances of Very High Concern for authorisation” (2) that require registration.	
Materials	**Material**	**Function**
	Polyester fiber	Structure
	Corrugated Cardboard	Packaging
	Packaging Tape	Packaging
	Wooden Pallet	Packaging
	PE film	Packaging

Table 1: The product specifications of the Polyester fiber acoustic panel

Specifications	Product name	Dimensions	Areal density (kg/m^2)
Specification 1	Polyester fiber acoustic panel	2440 × 1220 × 9 mm	1.6
Specification 2		2440 × 1220 × 9 mm	2
Specification 3		2440 × 1220 × 12 mm	2.4
Specification 4		2800 × 1220 × 12 mm	2.4
Specification 5		2440 × 1220 × 24 mm	3.8

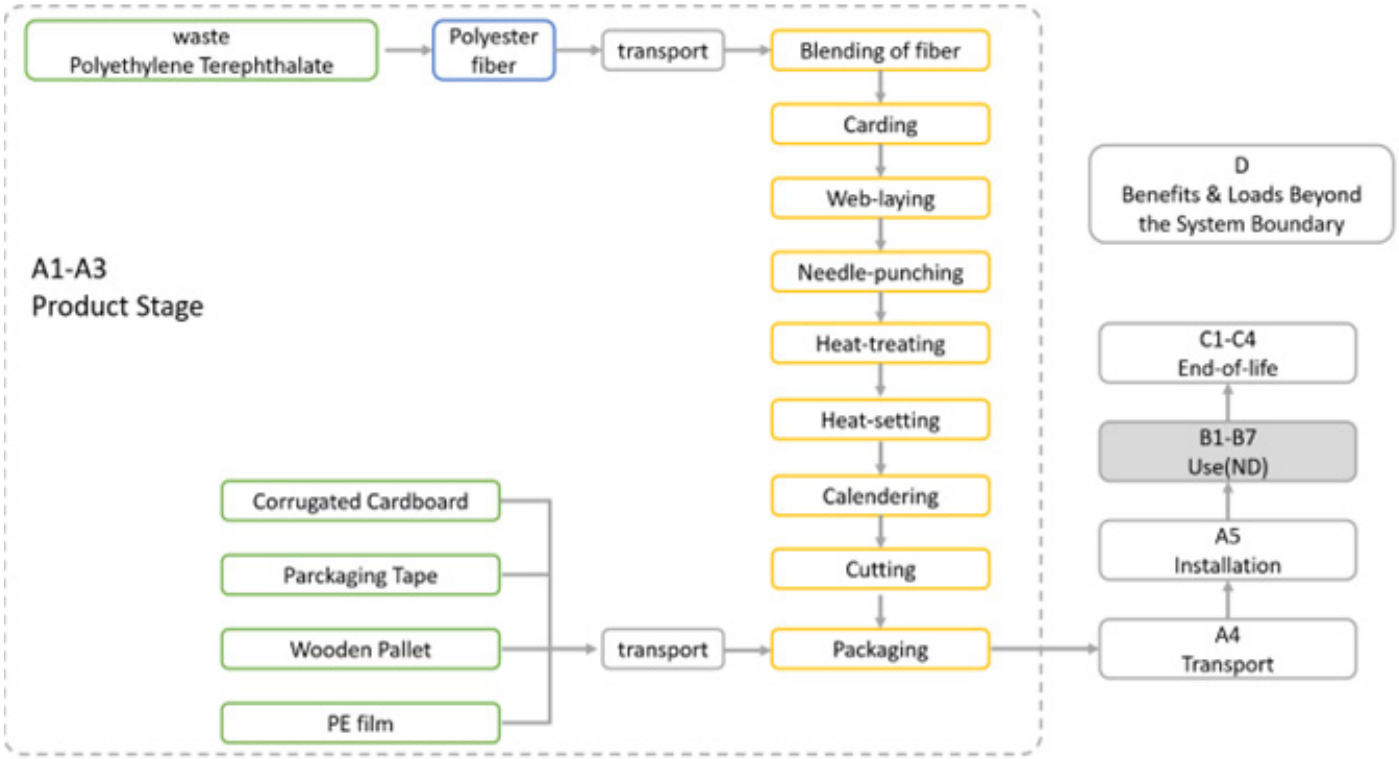
3. LCA Description and Rules

EPD Type	Cradle-to-gate with options, modules A4-A5, C1-C4 and module D
System Boundary	See Figure 2: Modules Included
Functional/Declared Unit	The declared unit is defined as 1 m² of polyester fiber acoustic panel, which has an average weight of 2.44 kg/m².
Reference Service Life (RSL)	20 years
Application of Cut-Off Criteria	According to PCR, the definition of cut-off criteria allows some data from the inventory to be disregarded when such data is considered irrelevant for the purposes of the study and would only represent an unnecessary burden in collecting data, without significantly altering the end result. Except for the exclusions listed in the PCR, no other specific cut-off criteria is applied. In this study, all inputs and outputs were included.
Allocations	In this LCA study, allocation is based on physical properties and is determined by weight. For instance, various Polyester fiber acoustic panel products are manufactured in a single factory. The consumption (primarily electricity, diesel, raw material consumption) of the target product is calculated by dividing the total annual production weight of each product by the total weight of all products manufactured in the factory. This yields the weight ratio of the target product, which is then multiplied by the total data. The unit product consumption of packaging materials is calculated by dividing the total weight of materials in a single standard packaging unit by the total standard area of the target product corresponding to that packaging unit.
Data Collection Period	Year 2024
Applied Software	SimaPro 10.2.0.0
Applied Background Database	Ecoinvent 3.11
Data Quality Assessment	See page 7 for details
Applied Energy Datasets	Electricity, low voltage {CN-ECGC}l market for electricity, low voltage l Cut-off, U
Applied Electricity Mix Carbon Footprint	0.780 kg CO2e/kWh.

Figure 2: Modules Included

Information	Construction Works Life Cycle Information																Supplementary Information
Stages	Product			Construction Process		Use							End-of-Life				Benefits & Loads Beyond the System Boundary
Module Codes	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module Names	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water use	Deconstruction and Demolition	Transport	Waste Processing	Disposal	Reuse Recovery and Potential
Modules Declared	✓	✓	✓	✓	✓	ND	ND	ND	ND	ND	ND	ND	✓	✓	✓	✓	✓
Data	76.11%			Scenario													Scenario
	✓ = Module Included , ND = Module Not declared																

Figure 3: System Process Flow Chart



Data Quality Assessment

Data quality is assessed during data collecting period, by personal contact and cross-check. All activity data used for modelling is from year 2024. Besides, ecoinvent v3.11 is the only database used in LCA model. Primary data of materials is from a questionnaire filled by Kingkus new material co., ltd. and its suppliers. All materials were tried to be modelled in SimaPro. Primary data were checked by three people at least during study period, data collector, EPD project manager in Kingkus new material co., ltd., LCA consultants in CIRS.

