

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025/ISO 21930

Multi-unit mailboxes
Nasta Co.,Ltd.



EPD HUB, HUB-7832
Published on 16.10.2026, last updated on 16.10.2026, valid until 15.10.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.

Created with One Click LCA

一般情報 - GENERAL INFORMATION

メーカー

MANUFACTURER

メーカー名 Manufacturer	Nasta Co.,Ltd.
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ウェブサイト Website	https://www.nasta.co.jp/

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD 規格、スコープ、認証機関

EPD STANDARDS, SCOPE AND VERIFICATION

プログラムオペレータ Program operator	EPD Hub, hub@epdhub.com
参照規格 Reference standard	EN 15804:2012+A2:2019/AC:2021, ISO 14025 and ISO 21930
PCR PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
製品カテゴリ Sector	Construction product
EPD カテゴリ Category of EPD	Third party verified EPD
親 EPD 番号 Parent EPD number	-
EPD のスコープ Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD 申請者 EPD author	Takaharu Kishi
EPD 検証 EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD 検証 EPD verifier	Afzal khan Peerukhan as an authorized verifier for EPD Hub

製品 - PRODUCT

製品名 Product name	Multi-unit mailboxes
追加ラベル Additional labels	-
参照製品 Product reference	KS-MB4202PU-SV
原材料の原産地 Place(s) of raw material origin	Japan
製造地 Place of production	1-17 Fujimi-cho, Gyoda City, Saitama Prefecture
設置場所および使用場所 Place(s) of installation and use	Japan
データ取得期間 Period for data	2024/04/01-2025/3/31
EPD 平均化 Averaging in EPD	No grouping
A1-A3 の GWP-fossil 変動率 Variation in GWP-fossil for A1-A3 (%)	-
国際標準商品識別コード Global Trade Item Number (GTIN)	-
ノルウェー建築製品データベース Norwegian Building Product Database (NOBB)	-
A1-A3 特定データ（%） A1-A3 Specific data (%)	13.6

環境影響データ概要 - ENVIRONMENTAL DATA SUMMARY

宣言単位 Declared unit	1unit of multi-unit mailboxes
宣言単位あたりの質量 Declared unit mass	4.34 kg
包装材の質量 Mass of packaging	2.64kg
GWP-fossil, A1-A3 (kgCO2e) GWP-fossil, A1-A3 (kgCO2e)	34.8
GWP-total, A1-A3 (kgCO2e) GWP-total, A1-A3 (kgCO2e)	34.9
二次材料の投入(%) Secondary material, inputs (%)	30.1
エネルギー使用量計, A1-A3 (kWh) Total energy use, A1-A3 (kWh)	132
水使用量計、A1-A3 (m3) Net fresh water use, A1-A3 (m3)	0.24

製品とメーカー-PRODUCT AND MANUFACTURER

メーカーの概要 - ABOUT THE MANUFACTURER

Nasta Co., Ltd. manufactures a diverse range of products for residential and commercial buildings, including delivery boxes, communal mailboxes, ventilation openings, and architectural hardware.
Based on our metal processing and resin molding technologies, we carry out all processes from product development to mass production at our domestic facilities. These products are utilized in various settings, from apartment complexes to single-family homes, supporting daily life.

As a manufacturing company dedicated to giving shape to better living, we aim to contribute to a sustainable society through both quality and environmental initiatives.
As part of this commitment, we have obtained certification for ISO9001, the international standard for quality management systems, and ISO14001, the international standard for environmental management systems, engaging in continuous improvement activities. Through these efforts, we maintain and enhance product quality while conducting environmentally conscious business operations.

Furthermore, to reduce our environmental impact, we began using 100% renewable energy at our Gyoda Factory in November 2025. This has effectively reduced CO_2 emissions from electricity consumption in our manufacturing processes to net zero, enabling environmentally friendly manufacturing.
We will continue to contribute to the realization of a sustainable society through the use of renewable energy and strengthened environmental management.
Note: Since the LCA data collection periods differ, the calculations in this assessment exclude the 100% renewable electricity.

