panelclaw®
AN ENSTALL COMPANY

Environmental Product Declaration

According to EN15804+A2

This declaration is for:
Dual System High Wind Exposure Solar Panel Mounting System
Provided by:
PanelClaw

MRPI® registration:
1.1.01174.2026

Program operator:
Stichting MRPI®
Publisher:
Stichting MRPI®
www.mrpi.nl

Date of first issue:
16-4-2026
Date of this issue:
16-4-2026
Expiry date:
16-4-2031

ECO PLATFORM EPD VERIFIED

MRPI milieu relevante product informatie

COMPANY INFORMATION

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PRODUCT

Dual System High Wind Exposure Solar Panel Mounting System

DECLARED UNIT / FUNCTIONAL UNIT

1 Piece

DESCRIPTION OF PRODUCT

Solar panel mounting system for mounting solar panels on flat roofs

MRPI® REGISTRATION

1.1.01174.2026

DATE OF THIS ISSUE

16-4-2026

EXPIRY DATE

16-4-2031

VISUAL PRODUCT

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by dr. Lex Roes, Ecochain Technologies B.V.. The LCA study has been done by Stijn Mulder & Julia Nauta, EcoReview B.V.. The certificate is based on an LCA-dossier according to EN15804+A2. It is verified according to the 'Verification protocol for MRPI LCA project report & EPD 21th of May 2025, V. 5.2'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

MORE INFORMATION

https://panelclaw.eu/en/products/wave/

Ing. L. L. Oosterveen MSc. MBA **Managing Director MRPI**	DEMONSTRATION OF VERIFICATION CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration and data according to EN15804+A2 Internal: External: X
	Third party verifier: dr. Lex Roes, Ecochain Technologies B.V.
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

The product conserns a solar panel mounting system that is intended for mounting solar panels on flat roofs with high wind exposure. The high exposure version relates to a high demand of ballast due to high wind speeds (> 850 N/m² wind load) and/or high snow load regions (> 2.5kN/m²).

Typically, the panels have a length between 1722 mm and 2382 mm and a width between 1000 mm and 1150 mm. Solar panels are configured in a dual set up mostly along the east-west facing direction.

PanelClaw imports prefabricated components from suppliers and transports those to their warehouse whereafter components are distributed to installation locations by truck and installed manually on roofs.

The reference service life of the mounting system is 20 years

	Weight (kg)
Wave Stabilizer 4000	2,121
Wave ballast bracket	0,103
Wave ballast tray	0,731
Wave wind deflector clamps	0,068
Wave dual 2P 1070-1150	7,098
Wave wind deflector set 1070-1150	0,157

Component (> 1%)	(kg / %)
Galvanized steel	0,94
Plastic	0,06

SCOPE AND TYPE

The system boundary of this assessment covers the full cradle to grave including all activities related to the supply and transport of raw materials, the production process, installation, the use phase, and the end-of-life of the materials after use. For the end-of-life, forfaitary scenarios from the NMD were selected based on the material types. The selected scenarios were EOL 50, 35 and 31.