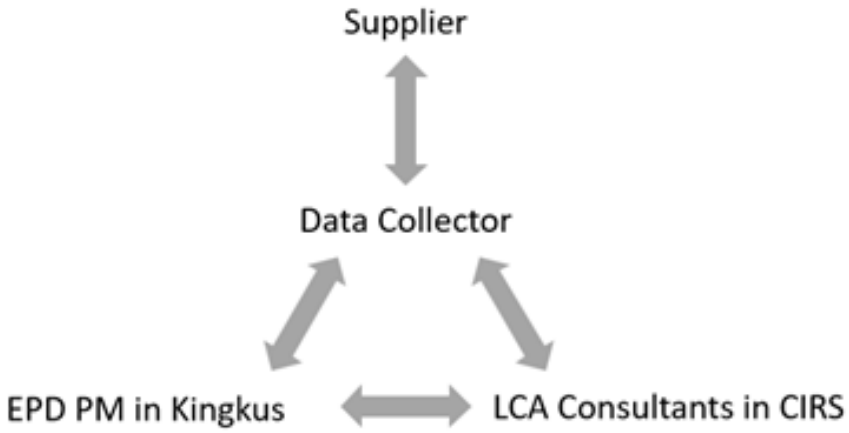


Figure 3: Data check process

Although data providers are encouraged to fulfil the whole questionnaire as much as they can, there is some missing data in the inventory. This study uses reference factors from PCRs and literatures, such as material recycle rates, transport distances.

All the downstream data are collected from generic data and assumptions, based on the scenario we conducted. The local data shall always be the priority, for example, due to lack of specific data for material recyclability, default values for material recovery rates were collected from Australian Government Department of Climate Change, Energy, the Environment and Water. For emission factors, ecoinvent v3.11 is the usual source of background data.

When choosing generic data and making assumptions, all gap-filled data has been double checked by the supervisor to make sure those are good for appropriate modelling.

Regarding cut-off: All of the unit processes within the scope of the life cycle were included, with less than a 1% cut-off.

Regarding allocation: In this LCA study, allocation is based on physical properties and is determined by weight. For instance, various Polyester fiber acoustic panel products are manufactured in a single factory. The consumption (primarily electricity, diesel, raw material consumption) of the target product is calculated by dividing the total annual production weight of each product by the total weight of all products manufactured in the factory. This yields the weight ratio of the target product, which is then multiplied by the total data.The unit product consumption of packaging materials is calculated by dividing the total weight of materials in a single standard packaging unit by the total standard area of the target product corresponding to that packaging unit.

This allocation approach is consistent with actual manufacturing practices and ensures a reasonable and reliable data quality for the life cycle inventory analysis.

Table 2: List of data sources

Component	Material Description	Material Dataset	Data Source	Publication Date
Raw material	Recycled Polyester Fiber	Polyethylene terephthalate, pellets, recycled fibre based {CN-ZJ}	Ecoinvent v3.11	2024
Packing	Corrugated Cardboard	corrugated board box production {RoW}	Ecoinvent v3.11	2024
	Packaging Tape	polypropylene production, granulate {RoW}	Ecoinvent v3.11	2024
	Wooden Pallet	plywood production{RoW}	Ecoinvent v3.11	2024
	PE film	packaging film production, low density polyethylene {RoW}	Ecoinvent v3.11	2024
Energy	Grid Electricity	market for electricity, low voltage {CN-ECGC}|	Ecoinvent v3.11	2024
	diesel	market for diesel, burned in diesel-electric generating set, 18.5kW {GLO}	Ecoinvent v3.11	2024
Transportation	Local supplier freight to factory	market for transport, freight, lorry, 16-32 metric ton, diesel, EURO 6 {RoW} market for transport, freight, lorry, 3.5-7.5 metric ton, diesel, EURO 6 {RoW} market for transport, freight, light commercial vehicle, fleet average {RoW}	Ecoinvent v3.11	2024
	Product Transportation	Transport, freight, lorry 16-32 metric ton, EURO6 {GLO}| market for market for transport, freight, sea, container ship, heavy fuel oil {GLO} market for transport, freight, lorry, 3.5-7.5 metric ton, diesel, EURO 3 {RoW}	Ecoinvent v3.11	2024
Waste Treatment	Waste Polyethylene Terephthalate Recycling	market group for transport, freight, lorry, diesel, unspecified {GLO}	Ecoinvent v3.11	2024
	Construction waste	treatment of waste plastic, mixture, sanitary landfill {RoW}	Ecoinvent v3.11	2024

According to EN ISO 14044:2006, 4.2.3.6, the data quality assessment shall address the following aspects:

- Precision
- Completeness
- Representativeness
- Consistency

In particular, the following specific requirements apply:

- Data shall be recent. Datasets used for calculations should be based on 1-year averaged data, they should have been updated within the past 10 years for generic data and within the past 5 years for producer specific data;
- The time period over which inputs to and outputs from the system shall be accounted for is 100 years from the year for which the data set is deemed representative. A longer time period should be used if relevant;
- The technological coverage shall reflect the physical reality for the reference product or product family;
- Geographic coverage shall reflect operational reality of the different life cycle stages;
- Data sets shall be aligned with the system boundaries defined.

In this study, all primary activity data including the production volume and electricity consumption refer to year 2024.

Activity data on transportation of materials from suppliers to Kingkus New Material Co., Ltd. have been calculated based on the distance on e-map, starting from the address of the production site of each supplier.

Therefore, all the activity data mentioned before have to be considered of very good quality with reference to precision, completeness, and consistency, and very representative of the system under study.

At the end of life stage, percentage of Polyester fiber panel(PET) recycling content is from Australian Government Department of Climate Change, Energy, the Environment and Water. And the distance is also from EPDCN-PCR-202204 PCR for construction products and services (version 2.1).

Background data about materials, production processes, transport activities and EoI treatments are retrieved from the ecoinvent v3.11 LCI library. The ecoinvent library is the most comprehensive LCI library available, with information about data quality and representativeness.

The electricity mix of the networks providing electricity in manufacturing is modelled with ecoinvent v3.11 datasets representing low-voltage electricity in State Grid East China Branch.

- Electricity, low voltage {CN-ECGC}| market for electricity, low voltage | Cut-off, U

The climate change impact of electricity is 0.780 kg CO_2e/kWh.

Table 3: Data quality requirement and assessment

Quality requirement	Specific requirement	Data quality applied in this LCA	Result Met/not met
Time-related coverage (age of data and the minimum length of time over which data should be collected)	Generic datasets should be within ten years	Ecoinvent 3.11, <10 years	Met
	Newly collected LCI data were current or up to 5 years old and based on a 1-year average	2024.1-2024.12 production inventory	Met
Geographical coverage (the geographical area from which data for unit processes should be collected to satisfy the goal of the study)	Geographic coverage shall reflect the operational reality of the different life cycle stages	All raw material data was collected From the manufacturer in China; Production data was collected and provided by Kingkus.	Met
		Distribution and EoL are based on Their respective geographical regions. The specific applied scenarios are supplied by Kingkus, which is deemed to be representative.	Met
		Transportation and energy use data referring to Ecoinvent data with geographical coverage corresponding to the location.	Met
Technology Coverage	Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, specific to the type of material, are used to represent the actual processes, as appropriate.	Met
Precision	Measure of the variability of the data values for each data expressed	Data collected for operations were typically averaged for one or more years over multiple operations, which is expected to reduce the variability of results.	Met
Completeness	95% percentage of flow is measured or estimated	All of the unit processes within the scope of the life cycle were included, with less than a 1% cut-off.	Met

Representativeness	Qualitative assessment of the degree to which the data set reflects the actual population of interest, i.e., geographical coverage, period, and technology coverage.	See geographical coverage, period, and technology coverage requirement above. These requirements are met.	Met
Consistency	Qualitative assessment of Whether the study methodology is applied uniformly to the various components of the analysis.	The study methodology is applied uniformly to the different parts of the analysis.	Met
Reproducibility	Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study.	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documents.	Met
Sources of the data	The foreground data should be from the primary producer.	Data representing energy use at Chinese factories represent an annual average and are considered of high quality due to the length of time over which these data are collected. For secondary LCI datasets, Ecoinvent v3.11 are used.	Met
Uncertainty of the information	Data, models, and assumptions should be Verified.	All the primary data and assumptions were confirmed with Kingkus, and models were built following ISO 14040/44 and PCR requirements.	Met

4. Scenarios and Additional Technical Information

The results have been calculated based on the below information.

