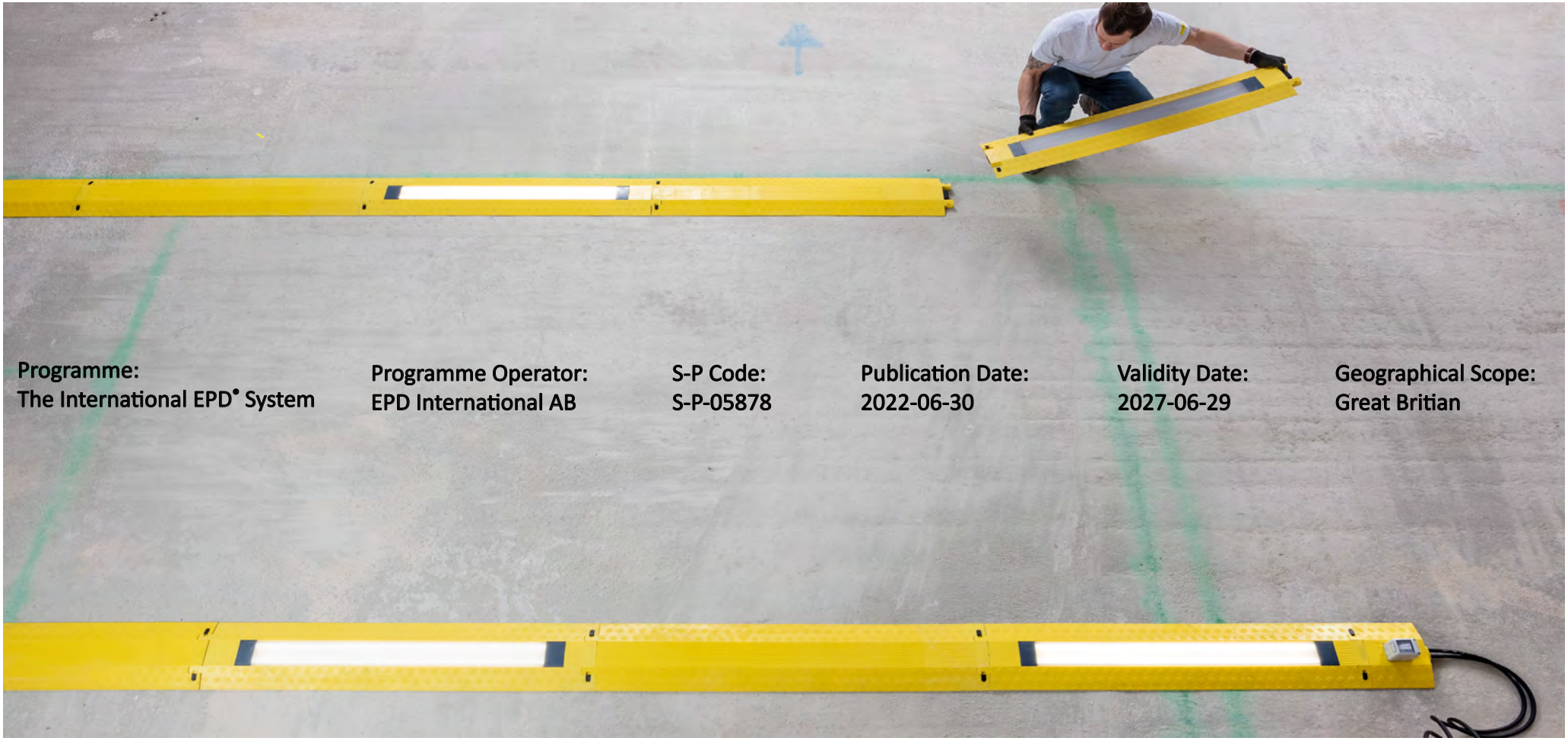
ENVIRONMENTAL PRODUCT DECLARATION

POWERTRACK by NOVUS 48

IN ACCORDANCE WITH ISO 14025:2006 and EN 15804:2012+A2:2019



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ECO PLATFORM EPD VERIFIED

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www environdec.com.