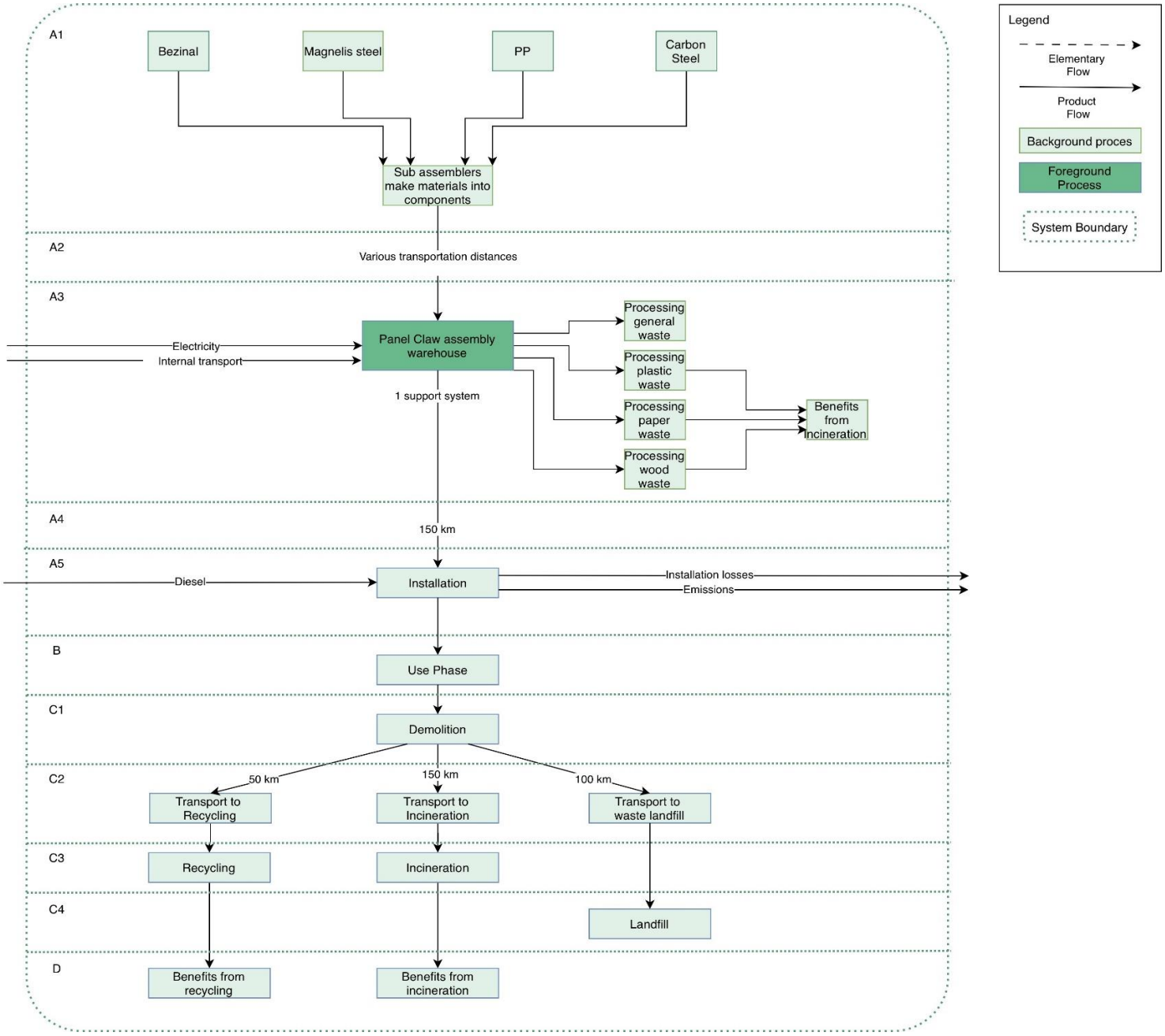
The studied product is intended for the European market.

The reference year for data collection is 2025. The LCA model for this MPRI EPD was created using the SimaPro Software (version 10.2.0.3). The EPD is an average EPD with the underlying methodology of the NMD Assessment Method 1.2. Life cycle inventory data for all raw materials and process inputs sourced from the background system are taken from:
- EcoInvent 3.6 and EF 3.0 (for Set 1 indicators)
- EcoInvent 3.9.1 and EF 3.1 (for Set 2 indicators)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

A sensitivity analaysis was performed to consider "scatter as a result of averaging in setting up a group average". This anaysis concerned an investigation into:
1. If the product's environmental impact for a smaller field differs significantly to the product's environmental impact of a large field due to non-linear scaling of some components;
2. If all dual high wind exposure systems, with and without deflector, could be averaged to one system.

Outcomes showed that the deviation of environmental impacts between a small field and a large field and a system with and without deflector are within the allowed range limits prescribed by the NMD Assessment Method 1.2.

The EPD of the construction products may not be comparable if they do not comply with EN15804+A2.

ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	4,90E-02	1,26E-05	5,58E-07	4,90E-02	2,41E-06	1,47E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,66E-12	1,63E-06	2,13E-05	7,57E-08	-4,40E-02
ADPF	MJ	6,46E+02	1,14E+01	3,97E-02	6,57E+02	2,18E+00	2,00E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,88E-05	1,47E+00	5,26E+00	2,11E-01	-2,38E+02
GWP	kg CO2 eq.	4,40E+01	7,37E-01	1,06E-02	4,47E+01	1,41E-01	1,39E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,73E-06	9,48E-02	1,42E+00	1,85E-02	-1,81E+01
ODP	kg CFC11 eq.	3,09E-06	1,39E-07	2,27E-10	3,23E-06	2,66E-08	9,96E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,80E-13	1,79E-08	4,80E-08	2,40E-09	-7,47E-07
POCP	kg ethene eq.	5,94E-02	4,61E-04	8,74E-07	5,99E-02	8,79E-05	1,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,42E-10	5,93E-05	3,36E-04	9,75E-06	-3,51E-02
AP	kg SO2 eq.	1,80E-01	2,73E-03	2,43E-05	1,82E-01	5,20E-04	5,61E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,27E-09	3,51E-04	3,80E-03	5,45E-05	-6,75E-02
EP	kg (PO4) 3 eq.	2,46E-02	5,27E-04	-5,40E-07	2,51E-02	1,01E-04	7,73E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E-09	6,78E-05	5,12E-04	1,35E-05	-8,39E-03

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	2,49E+01	1,59E-01	7,39E-03	2,50E+01	3,04E-02	7,68E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,34E-07	2,05E-02	4,86E-01	7,16E-03	-1,13E+01
FAETP	kg DCB eq.	7,23E-01	6,69E-03	5,65E-04	7,30E-01	1,28E-03	2,26E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E-08	8,61E-04	2,04E-02	2,53E-03	1,97E-02
MAETP	kg DCB eq.	1,11E+03	1,80E+01	3,07E+00	1,13E+03	3,43E+00	3,57E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,32E-05	2,31E+00	5,43E+01	1,09E+00	-7,49E+01
TETP	kg DCB eq.	2,09E-01	9,05E-04	6,21E-04	2,10E-01	1,73E-04	6,36E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,12E-09	1,16E-04	1,45E-03	1,79E-05	8,18E-01
ECI	euro	5,70E+00	7,07E-02	1,65E-03	5,77E+00	1,35E-02	1,78E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,76E-07	9,10E-03	1,42E-01	2,13E-03	-2,32E+00
ADPF	kg Sb eq.	3,11E-01	5,49E-03	1,91E-05	3,16E-01	1,05E-03	9,61E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E-08	7,06E-04	2,53E-03	1,01E-04	-1,15E-01

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	4,07E+01	8,18E-01	4,12E-02	4,16E+01	2,25E-01	1,30E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,07E-06	1,51E-01	1,44E+00	2,04E-02	-1,20E+01
GWP-fossil	kg CO2 eq.	4,06E+01	8,18E-01	1,09E-02	4,15E+01	2,24E-01	1,30E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,06E-06	1,51E-01	1,45E+00	2,00E-02	-1,21E+01
GWP-biogenic	kg CO2 eq.	5,77E-02	6,05E-04	3,03E-02	8,86E-02	1,87E-04	2,47E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,17E-09	1,26E-04	-6,94E-03	3,71E-04	1,48E-01
GWP-luluc	kg CO2 eq.	2,34E-02	2,67E-04	-1,91E-06	2,37E-02	1,09E-04	7,34E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,58E-10	7,34E-05	5,90E-04	3,03E-06	-1,51E-03
ODP	kg CFC11 eq.	1,12E-06	1,80E-08	2,96E-10	1,14E-06	4,89E-09	3,47E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,60E-14	3,30E-09	6,63E-09	2,80E-10	-4,38E-07
AP	mol H+ eq.	1,77E-01	3,13E-03	2,40E-05	1,80E-01	7,36E-04	5,57E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-08	4,97E-04	4,62E-03	6,53E-05	-4,30E-02
EP-fresh water	kg P eq.	1,92E-03	5,31E-06	2,34E-07	1,93E-03	1,83E-06	5,84E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,71E-11	1,24E-06	1,84E-05	9,18E-08	7,20E-04
EP-marine	kg N eq.	3,46E-02	1,19E-03	4,84E-07	3,57E-02	2,50E-04	1,12E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,30E-09	1,68E-04	1,09E-03	3,15E-05	-8,44E-03
EP-terrestrial	mol N eq.	4,30E-01	1,28E-02	-3,44E-05	4,43E-01	2,67E-03	1,38E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,59E-08	1,80E-03	1,24E-02	2,91E-04	-1,35E-01
POCP	kg NMVOC eq.	1,94E-01	4,90E-03	4,02E-06	1,99E-01	1,12E-03	6,14E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,59E-08	7,55E-04	3,67E-03	1,10E-04	-8,13E-02
ADP-minerals & metals	kg Sb eq.	1,04E-03	1,30E-06	5,62E-07	1,04E-03	6,89E-07	3,21E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,06E-12	4,64E-07	2,47E-05	2,36E-08	-8,27E-04
ADP-fossil	MJ, net calorific value	4,90E+02	1,19E+01	3,61E-02	5,02E+02	3,22E+00	1,54E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,10E-05	2,17E+00	5,53E+00	2,24E-01	-1,17E+02
WDP	m3 world eq. Deprived	1,54E+01	5,42E-02	3,44E-03	1,55E+01	1,60E-02	4,68E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,63E-07	1,08E-02	7,52E-02	2,28E-03	7,05E-02