Module	Scenario and Additional Technical Information
A1-A3	In A1, the raw material polyester fiber is 100% post-consumer recycled PET. In A3, after manufacturing, the polyester fiber waste and PP woven bag waste are sold to other vendors for recycling.
A4	Polyester fiber acoustic panels are transported from their production site in Jiangsu, China, to Shanghai Port, China, a distance of 85 km by truck. They are then shipped overseas via container ship for 18,000 km to a foreign port, and finally delivered to the installation site by truck over a distance of 250 km. The distance from the production site to the Chinese port is derived from electronic map measurements, while the overseas port-to-port shipping distance and the final overland transport distance to the installation site are set in accordance with the default transportation scenarios specified in Chapter 7.14 of the PEFCR Guidance.
A5	During the installation of Polyester fiber acoustic panels, only white latex is used to affix the product to the building. Additionally, this stage also considers the disposal of product packaging waste.
C1	No material and energy use for C1.
C2	For module C2, the assumption has been made that the waste product would be transported for 100 km by truck.
C3	For module C3, the assumption is that the recycled product would be transported by truck to a Pelletizing Plant located 100 km away.
C4	For module C4, 63% of the waste product would be sent to landfill, and 37% to recycling according to the Australian plastics flows and fates reporting (Australian Government Department of Climate Change, Energy, the Environment and Water, 2024).
D	For module D, calculate the benefits of the 37% recyclable polyester fiber (PET).

5. LCA Results – Definitions and Disclaimers

All results have been calculated and displayed as per EN15804. Units Methods and Anonyms are defined below. Results are reported in scientific notation.

Figure 4: Core Indicators

Impact Category	Indicator	Acronym	Unit
Climate change – total	Global Warming Potential total	GWP-total	kg CO_2 eq.
Climate change - fossil	Global Warming Potential fossil fuels	GWP-fossil	kg CO_2 eq.
Climate change - biogenic	Global Warming Potential biogenic	GWP-biogenic	kg CO_2 eq.
Climate change - land use and land use change	Global Warming Potential land use and land use change	GWP-luluc	kg CO_2 eq.
Ozone Depletion	Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq.
Acidification	Acidification potential, Accumulated Exceedance	AP	mol H^+ eq.
Eutrophication aquatic freshwater	Eutrophication potential, fraction of nutrients reaching freshwater end compartment	EP-freshwater	kg PO_4 eq.
Eutrophication aquatic marine	Eutrophication potential, fraction of nutrients reaching freshwater end compartment	EP-marine	kg N eq.
Eutrophication terrestrial	Eutrophication potential, Accumulated Exceedance	EP-terrestrial	mol N eq.
Photochemical ozone formation	Formation potential of tropospheric ozone	POCP	kg NMVOC eq.
Depletion of abiotic resources – minerals and metals[2]	Abiotic depletion potential for non-fossil resources	ADP-minerals&metals	kg Sb eq.
Depletion of abiotic resources - fossil fuels[2]	Abiotic depletion potential for fossil resources	ADP-fossil	MJ, net calorific value
Water use[2]	Water (user) deprivation potential, deprivation- weighted water consumption	WDP	m^3 world eq. deprived
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.			

Figure 5: Additional Indicators

Impact category	Indicator	Acronym	Unit
Particulate matter emissions	Potential incidence of disease due to PM emissions	PM	Disease incidence
Ionising radiation, human health1	Potential Human exposure efficiency relative to U235	IRP	kBq U235 eq.
Ecotoxicity (freshwater)[2]	Potential Comparative Toxic Unit for ecosystems	ETP-fw	CTUe
Human toxicity, cancer effects[2]	Potential Comparative Toxic Unit for humans	HTP-c	CTUh
Human toxicity, non- cancer effects[2]	Potential Comparative Toxic Unit for humans	HTP-nc	CTUh
Land use related impacts / soil quality[2]	Potential Soil quality index	SQP	dimensionless
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.			

Figure 6: Resource Use, Waste and Output Flow Parameters

Parameter	Acronym	Unit
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ, net calorific value
Use of renewable primary energy resources used as raw materials	PERM	MJ, net calorific value
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ, net calorific value
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	PENRE	MJ, net calorific value
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ, net calorific value
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ, net calorific value
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ, net calorific value
Use of non-renewable secondary fuels	NRSF	MJ, net calorific value
Net use of fresh water	FW	m^3
Hazardous waste disposed	HWD	kg
Non-hazardous waste disposed	NHWD	kg
Radioactive waste disposed	RWD	kg
Components for re-use	CRU	kg
Materials for recycling	MFR	kg
Materials for energy recovery	MER	kg
Exported energy	EE	MJ per energy carrier

Already supplemented.

6. LCA Results

For more information about indicators see Section 5: LCA Results – Definitions and Disclaimers

Figure 7: Core Indicator Results for 1m² of Specification 1 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Transport	Construction installation	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO^2 eq.	3.10E+00	5.67E-01	3.14E-01	0.00E+00	2.49E-02	9.22E-03	9.30E-02	-2.25E+00
GWP-fossil	kg CO^2 eq.	3.20E+00	5.67E-01	7.11E-02	0.00E+00	2.48E-02	9.18E-03	9.29E-02	2.25E+00
GWP-biogenic	kg CO^2 eq.	-1.09E-01	1.12E-04	2.42E-01	0.00E+00	4.31E-05	1.59E-05	4.85E-05	0.00E+00
GWP-luluc	kg CO^2 eq.	2.09E-03	3.01E-04	4.65E-05	0.00E+00	8.29E-05	3.07E-05	6.77E-06	-1.68E-03
ODP	kg CFC 11 eq.	2.90E-08	7.57E-09	1.64E-09	0.00E+00	3.96E-10	1.47E-10	2.79E-10	-8.94E-06
AP	mol H^+ eq.	1.37E-02	1.00E-02	2.45E-04	0.00E+00	1.14E-04	4.23E-05	8.00E-05	-9.70E-03
EP-freshwater	kg PO_4 eq.	5.15E-04	4.31E-05	1.31E-05	0.00E+00	2.66E-06	9.84E-07	1.17E-06	-5.15E-04
EP-marine	kg N eq.	3.43E-03	2.67E-03	5.46E-05	0.00E+00	4.30E-05	1.59E-05	2.07E-03	-1.69E-03
EP-terrestrial	mol N eq.	3.18E-02	2.95E-02	5.59E-04	0.00E+00	4.62E-04	1.71E-04	3.26E-04	-1.75E-02
POCP	kg NMVOCeq.	1.05E-02	8.32E-03	3.12E-04	0.00E+00	1.60E-04	5.91E-05	1.34E-04	-9.19E-03
ADP- minerals & metals2	kg Sb eq.	1.04E-05	1.46E-06	4.22E-07	0.00E+00	8.01E-08	2.96E-08	2.04E-08	-1.92E-05
ADP-fossil2	MJ, net calorific value	4.02E+01	7.31E+00	1.66E+00	0.00E+00	3.51E-01	1.30E-01	2.46E-01	-4.62E+01
WDP	m^3 world eq. deprived	4.84E-01	2.58E-02	1.65E-02	0.00E+00	1.74E-03	6.43E-04	-1.61E-01	-4.32E-01
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.									