製品説明 - PRODUCT DESCRIPTION

KS-MB4202PU-SV is a horizontal communal mailbox designed for apartment buildings and facilities. It features a front-in, front-out system where mail is deposited from the front and retrieved by opening the door upward. The mailbox incorporates a water-resistant structure that prevents rain infiltration and Nasta's proprietary Nasta Guard anti-theft mechanism, making it suitable for both indoor and outdoor use.

As the growth of online shopping has created challenges with standard communal mailboxes that cannot accommodate letter packs, Nasta collaborated with Amazon to develop the D-ALL series based on Japan Post's recommended specifications for large mailboxes. Despite its slim external dimensions of 120 mm in height and 360 mm in width, the KS-MB4202PU-SV can accommodate large mail items up to 340 mm × 260 mm × 35 mm in size, significantly reducing the burden of redelivery attempts.

The registered design Nasta Guard prevents mail theft, while the torque hinge mechanism allows the door to open and close quietly, preventing finger injuries. The interior features a sloped surface that guides mail items forward for easy retrieval, and the water-resistant structure made of resin and stainless steel materials allows for installation both indoors and outdoors.

Combining aesthetic appeal with functionality, this communal mailbox brings the joy of delivering, the pleasure of receiving to both delivery personnel and residents alike.

Further information can be found at:
https://www.nasta.co.jp/

主な原材料構成 - PRODUCT RAW MATERIAL MAIN COMPOSITION

原材料カテゴリ Raw material category	量、質量 - % Amount, mass- %	原材料の原産地 Material origin
金属 Metals	28.9	Japan
鉱物 Minerals	-	-
化石原料 Fossil materials	70.1	Japan
生物由来原料 Bio-based materials	1	Japan

生物起源 CO2 含有量 - BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

製品の生物起源 CO2 含有量、kg C Biogenic carbon content in product, kg C	0.027353
梱包材の生物起源 CO2 含有量、kg C Biogenic carbon content in packaging, kg C	0.041853

機能単位と耐用年数 - FUNCTIONAL UNIT AND SERVICE LIFE

宣言単位 Declared unit	1unit of multi-unit mailboxes
宣言単位あたりの質量 Mass per declared unit	4.34 kg
機能単位 Functional unit	-
参照耐用年数 Reference service life	-

化学物質、REACH 高懸念物質 - SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

製品のライフサイクル - PRODUCT LIFE-CYCLE

システム境界 - SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

製造と梱包 - MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The main body of this product is constructed by assembling injection-molded plastic panels into a box-shaped structure, with stainless steel frames fixed using plastic rivets as reinforcing members. The doors are manufactured by bonding stainless steel decorative panels to injection-molded plastic panels using double-sided adhesive tape.

Actual transportation distances and transportation modes from raw material suppliers and processing sites to the manufacturing site were determined based on the actual procurement sources and transportation routes.

The main manufacturing processes are injection molding, press processing, assembly, and packaging. Press processing is carried out by subcontractors, while final assembly and packaging are conducted at the main manufacturing site. Manufacturing losses generated during the injection molding and assembly processes are assessed based on the actual amounts of waste generated for each material and component.

The energy used during the manufacturing stage consists of 100% grid electricity. The assessment also includes plastic bags and cardboard packaging materials used for shipment, as well as cooling water and purge material used during manufacturing.

Metal scrap, including stainless steel off-cuts generated during manufacturing, is sent for material recycling, while plastic waste is treated with energy recovery. Waste treatment methods are determined based on manufacturing records and information provided by waste treatment contractors. Waste is transported by 3.5- to 7.5-ton trucks, and transportation impacts are calculated based on the actual distances to the waste treatment facilities.

輸送と据付 - TRANSPORT AND INSTALLATION (A4-A5)

This EPD excludes the A4-A5 stage. Therefore, packaging wastes are considered in the end-of-life stage.

製品使用とメンテナンス - PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD excludes the use stage.