GWP-total	=	Global Warming Potential total
GWP-fossil	=	Global Warming Potential fossil fuels
GWP-biogenic	=	Global Warming Potential biogenictotal
GWP-luluc	=	Global Warming Potential land use and land use change
ODP	=	Depletion potential of the stratospheric ozone layer
AP	=	Acidification Potential, Accumulated Exceedence
EP-freshwater	=	Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
EP-marine	=	Eutrophication Potential, fraction of nutrients reaching marine end compartment
EP-terrestrial	=	Eutrophication Potential, Accumulated Exceedence
POCP	=	Formation potential of tropospheric ozone photochemical oxidants
ADP-minerals & metals	=	Abiotic Depletion Potential for non-fossil resources [1]
ADP-fossil	=	Abiotic Depletion for fossil resources potential [1]
WDP	=	Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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 experience with the indicator.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease inci-dence	3,09E-06	7,15E-08	9,19E-12	3,17E-06	1,95E-08	9,79E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,49E-14	1,31E-08	6,22E-08	1,56E-09	-1,03E-06
IRP	kBq U235 eq.	8,38E-01	5,45E-03	1,05E-04	8,44E-01	1,66E-03	2,58E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-08	1,12E-03	1,45E-02	2,98E-04	2,28E-02
ETP-fw	CTUe	3,98E+02	5,61E+00	3,46E-01	4,04E+02	1,58E+00	1,26E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,80E-05	1,07E+00	4,46E+00	7,04E+00	-1,39E+02
HTP-c	CTUh	2,22E-07	2,54E-10	1,75E-11	2,22E-07	1,00E-10	6,68E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,68E-15	6,76E-11	6,49E-10	9,73E-12	1,10E-07
HTP-nc	CTUh	6,77E-07	5,21E-09	4,49E-10	6,82E-07	2,28E-09	2,15E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,47E-14	1,54E-09	2,91E-08	7,03E-10	7,44E-07
SQP	-	1,14E+02	1,25E+01	-1,96E-01	1,26E+02	2,49E+00	4,23E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,07E-06	1,68E+00	9,67E+00	5,29E-01	-2,43E+01

PM = Potential incidence of disease due to PM emissions
IRP = Potential Human exposure efficiency relative to U235 [1]
ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
HTP-c = Potential Comparative Toxic Unit for humans, cancer [2]
HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
SQP = Potential soil quality index [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.