Figure 8: Core Indicator Results for 1m² of Specification 2 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Transport	Construction installation	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO^2 eq.	3.86E+00	7.09E-01	3.31E-01	0.00E+00	3.12E-02	1.15E-02	1.16E-01	-2.81E+00
GWP-fossil	kg CO^2 eq.	3.97E+00	7.09E-01	8.80E-02	0.00E+00	3.10E-02	1.15E-02	1.16E-01	-2.81E+00
GWP-biogenic	kg CO^2 eq.	-1.11E-01	1.39E-04	2.42E-01	0.00E+00	5.38E-05	1.99E-05	6.06E-05	0.00E+00
GWP-luluc	kg CO^2 eq.	2.44E-03	3.76E-04	5.80E-05	0.00E+00	1.04E-04	3.83E-05	8.46E-06	-2.10E-03
ODP	kg CFC 11 eq.	3.54E-08	9.46E-09	2.05E-09	0.00E+00	4.95E-10	1.83E-10	3.49E-10	-1.12E-05
AP	mol H^+ eq.	1.69E-02	1.25E-02	3.03E-04	0.00E+00	1.43E-04	5.29E-05	1.00E-04	-1.21E-02
EP-freshwater	kg PO_4 eq.	6.28E-04	5.39E-05	1.63E-05	0.00E+00	3.32E-06	1.23E-06	1.46E-06	-6.43E-04
EP-marine	kg N eq.	4.22E-03	3.33E-03	6.66E-05	0.00E+00	5.38E-05	1.99E-05	2.59E-03	-2.12E-03
EP-terrestrial	mol N eq.	3.92E-02	3.69E-02	6.84E-04	0.00E+00	5.78E-04	2.14E-04	4.07E-04	-2.19E-02
POCP	kg NMVOCeq.	1.30E-02	1.04E-02	3.85E-04	0.00E+00	2.00E-04	7.39E-05	1.68E-04	-1.15E-02
ADP-minerals & metals2	kg Sb eq.	1.29E-05	1.82E-06	5.27E-07	0.00E+00	1.00E-07	3.70E-08	2.55E-08	-2.40E-05
ADP-fossil2	MJ, net calorific value	4.97E+01	9.14E+00	2.07E+00	0.00E+00	4.38E-01	1.62E-01	3.07E-01	-5.77E+01
WDP	m^3 world eq. deprived	5.88E-01	3.23E-02	2.03E-02	0.00E+00	2.17E-03	8.03E-04	-2.01E-01	-5.40E-01
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.									

Figure 9: Core Indicator Results for 1m² of Specification 3 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Transport	Construction installation	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO^2 eq.	4.63E+00	8.51E-01	3.47E-01	0.00E+00	3.74E-02	1.38E-02	1.39E-01	-3.37E+00
GWP-fossil	kg CO^2 eq.	4.74E+00	8.50E-01	1.05E-01	0.00E+00	3.72E-02	1.38E-02	1.39E-01	-3.37E+00
GWP-biogenic	kg CO^2 eq.	-1.13E-01	1.67E-04	2.42E-01	0.00E+00	6.46E-05	2.39E-05	7.27E-05	0.00E+00
GWP-luluc	kg CO^2 eq.	2.79E-03	4.51E-04	6.95E-05	0.00E+00	1.24E-04	4.60E-05	1.01E-05	-2.52E-03
ODP	kg CFC 11 eq.	4.18E-08	1.14E-08	2.45E-09	0.00E+00	5.94E-10	2.20E-10	4.19E-10	-1.34E-05
AP	mol H^+ eq.	2.02E-02	1.50E-02	3.60E-04	0.00E+00	1.72E-04	6.35E-05	1.20E-04	-1.46E-02
EP-freshwater	kg PO_4 eq.	7.41E-04	6.47E-05	1.95E-05	0.00E+00	3.99E-06	1.48E-06	1.75E-06	-7.72E-04
EP-marine	kg N eq.	5.01E-03	4.00E-03	7.86E-05	0.00E+00	6.45E-05	2.39E-05	3.10E-03	-2.54E-03
EP-terrestrial	mol N eq.	4.66E-02	4.43E-02	8.10E-04	0.00E+00	6.93E-04	2.57E-04	4.89E-04	-2.62E-02
POCP	kg NMVOCeq.	1.54E-02	1.25E-02	4.59E-04	0.00E+00	2.40E-04	8.87E-05	2.01E-04	-1.38E-02
ADP-minerals & metals2	kg Sb eq.	1.54E-05	2.18E-06	6.32E-07	0.00E+00	1.20E-07	4.44E-08	3.06E-08	-2.88E-05
ADP-fossil2	MJ, net calorific value	5.93E+01	1.10E+01	2.48E+00	0.00E+00	5.26E-01	1.95E-01	3.69E-01	-6.93E+01
WDP	m^3 world eq. deprived	6.93E-01	3.88E-02	2.42E-02	0.00E+00	2.61E-03	9.64E-04	-2.41E-01	-6.48E-01
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.									

Figure 10: Core Indicator Results for 1m² of Specification 4 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Transport	Construction installation	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO^2 eq.	4.62E+00	8.51E-01	3.22E-01	0.00E+00	3.74E-02	1.38E-02	1.39E-01	-3.37E+00
GWP-fossil	kg CO^2 eq.	4.73E+00	8.50E-01	1.04E-01	0.00E+00	3.72E-02	1.38E-02	1.39E-01	-3.37E+00
GWP-biogenic	kg CO^2 eq.	-1.07E-01	1.67E-04	2.18E-01	0.00E+00	6.46E-05	2.39E-05	7.27E-05	0.00E+00
GWP-luluc	kg CO^2 eq.	2.71E-03	4.51E-04	6.94E-05	0.00E+00	1.24E-04	4.60E-05	1.01E-05	-2.52E-03
ODP	kg CFC 11 eq.	4.14E-08	1.14E-08	2.45E-09	0.00E+00	5.94E-10	2.20E-10	4.19E-10	-1.34E-05
AP	mol H^+ eq.	2.01E-02	1.50E-02	3.59E-04	0.00E+00	1.72E-04	6.35E-05	1.20E-04	-1.46E-02
EP-freshwater	kg PO_4 eq.	7.34E-04	6.47E-05	1.95E-05	0.00E+00	3.99E-06	1.48E-06	1.75E-06	-7.72E-04
EP-marine	kg N eq.	4.99E-03	4.00E-03	7.77E-05	0.00E+00	6.45E-05	2.39E-05	3.10E-03	-2.54E-03
EP-terrestrial	mol N eq.	4.64E-02	4.43E-02	8.02E-04	0.00E+00	6.93E-04	2.57E-04	4.89E-04	-2.62E-02
POCP	kg NMVOCeq.	1.53E-02	1.25E-02	4.57E-04	0.00E+00	2.40E-04	8.87E-05	2.01E-04	-1.38E-02
ADP-minerals & metals2	kg Sb eq.	1.54E-05	2.18E-06	6.31E-07	0.00E+00	1.20E-07	4.44E-08	3.06E-08	-2.88E-05
ADP-fossil2	MJ, net calorific value	5.91E+01	1.10E+01	2.48E+00	0.00E+00	5.26E-01	1.95E-01	3.69E-01	-6.93E+01
WDP	m^3 world eq. deprived	6.88E-01	3.88E-02	2.40E-02	0.00E+00	2.61E-03	9.64E-04	-2.41E-01	-6.48E-01
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.									