製品の廃棄・リサイクル段階 - PRODUCT END OF LIFE (C1-C4, D)

For demolition (C1), it is postulated that 0.00265L/kg of diesel fuel is consumed. This scenario is based on "Revised New Demolition Work Estimation" issued by the Economic Research Association in April 2017.
The transport distance and method to processing facilities (C2) is postulated to be 50km by truck for all scenarios.
In this EPD, end-of-life (EOL) scenarios have been developed for each material category.

Plastic wastes:
50.4% are assumed to be collected and processed for recycling. 21.3% are assumed to be incinerated and the remaining 28.3% are assumed to be landfilled.
The scenario is based on the report Results of the 2018 survey on the actual status of construction by-products from Construction Recycling Promotion Plan published by Japanese Ministry of Land, Infrastructure, Transport and Tourism.

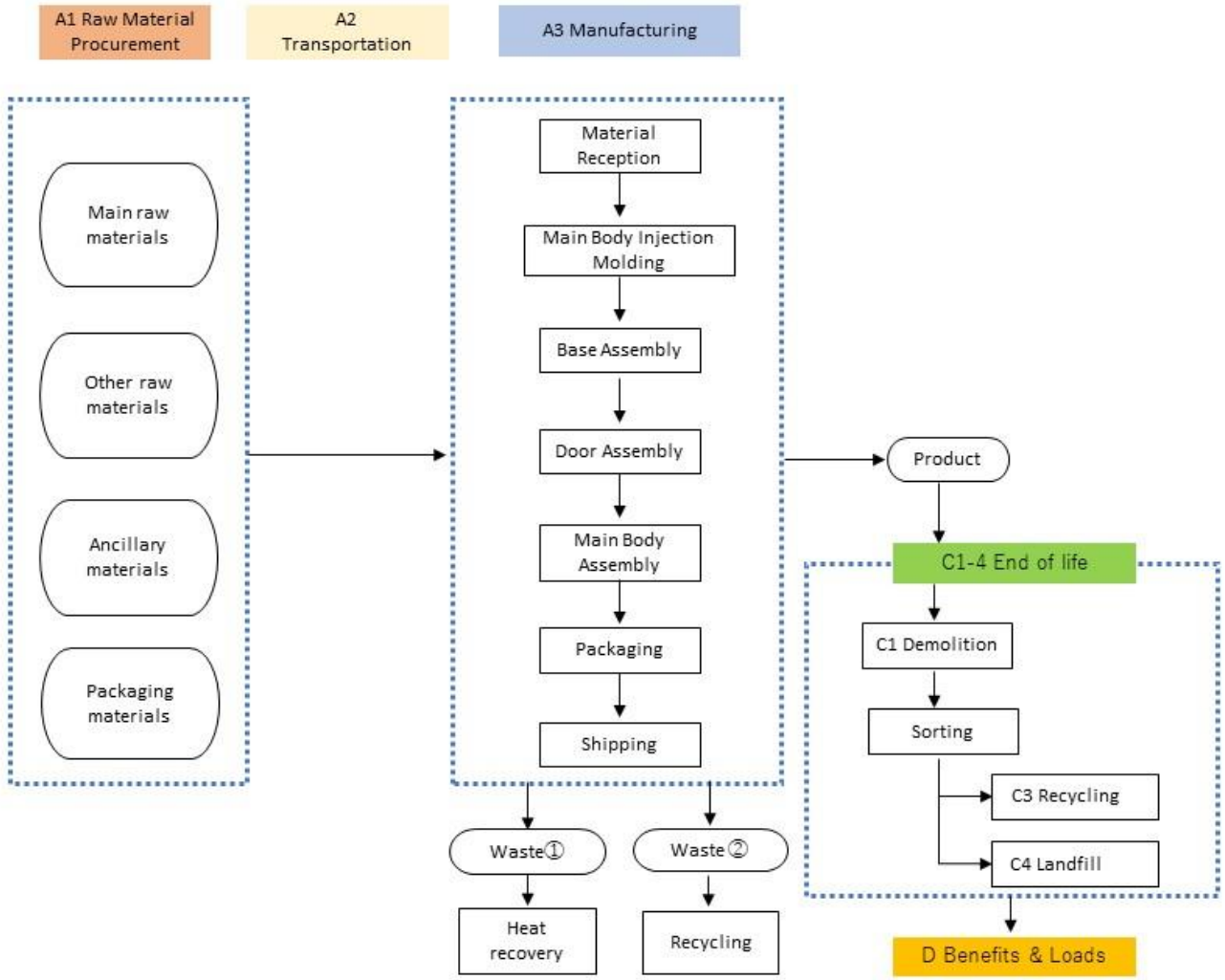
Steel waste:
Steel waste is assumed to be 95.9% recycled and 4.1% landfilled.
As this EPD does not include A5 stage, packaging wastes are considered in the end-of-life stage.