PROGRAMME INFORMATION

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)

Product Category Rules (PCR):

Products and CPC 54 Construction Services 2019:14 Version 1.11, 2021-02-05, Construction EN 15804:2012 + A2:2019 Sustainability of Construction Works

PCR review was conducted by:

The Technical Committee of the International EPD® System. Review chair: Claudia A. Peña, University of Concepción, Chile

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Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification EPD verification ☑

Third party verifier: Prof. Ing. Vladimír Kočí, Ph.D., MBA LCA Studio Šárecká 5,16000 Prague 6- Czech Republic

Approved by: The International EPD® System Technical Committee, supported by the Secretariat

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes No ☑

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

HOW TO READ THIS EPD?

An Environmental Product Declaration (EPD) is an ISO Type III Environmental Declaration based on ISO 14025 standard. An EPD transparently reports the environmental performance of products or services from a lifecycle perspective. The preparation of an EPD includes different stages, from acquiring raw materials to the end of life of the final product/service. EPDs are based on international standards and consider the entire value chain. Additionally, EPD is a third-party verified document. This EPD includes several sections described below.

1. General and Program Information

The first part of an EPD has information about the name of the manufacturer and product/service and other general information such as the validity and expiration dates of the document, the name of the program operator, geographical scope, etc. The second page states the standards followed and gives information about the program operator, third-party verifier, etc. The followed Product Category Rule (PCR) is indicated on the second page.

2. Company and Product/Service Information

Information about the company and the investigated product is given in this section. It summarizes the characteristics of the product provided by the manufacturer. It also includes information about the product such as product composition and packaging.

3. LCA Information

LCA information is one of the most important parts of the EPD as it describes the functional/declared unit, time representativeness of the study, database(s) and LCA software, along with system boundaries. The table presented in this part has columns for each stage in the life cycle. The considered stages are marked 'X' whereas the ones that are not considered are labeled as 'ND' (Not Relevant). Not all EPDs consider the full life cycle assessment for a product's entire life stages. The 'System Boundary' page is also the place where one can find detailed information about the stages and the assumptions made.

4. LCA Results

The results of the Life Cycle Assessment analysis are presented in table format. The first column in each table indicates the name of the impact category and their measurement units are presented in the second column. These tables show an amount at each life cycle stage to see the impact of different indicators on different stages. Each impact can be understood as what is released through the production of the declared unit of the material—in this case, 10 metre run of Powertrack. The benefits of reuse/recycling of the declared product is reflected in this section.

The first impact in the table is global warming potential (GWP), which shows how much CO_2 is released at each stage. Other impacts include eutrophication potential, acidification potential, ozone layer depletion, land use related impacts, etc. The second table provides results for resource use and the third table is about the waste produced during the production. The fourth and final table shows the results for the GWP-GHG indicator, which is almost equivalent to the GWP-Total indicator mentioned previously. The only difference is that this indicator excludes the biogenic carbon content by following a certain methodology.