Figure 11: Core Indicator Results for 1m² of Specification 5 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Transport	Construction installation	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO^2 eq.	7.37E+00	1.35E+00	5.95E-01	0.00E+00	5.92E-02	2.19E-02	2.21E-01	-5.34E+00
GWP-fossil	kg CO^2 eq.	7.53E+00	1.35E+00	1.59E-01	0.00E+00	5.89E-02	2.18E-02	2.21E-01	-5.33E+00
GWP-biogenic	kg CO^2 eq.	-1.70E-01	2.65E-04	4.36E-01	0.00E+00	1.02E-04	3.79E-05	1.15E-04	0.00E+00
GWP-luluc	kg CO^2 eq.	4.61E-03	7.15E-04	1.05E-04	0.00E+00	1.97E-04	7.28E-05	1.61E-05	-3.99E-03
ODP	kg CFC 11 eq.	6.73E-08	1.80E-08	3.70E-09	0.00E+00	9.41E-10	3.48E-10	6.63E-10	-2.12E-05
AP	mol H^+ eq.	3.20E-02	2.38E-02	5.48E-04	0.00E+00	2.72E-04	1.00E-04	1.90E-04	-2.30E-02
EP-freshwater	kg PO_4 eq.	1.19E-03	1.02E-04	2.94E-05	0.00E+00	6.31E-06	2.34E-06	2.77E-06	-1.22E-03
EP-marine	kg N eq.	7.97E-03	6.33E-03	1.21E-04	0.00E+00	1.02E-04	3.78E-05	4.91E-03	-4.02E-03
EP-terrestrial	mol N eq.	7.40E-02	7.01E-02	1.25E-03	0.00E+00	1.10E-03	4.06E-04	7.74E-04	-4.15E-02
POCP	kg NMVOCeq.	2.44E-02	1.97E-02	6.98E-04	0.00E+00	3.79E-04	1.40E-04	3.19E-04	-2.18E-02
ADP-minerals & metals[2]	kg Sb eq.	2.45E-05	3.46E-06	9.49E-07	0.00E+00	1.90E-07	7.04E-08	4.85E-08	-4.57E-05
ADP-fossil[2]	MJ, net calorific value	9.42E+01	1.74E+01	3.73E+00	0.00E+00	8.33E-01	3.08E-01	5.84E-01	-1.10E+02
WDP	m^3 world eq. deprived	1.09E+00	6.14E-02	3.68E-02	0.00E+00	4.13E-03	1.53E-03	-3.81E-01	-1.03E+00
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.									

Figure 12: Additional Indicator Results for 1m² of Specification 1 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	2.83E-07	2.99E-08	3.93E-09	0.00E+00	2.40E-09	8.87E-10	1.79E-09	-1.06E-07
IRP[1]	kBq U235 eq.	1.99E-01	5.03E-03	2.03E-03	0.00E+00	3.14E-04	1.16E-04	2.08E-04	-9.05E-02
ETP-fw[2]	CTUe	1.31E+01	1.10E+00	5.57E-01	0.00E+00	6.79E-02	2.51E-02	3.38E+00	-8.57E+00
HTP-c[2]	CTUh	1.21E-09	1.47E-10	1.38E-11	0.00E+00	6.02E-12	2.23E-12	6.20E-12	-5.26E-10
HTP-nc[2]	CTUh	2.27E-08	3.52E-09	5.55E-10	0.00E+00	2.42E-10	8.97E-11	1.08E-09	-2.08E-08
SQP[2]	dimensionless	1.82E+01	1.86E+00	1.85E-01	0.00E+00	2.77E-01	1.03E-01	5.81E-01	-5.99E+00
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.									

Figure 13: Additional Indicator Results for 1m² of Specification 2 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	3.50E-07	3.74E-08	4.57E-09	0.00E+00	3.00E-09	1.11E-09	2.23E-09	-1.33E-07
IRP[1]	kBq U235 eq.	2.47E-01	6.29E-03	2.53E-03	0.00E+00	3.93E-04	1.45E-04	2.60E-04	-1.13E-01
ETP-fw[2]	CTUe	1.62E+01	1.37E+00	6.82E-01	0.00E+00	8.49E-02	3.14E-02	4.23E+00	-1.07E+01

HTP-c[2]	CTUh	1.45E-09	1.84E-10	1.66E-11	0.00E+00	7.53E-12	2.79E-12	7.75E-12	-6.57E-10
HTP-nc[2]	CTUh	2.77E-08	4.40E-09	6.67E-10	0.00E+00	3.03E-10	1.12E-10	1.35E-09	-2.61E-08
SQP[2]	dimensionless	1.98E+01	2.32E+00	2.27E-01	0.00E+00	3.47E-01	1.28E-01	7.26E-01	-7.48E+00
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.									

Figure 14: Additional Indicator Results for 1m² of Specification 3 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	4.17E-07	4.49E-08	5.22E-09	0.00E+00	3.59E-09	1.33E-09	2.68E-09	-1.59E-07
IRP[1]	kBq U235 eq.	2.95E-01	7.55E-03	3.03E-03	0.00E+00	4.71E-04	1.74E-04	3.12E-04	-1.36E-01
ETP-fw[2]	CTUe	1.93E+01	1.64E+00	8.07E-01	0.00E+00	1.02E-01	3.77E-02	5.08E+00	-1.29E+01
HTP-c[2]	CTUh	1.69E-09	2.21E-10	1.93E-11	0.00E+00	9.04E-12	3.34E-12	9.30E-12	-7.89E-10
HTP-nc[2]	CTUh	3.28E-08	5.28E-09	7.79E-10	0.00E+00	3.64E-10	1.35E-10	1.62E-09	-3.13E-08
SQP[2]	dimensionless	2.15E+01	2.78E+00	2.70E-01	0.00E+00	4.16E-01	1.54E-01	8.71E-01	-8.98E+00
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.									

Figure 15: Additional Indicator Results for 1m² of Specification 4 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	4.16E-07	4.49E-08	5.04E-09	0.00E+00	3.59E-09	1.33E-09	2.68E-09	-1.59E-07
IRP[1]	kBq U235 eq.	2.94E-01	7.55E-03	3.02E-03	0.00E+00	4.71E-04	1.74E-04	3.12E-04	-1.36E-01
ETP-fw[2]	CTUe	1.92E+01	1.64E+00	8.00E-01	0.00E+00	1.02E-01	3.77E-02	5.08E+00	-1.29E+01
HTP-c[2]	CTUh	1.68E-09	2.21E-10	1.90E-11	0.00E+00	9.04E-12	3.34E-12	9.30E-12	-7.89E-10
HTP-nc[2]	CTUh	3.26E-08	5.28E-09	7.65E-10	0.00E+00	3.64E-10	1.35E-10	1.62E-09	-3.13E-08
SQP[2]	dimensionless	2.07E+01	2.78E+00	2.68E-01	0.00E+00	4.16E-01	1.54E-01	8.71E-01	-8.98E+00
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.									