Polyethylene film (packaging):
The EOL scenario is assumed to be 25% recycled, 57% energy recovery, 10% incinerated and 8% landfilled based on the report published by Ministry of Environment.

Paperboard (packaging):
According to the website of Corrugated Packaging Recycling Council, 94.8% of the waste paperboard are collected at proper facilities. Therefore, EOL scenario of paperboard is assumed to be 94.8% recycled and 5.2% incinerated without energy recovery.

Based on EOL scenarios, the benefits and loads are considered in D for cases where there is recycling, reuse and energy recovery.

製造プロセス – SYSTEM DIAGRAM



ライフサイクルアセスメント - LIFE-CYCLE ASSESSMENT

カットオフ基準 - CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

データの検証- VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

Note on indicator consistency: A technical inconsistency between PENRT (total use of non-renewable primary energy) and ADP-fossil (abiotic depletion potential for fossil resources) has been identified in modules A1–A3. Following an update of the sand dataset, a contribution analysis shows that the remaining discrepancy originates from the specific characterization factors in the background environmental profiles of the primary raw materials (Portland cement and reinforcement steel). These inconsistencies are inherent to the third-party verified EPDs and background databases used and cannot be adjusted by the practitioner.

配分、推定 - ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

データタイプ - Data type	配分 - Allocation
原材料 - Raw materials	No allocation
梱包材 - Packaging materials	Not applicable
補助材料 - Ancillary materials	Not applicable
製造エネルギーと廃棄物 - Manufacturing energy and waste	Allocated by revenue

製品と製造拠点の平均化 - PRODUCT & MANUFACTURING SITES GROUPING

平均化の種類 - Type of grouping	No grouping
平均化の方法 - Grouping method	Not applicable
A1-A3 における GWP-fossil の変動率 - Variation in GWP-fossil for A1-A3 (%)	-

This EPD is product and factory specific.

LCA ソフトウェアと参考文献 - LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.11 and One Click LCA databases were used as sources of environmental data. Allocation used in Ecoinvent 3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2’.