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 experience with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,16E-02	7,45E-05	1,55E-06	1,16E-02	2,03E-05	3,51E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,63E-10	1,37E-05	3,14E-05	1,05E-06	-7,10E-03
NHWD	kg	7,19E+00	1,08E+00	2,51E-03	8,28E+00	2,10E-01	2,92E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,39E-07	1,42E-01	1,74E-01	9,18E-01	2,11E+00
RWD	kg	6,13E-04	3,45E-06	1,00E-07	6,17E-04	1,07E-06	1,89E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,28E-11	7,24E-07	1,10E-05	1,65E-07	2,40E-05
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	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	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	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	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
EEE	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ETE	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,68E+01	1,55E-01	-1,19E-01	2,69E+01	5,07E-02	8,35E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,15E-07	3,42E-02	8,44E-01	1,37E-02	1,18E+00
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,68E+01	1,55E-01	-1,19E-01	2,69E+01	5,07E-02	8,35E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,15E-07	3,42E-02	8,44E-01	1,37E-02	1,18E+00
PENRE	MJ	4,73E+02	1,19E+01	3,84E-02	4,85E+02	3,22E+00	1,54E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,10E-05	2,17E+00	5,53E+00	2,24E-01	-1,17E+02
PENRM	MJ	1,68E+01	0,00E+00	0,00E+00	1,68E+01	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	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,90E+02	1,19E+01	3,84E-02	5,02E+02	3,22E+00	1,54E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,10E-05	2,17E+00	5,53E+00	2,24E-01	-1,17E+02
SM	kg	3,33E+00	0,00E+00	0,00E+00	3,33E+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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,26E-01	1,77E-03	1,00E-04	4,28E-01	5,29E-04	1,30E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E-09	3,57E-04	2,97E-03	2,81E-04	3,97E-02

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials
PERM = Use of renewable primary energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total use of non-renewable primary energy resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NSRF = Use of non-renewable secondary fuels
FW = Use of net fresh water

CALCULATION RULES

Methodological assumptions and reproducibility: The process descriptions and quantities in this study are reproducible in accordance to the reference standards that have been used. The references of all sources, both primary and public sources and literature, have been documented. In addition, to facilitate the reproducibility of this LCA, a full set of data records has been generated

Cut-off rules: All known inputs and outputs - like emissions, energy and materials – have been considered in this LCA. And in accordance with ISO14040, ISO14025, EN15804+A2 and the NMD Assessment method 1.2, the total neglected input flows per module do not exceed 5% of energy usage or mass. Packaging matereials have not been considered in module A5 since the toal mass of the packaging material is less than 1% of the product's mass. Moreover, products arrive in a package at PanelClaw's warehouse and leave the warehouse untouched in the same packaging material. Disposal of waste in PanelClaw's warehouse is recorded in A3. Capital goods were not considered in this study since those only regard a distribution warehouse.

Data quality: Data flows have been modelled as realistically as possible. Data quality assessment is based on the principle that the primary data used for materials and processes occurring at the production site is selected in the first instance. Where this is not available, other reference data is selected from appropriate sources.

Data collection period: All data included in the study was retrieved in the year 2025

Allocations: Energy consumption and waste generation in A3 are mass allocated over the total sales in 2025

The biogenic carbon content in the product is 0
The biogenic carbon content in the packaging is 0 since packaging falls under the cut-off criteria.

Biogenic carbon content	kg C
Biogenic carbon content in product	0
Biogenic carbon content in accompanying packaging	0
Note: 1 kg biogenic carbon (kg C) is equivalent to 44/12 kg of CO2.	

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1. Raw materials supply: All materials needed for production are taken into account.
A2. Transport of raw materials to manufacturer: The transportation from the suppliers to production facilities is included.
A3. Manufacturing: All relevant production processes including energy consumption and waste generation have been included in this study.

The processes at PanelClaw only consits of warehouse and storage. No production processes in module A3 are declared.

For the end-of-life, forfaitary scenarios from the NMD were selected based on the materials. The selected scenarios were EOL 50 for galvinized. This EOL prescribes 5% landfill and 95% recycling. EOL 35 for mixed steel which prescribes 5% landfill, 90% recycling and 5% incineration and EOL 31 for plastic components which prescribes 20% landfill and 80% incineration.

For the electricity mix a medium voltage market for dataset has been selected based on the country of origin (location based approach) - 0,01800 kg CO2 eq./kWh.

DECLARATION OF SVHC

The product does not contain SVHC

REFERENCES

ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO14025:2006.

ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.

ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.

EN 15804: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products', I.S. EN 15804:2012+A1:2013 and EN 15804:2019+A2.

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CML - Department of Industrial Ecology, CML-IA Characterisation Factors, Dated August 2016, Leiden University, Leiden, Netherlands Available at: https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors.

EPLCA. (2025, 10 22). Environmental Footprint reference packages. Retrieved from https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html

PRé Sustainability - Simapro 10.2.0.3

REMARKS