Figure 16: Additional Indicator Results for 1m² of Specification 5 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Indicator Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	6.62E-07	7.11E-08	8.51E-09	0.00E+00	5.69E-09	2.11E-09	4.24E-09	-2.52E-07
IRP[1]	kBq U235 eq.	4.68E-01	1.19E-02	4.56E-03	0.00E+00	7.46E-04	2.76E-04	4.94E-04	-2.15E-01
ETP-fw[2]	CTUe	3.07E+01	2.60E+00	1.24E+00	0.00E+00	1.61E-01	5.97E-02	8.04E+00	-2.04E+01
HTP-c[2]	CTUh	2.59E-09	3.50E-10	3.04E-11	0.00E+00	1.43E-11	5.29E-12	1.47E-11	-1.25E-09
HTP-nc[2]	CTUh	5.26E-08	8.36E-09	1.22E-09	0.00E+00	5.76E-10	2.13E-10	2.57E-09	-4.95E-08

SQP[2]	dimensionless	3.33E+01	4.41E+00	4.13E-01	0.00E+00	6.59E-01	2.44E-01	1.38E+00	-1.42E+01
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.									

Figure 17:Biogenic Carbon Content of 1m² of Specification 1/2/3 Polyester Fiber Acoustic Panel at Factory Gate

Biogenic carbon content	Unit (1m² Polyester Fiber Acoustic Panel)
Biogenic carbon content in product	0 kg C
Biogenic carbon content in accompanying packaging	5.43E-02 kg C
NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2.	

Figure 18:Biogenic Carbon Content of 1m² of Specification 4 Polyester Fiber Acoustic Panel at Factory Gate

Biogenic carbon content	Unit (1m² Polyester Fiber Acoustic Panel)
Biogenic carbon content in product	0 kg C
Biogenic carbon content in accompanying packaging	4.91E-02 kg C
NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2.	

Figure 19:Biogenic Carbon Content of 1m² of Specification 5 Polyester Fiber Acoustic Panel at Factory Gate

Biogenic carbon content	Unit (1m² Polyester Fiber Acoustic Panel)
Biogenic carbon content in product	0 kg C
Biogenic carbon content in accompanying packaging	9.51E-02 kg C
NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2.	

Figure 20: Resource Use, Waste and Output Flow for 1m² of Specification 1 Polyester Fiber Acoustic Panel

		Raw Material Supply Transport Manufacturing	Deconstruction and Demolition	Transport	Waste Processing	Disposal	Reuse Recovery and Potential	Raw Material Supply Transport Manufacturing	Deconstruction and Demolition
Resource Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	7.70E-01	8.78E-02	3.48E-02	0.00E+00	5.14E-03	1.90E-03	3.27E-03	-1.59E+00
PERM	MJ, net calorific value	2.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	3.52E+00	8.78E-02	3.48E-02	0.00E+00	5.14E-03	1.90E-03	3.27E-03	-1.59E+00
PENRE	MJ, net calorific value	1.20E+01	7.31E+00	1.66E+00	0.00E+00	3.51E-01	1.30E-01	2.46E-01	-4.62E+01
PENRM	MJ, net calorific value	2.81E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	4.02E+01	7.31E+00	1.66E+00	0.00E+00	3.51E-01	1.30E-01	2.46E-01	-4.62E+01
SM	kg	1.66E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	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, net calorific value	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HWD	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
NHWD	kg	6.56E-02	0.00E+00	1.11E-01	0.00E+00	0.00E+00	0.00E+00	1.01E+00	0.00E+00
RWD	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
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
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.92E-01	0.00E+00	0.00E+00
MER	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
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Figure 21: Resource Use, Waste and Output Flow for 1m² of Specification 2 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Resource Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	9.62E-01	1.10E-01	4.34E-02	0.00E+00	6.42E-03	2.38E-03	4.08E-03	-1.99E+00
PERM	MJ, net calorific value	2.93E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	3.90E+00	1.10E-01	4.34E-02	0.00E+00	6.42E-03	2.38E-03	4.08E-03	-1.99E+00
PENRE	MJ, net calorific value	1.51E+01	9.14E+00	2.07E+00	0.00E+00	4.39E-01	1.62E-01	3.08E-01	-5.77E+01
PENRM	MJ, net calorific value	3.47E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	4.97E+01	9.14E+00	2.07E+00	0.00E+00	4.39E-01	1.62E-01	3.08E-01	-5.77E+01
SM	kg	2.08E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	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, net calorific value	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HWD	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
NHWD	kg	8.20E-02	0.00E+00	1.11E-01	0.00E+00	0.00E+00	0.00E+00	1.26E+00	0.00E+00
RWD	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
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
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.40E-01	0.00E+00	0.00E+00
MER	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
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Figure 22: Resource Use, Waste and Output Flow for 1m² of Specification 3 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Resource Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	1.15E+00	1.32E-01	5.19E-02	0.00E+00	7.71E-03	2.85E-03	4.90E-03	-2.39E+00
PERM	MJ, net calorific value	3.12E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	4.27E+00	1.32E-01	5.19E-02	0.00E+00	7.71E-03	2.85E-03	4.90E-03	-2.39E+00
PENRE	MJ, net calorific value	1.81E+01	1.10E+01	2.48E+00	0.00E+00	5.27E-01	1.95E-01	3.69E-01	-6.93E+01
PENRM	MJ, net calorific value	4.12E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	5.93E+01	1.10E+01	2.48E+00	0.00E+00	5.27E-01	1.95E-01	3.69E-01	-6.93E+01
SM	kg	2.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	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, net calorific value	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HWD	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
NHWD	kg	9.84E-02	0.00E+00	1.11E-01	0.00E+00	0.00E+00	0.00E+00	1.51E+00	0.00E+00
RWD	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
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
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-01	0.00E+00	0.00E+00
MER	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
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Figure 23: Resource Use, Waste and Output Flow for 1m² of Specification 4 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Resource Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	1.15E+00	1.32E-01	5.18E-02	0.00E+00	7.71E-03	2.85E-03	4.90E-03	-2.39E+00
PERM	MJ, net calorific value	2.99E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	4.14E+00	1.32E-01	5.18E-02	0.00E+00	7.71E-03	2.85E-03	4.90E-03	-2.39E+00
PENRE	MJ, net calorific value	1.81E+01	1.10E+01	2.48E+00	0.00E+00	5.27E-01	1.95E-01	3.69E-01	-6.93E+01
PENRM	MJ, net calorific value	4.10E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	5.91E+01	1.10E+01	2.48E+00	0.00E+00	5.27E-01	1.95E-01	3.69E-01	-6.93E+01
SM	kg	2.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	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, net calorific value	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HWD	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
NHWD	kg	9.84E-02	0.00E+00	1.00E-01	0.00E+00	0.00E+00	0.00E+00	1.51E+00	0.00E+00
RWD	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
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
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-01	0.00E+00	0.00E+00
MER	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
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