環境影響データ - ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

主な環境影響指標 - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2.73E+01	4.24E-01	7.23E+00	3.49E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.41E-02	5.61E-02	4.50E-01	1.77E+00	-2.25E+00
GWP – fossil	kg CO_2e	2.71E+01	4.24E-01	7.29E+00	3.48E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.41E-02	5.60E-02	2.46E-01	1.73E+00	-2.25E+00
GWP – biogenic	kg CO_2e	1.45E-01	2.74E-04	-1.57E-01	-1.16E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.50E-06	1.19E-05	2.03E-01	3.65E-02	0.00E+00
GWP – LULUC	kg CO_2e	2.29E-02	2.30E-04	9.37E-02	1.17E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.51E-06	2.59E-05	2.46E-04	2.07E-05	-1.21E-03
Ozone depletion pot.	kg $CFC_{-11}e$	5.73E-07	5.61E-09	2.26E-07	8.05E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.75E-10	7.43E-10	1.12E-09	8.47E-10	-9.25E-09
Acidification potential	mol H^+e	1.22E-01	1.27E-03	2.71E-02	1.50E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.98E-04	2.57E-04	1.09E-03	4.89E-04	-9.45E-03
EP-freshwater[2)]	kg Pe	1.20E-02	5.54E-05	2.62E-03	1.47E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.27E-06	6.21E-06	6.64E-05	7.10E-06	-1.33E-03
EP-marine	kg Ne	2.28E-02	3.21E-04	6.22E-03	2.94E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.84E-04	9.46E-05	5.56E-04	2.10E-03	-2.02E-03
EP-terrestrial	mol Ne	2.37E-01	3.49E-03	5.98E-02	3.00E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.02E-03	1.03E-03	3.23E-03	2.30E-03	-2.18E-02
POCP (“smog”)[3)]	kg NMVOCe	9.60E-02	1.62E-03	2.38E-02	1.21E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.02E-04	3.56E-04	9.98E-04	6.27E-04	-7.17E-03
ADP-minerals & metals[4)]	kg Sbe	3.66E-04	2.20E-06	1.09E-05	3.79E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.58E-08	1.84E-07	3.16E-06	1.47E-07	-1.96E-05
ADP-fossil resources	MJ	4.31E+02	5.74E+00	9.76E+01	5.34E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.76E-01	7.88E-01	1.57E+00	5.76E-01	-2.28E+01
Water use[5)]	m^3e depr.	9.14E+00	3.44E-02	1.10E+00	1.03E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.44E-03	4.41E-03	4.53E-02	1.30E-01	-7.07E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

追加(オプション)の環境影響指標 - ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.65E-06	2.77E-08	2.13E-07	1.89E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.13E-08	5.25E-09	7.67E-08	3.98E-09	-2.21E-07
Ionizing radiation[6)]	kBq U235e	1.17E+00	6.59E-03	1.40E-01	1.32E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.55E-04	6.66E-04	6.79E-03	7.84E-04	-5.14E-02
Ecotoxicity (freshwater)	CTUe	1.31E+03	7.32E+00	1.97E+02	1.51E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.17E-02	9.11E-01	4.26E+01	7.70E+00	-1.02E+02
Human toxicity, cancer	CTUh	2.69E-08	1.68E-10	1.56E-09	2.86E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.53E-12	1.35E-11	5.43E-10	1.57E-10	-2.68E-09
Human tox. non-cancer	CTUh	3.10E-07	3.47E-09	3.54E-08	3.49E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.17E-11	5.39E-10	9.00E-09	6.35E-09	-2.04E-08
SQP[7)]	-	1.03E+02	2.43E+00	3.22E+01	1.37E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.04E-02	5.80E-01	2.50E+00	6.45E-01	-7.71E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

天然資源の利用 - USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	3.54E+01	1.15E-01	8.34E+00	4.39E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.65E-03	1.13E-02	-3.96E+01	-2.47E+00	-2.49E+00
Renew. PER as material	MJ	5.79E-01	0.00E+00	0.00E+00	5.79E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-2.92E-01	-2.87E-01	0.00E+00
Total use of renew. PER	MJ	3.60E+01	1.15E-01	8.34E+00	4.45E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.65E-03	1.13E-02	-3.99E+01	-2.76E+00	-2.49E+00
Non-re. PER as energy	MJ	3.48E+02	5.74E+00	7.72E+01	4.31E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.76E-01	7.88E-01	-6.79E+01	-5.77E+01	-2.28E+01
Non-re. PER as material	MJ	2.81E-03	0.00E+00	0.00E+00	2.81E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-1.42E-03	-1.39E-03	-4.35E+01
Total use of non-re. PER	MJ	3.48E+02	5.74E+00	7.72E+01	4.31E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.76E-01	7.88E-01	-6.79E+01	-5.77E+01	-6.63E+01
Secondary materials	kg	1.30E+00	3.00E-03	1.50E-02	1.32E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.39E-04	3.45E-04	6.79E-03	4.16E-04	-2.04E-01
Renew. secondary fuels	MJ	1.12E-02	3.55E-05	5.43E-04	1.18E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.26E-07	4.45E-06	6.56E-05	1.18E-05	-2.58E-04
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	2.13E-01	8.63E-04	2.54E-02	2.40E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.81E-05	1.11E-04	8.64E-04	-1.35E-03	-1.47E-02

8) PER = Primary energy resources.