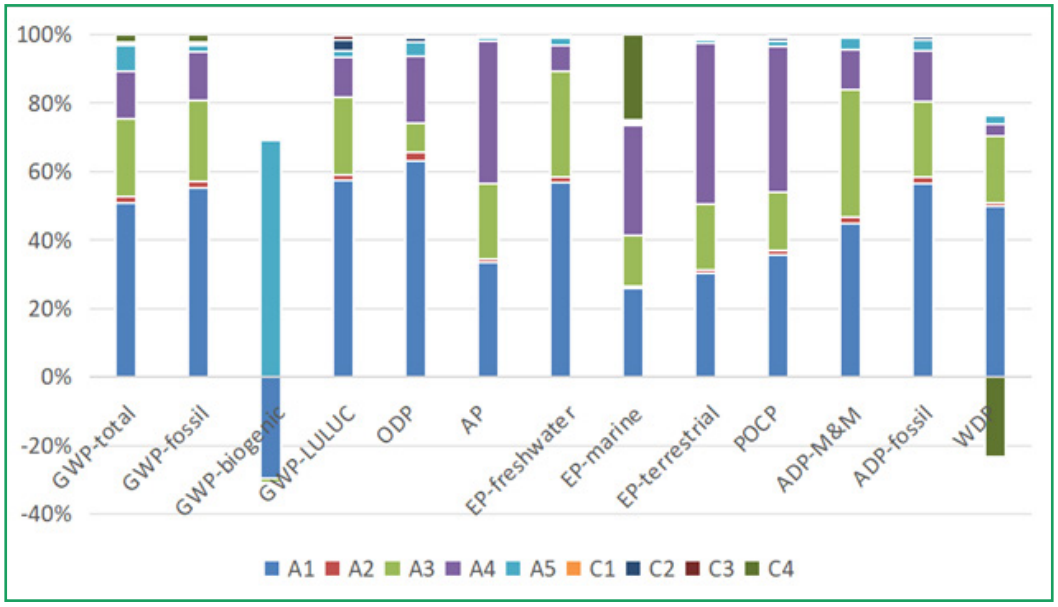
Figure 24: Resource Use, Waste and Output Flow for 1m² of Specification 5 Polyester Fiber Acoustic Panel

		Raw material supply Transport Manufacturing	Deconstruction and demolition	Transport	Waste processing	Disposal	Reuse recovery and potential	Raw material supply Transport Manufacturing	Deconstruction and demolition
Resource Acronym	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	1.83E+00	2.08E-01	7.83E-02	0.00E+00	1.22E-02	4.52E-03	7.75E-03	-3.78E+00
PERM	MJ, net calorific value	4.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	6.56E+00	2.08E-01	7.83E-02	0.00E+00	1.22E-02	4.52E-03	7.75E-03	-3.78E+00
PENRE	MJ, net calorific value	2.86E+01	1.74E+01	3.73E+00	0.00E+00	8.34E-01	3.09E-01	5.84E-01	-1.10E+02
PENRM	MJ, net calorific value	6.56E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	9.42E+01	1.74E+01	3.73E+00	0.00E+00	8.34E-01	3.09E-01	5.84E-01	-1.10E+02
SM	kg	3.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	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, net calorific value	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HWD	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
NHWD	kg	1.56E-01	0.00E+00	1.96E-01	0.00E+00	0.00E+00	0.00E+00	2.39E+00	0.00E+00
RWD	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
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
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E+00	0.00E+00	0.00E+00
MER	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
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

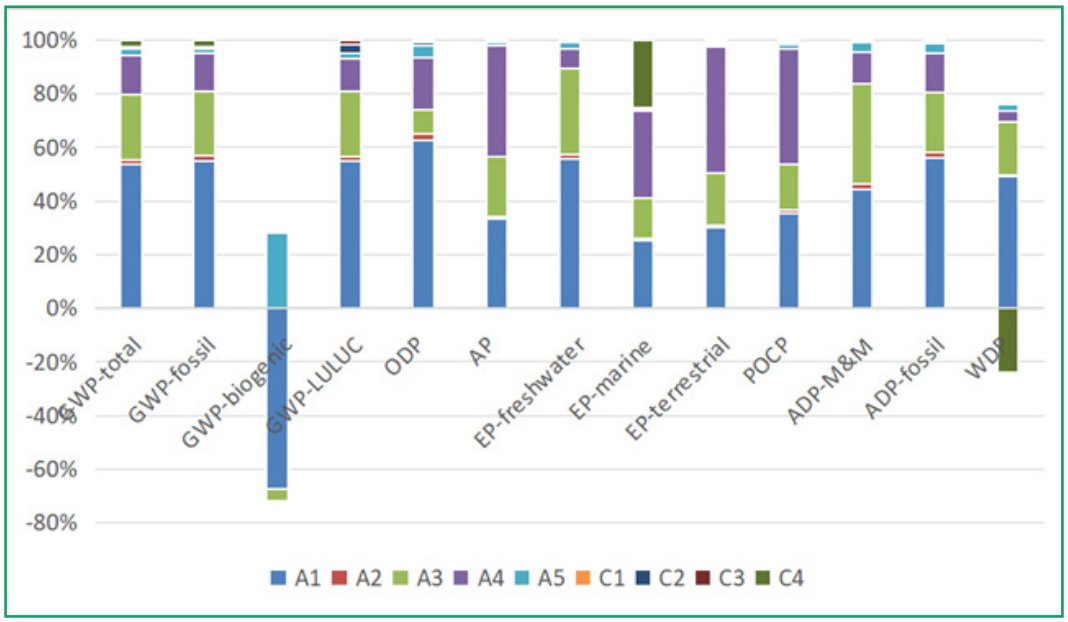
7. Interpretation

Figure 25: Life cycle impact contribution analysis - Specification 1 Polyester Fiber Acoustic Panel



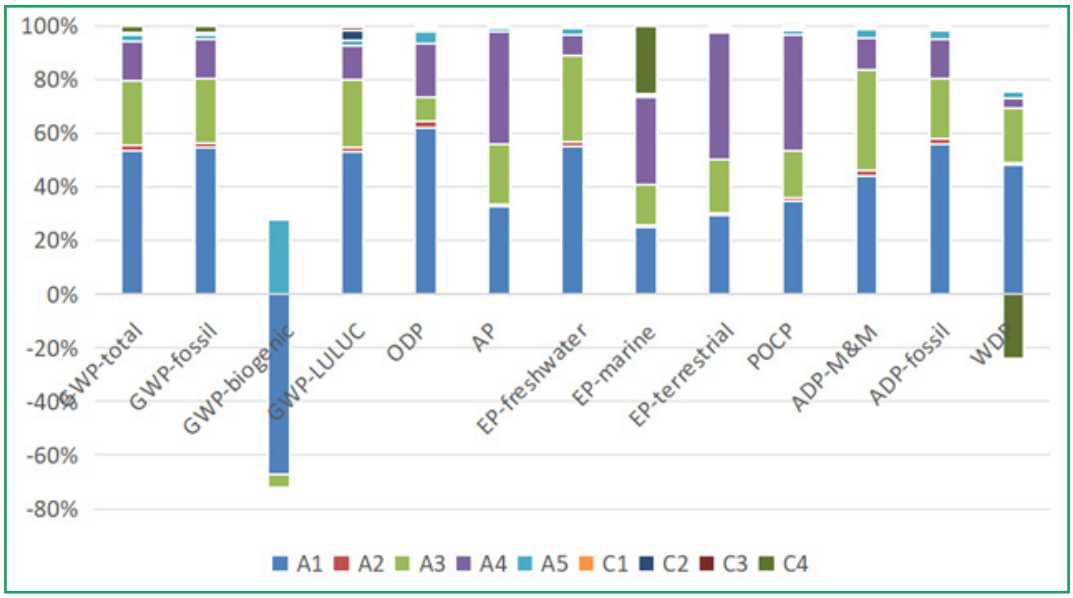
In Specification 1 Polyester Fiber Acoustic Panel, the product stage is the stage that contributes the most to the overall environmental impact of the declaring unit. Using GWP-total as the indicator, product stage contributes 75.45% for the entire lifecycle. In which, raw material supply contributes about 50.79%.

Figure 26: Life cycle impact contribution analysis - Specification 2 Polyester Fiber Acoustic Panel



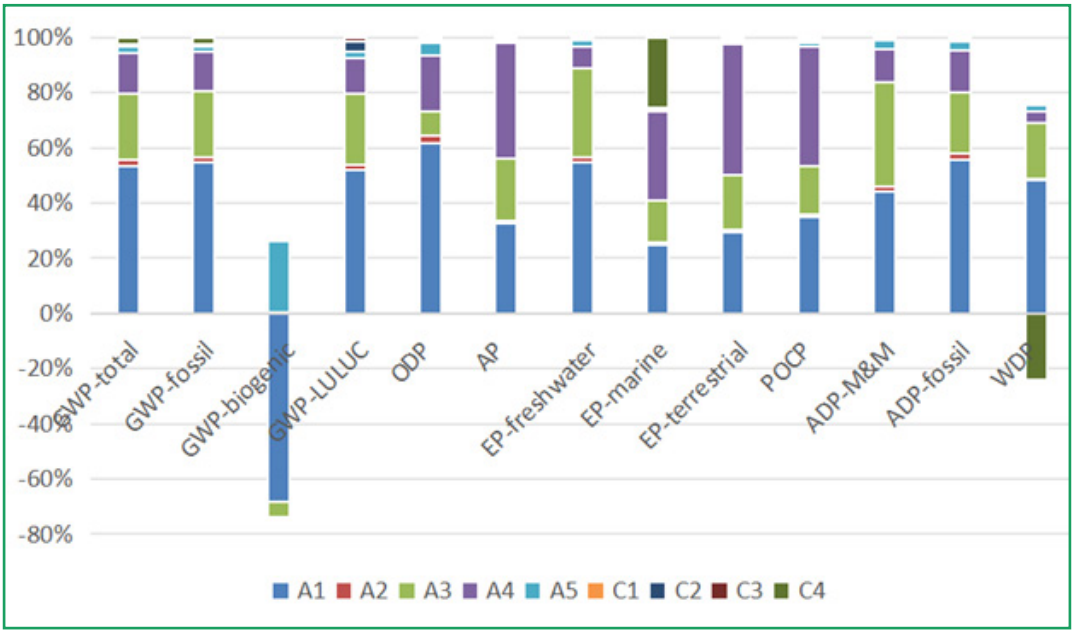
In Specification 2 Polyester Fiber Acoustic Panel, the product stage is the stage that contributes the most to the overall environmental impact of the declaring unit. Using GWP-total as the indicator, product stage contributes 79.45% for the entire lifecycle. In which, raw material supply contributes about 53.44%.

Figure 27: Life cycle impact contribution analysis - Specification 3 Polyester Fiber Acoustic Panel



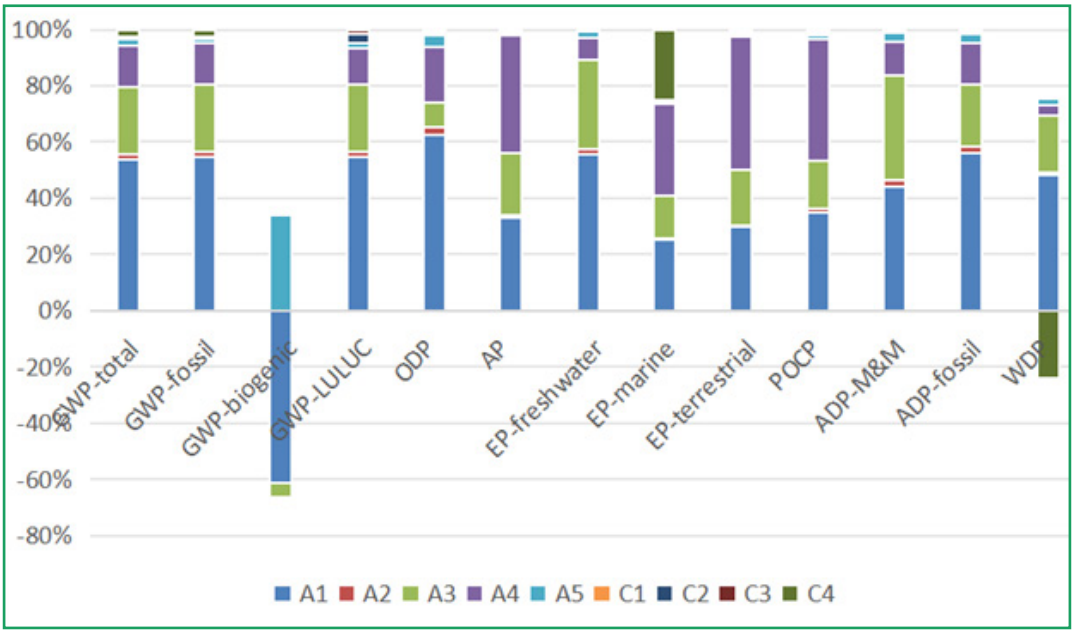
In Specification 3 Polyester Fiber Acoustic Panel, the product stage is the stage that contributes the most to the overall environmental impact of the declaring unit. Using GWP-total as the indicator, product stage contributes 79.56% for the entire lifecycle. In which, raw material supply contributes about 53.47%.

Figure 28: Life cycle impact contribution analysis - Specification 4 Polyester Fiber Acoustic Panel



In Specification 4 Polyester Fiber Acoustic Panel, the product stage is the stage that contributes the most to the overall environmental impact of the declaring unit. Using GWP-total as the indicator, product stage contributes 79.62% for the entire lifecycle. In which, raw material supply contributes about 53.48%.

Figure 29: Life cycle impact contribution analysis - Specification 5 Polyester Fiber Acoustic Panel



In Specification 5 Polyester Fiber Acoustic Panel, the product stage is the stage that contributes the most to the overall environmental impact of the declaring unit. Using GWP-total as the indicator, product stage contributes 79.54% for the entire lifecycle. In which, raw material supply contributes about 53.58%.

In summary, the largest contributor to the potential impacts of Polyester fiber acoustic panels in this study is the raw materials from suppliers, accounting for approximately 53%. Additionally, the manufacturing stage accounts for about 24%, with electricity consumption during manufacturing having the most significant impact.

For the raw material supply stage, polyester fiber contributes to the vast majority of GHG emissions. However, 100% recycled PET is exclusively adopted as the polyester fiber raw material in this project. Therefore, the GHG emissions at the raw material stage have been minimized to the greatest extent possible.

Kingkus New Material Co., Ltd. will be able to effectively control the environmental impacts arising from the production process in the future. Through process optimization, rational reduction of electricity consumption and/or utilization of green electricity, the environmental impacts during the production stage can also be controlled to a certain extent.

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