廃棄・リサイクル段階 — 廃棄 - END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	8.61E+00	1.52E-02	4.39E-01	9.06E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.42E-04	1.79E-03	2.46E-02	2.84E-02	-9.58E-01
Non-hazardous waste	kg	7.53E+01	3.07E-01	2.75E+01	1.03E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.74E-03	3.45E-02	6.02E-01	3.32E+00	-7.16E+00
Radioactive waste	kg	2.94E-04	1.63E-06	3.40E-05	3.30E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.26E-08	1.63E-07	1.68E-06	1.97E-07	-1.29E-05

廃棄・リサイクル段階 — 出力フロー - END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	5.14E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	5.90E-03	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.87E-01	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	2.70E-02	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.60E-01	0.00E+00	0.00E+00

環境影響 - ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2.71E+01	4.22E-01	7.43E+00	3.50E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.38E-02	5.57E-02	3.37E-01	1.73E+00	-2.24E+00
Ozone depletion Pot.	kg CFC_{-11}e	5.38E-07	4.53E-09	1.70E-07	7.13E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.35E-10	5.98E-10	9.78E-10	7.41E-10	-8.32E-09
Acidification	kg SO_2e	1.01E-01	1.01E-03	2.21E-02	1.24E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.80E-04	1.91E-04	8.54E-04	3.50E-04	-7.68E-03
Eutrophication	kg PO_4^3e	1.02E-01	2.77E-04	3.30E-02	1.36E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.53E-05	4.80E-05	2.59E-04	1.84E-04	-1.44E-03
POCP (“smog”)	kg C_2H_4e	7.94E-03	1.03E-04	1.54E-03	9.59E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.10E-05	1.56E-05	1.39E-04	3.59E-05	-9.95E-04
ADP-elements	kg Sbe	3.44E-04	2.15E-06	9.83E-06	3.56E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.54E-08	1.79E-07	3.14E-06	1.06E-07	-1.94E-05
ADP-fossil	MJ	4.11E+02	5.64E+00	9.54E+01	5.12E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.72E-01	7.77E-01	1.47E+00	5.64E-01	-2.20E+01

環境影響 - ENVIRONMENTAL IMPACTS – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	2.71E+01	4.24E-01	7.39E+00	3.50E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.41E-02	5.61E-02	2.47E-01	1.73E+00	-2.25E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated in line with the guidance. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

シナリオドキュメント

- SCENARIO DOCUMENTATION

データソース - DATA SOURCES

製造エネルギーのシナリオドキュメント- Manufacturing energy scenario documentation

1. Electricity production, natural gas, conventional power plant, Japan, Ecoinvent, 0.75 kgCO2e/kWh
2. Electricity production, hard coal, Japan, Ecoinvent, 0.97 kgCO2e/kWh

廃棄・リサイクル段階のシナリオドキュメント -End of life (C1-C4)

Scenario documentation

シナリオパラメータ- Scenario parameter	値- Value
回収プロセス：分別回収（kg） Collection process: collected separately (kg)	6.98
回収プロセス：混合廃棄物（kg） Collection process: Mixed waste (kg)	-
再生：再使用（kg） Recovery: re-use (kg)	-
再生：リサイクル（kg） Recovery: recycling (kg)	5.1361
再生：エネルギー回収（kg） Recovery: energy recovery (kg)	0.0059
廃棄（kg） Disposal (kg)	1.838
シナリオの前提条件（例：輸送［手段、km］およびその他） Scenario assumptions e.g. transportation (mode, km) & other	Transported 50 km by lorry

検証報告 - THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Afzal khan Peerukhan as an authorized verifier for EPD Hub Limited
16.10.2026