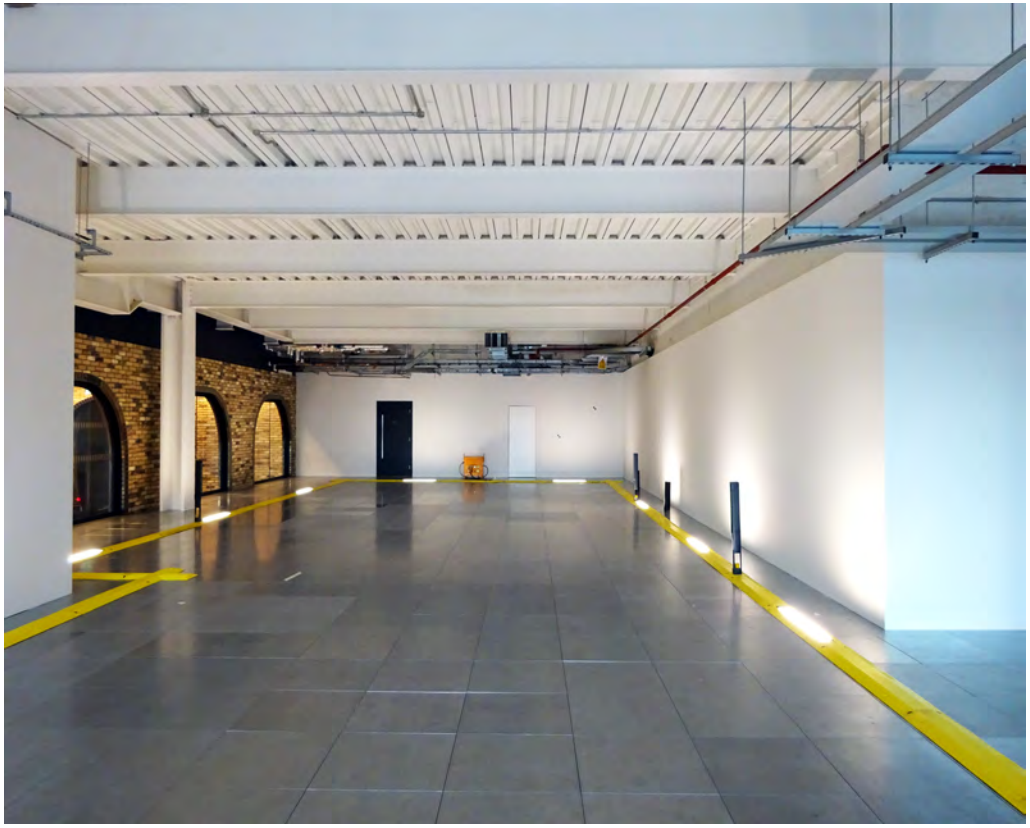
ABOUT THE COMPANY AND POWERTRACK

OVERVIEW

Novus48, the manufacturer of Powertrack modules is a UK based company founded in 2020. The company produces modular lighting systems that can be easily installed and reinstalled for almost any working environment. Powertrack is an innovative, temporary power and lighting system that helps enable construction site teams to deliver best in class projects. It is designed primarily for construction sites but can be used in many other similar environments. It consists of a series of modules each with different functions, including standard and emergency lighting, power outlets and uses a 'plug-and-play' concept.

RE-USABILITY

One of the unique aspects of Powertrack compared to other site temporary lighting and power systems is it's reusability with modules having a life expectancy of five to seven years, unlike conventional site temporary systems which are generally installed and then thrown away at the end of a project, Powertrack is designed to be taken from project to project and reused again making it far more sustainable than other traditional site temporary lighting and power systems.



DURABILITY AND LONGEVITY

The Life Stage benefits of Powertrack are its reusability and longevity. Each module is supplied with a three-year warranty (two years for lighting modules). However, Powertrack is a robust and durable product that has an average life expectancy of 5 years for each module.

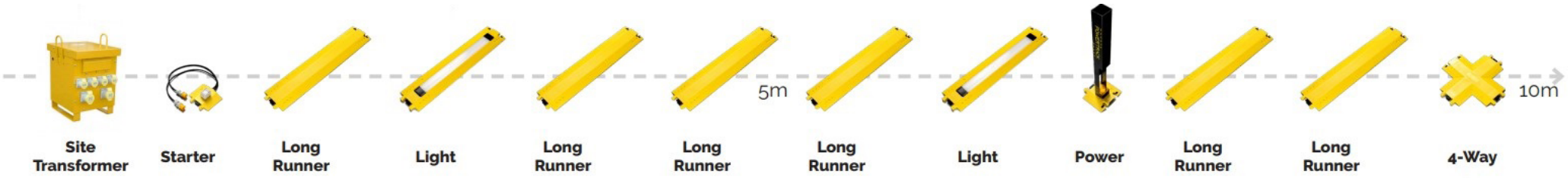
ZERO WASTE, REDUCTION IN CARBON EMISSIONS

There are also other additional environmental benefits that are achieved when using Powertrack. Powertrack requires no single use plastic tie wraps. Powertrack is designed to be installed and modified by any competent person which lowers the CO_2 emissions for travel of personnel required on site and due to Powertrack's flexible and reusable design, there is no waste from this system.

When a Powertrack lighting modules internal LED tray comes to its end-of-life, Novus48 have the capability to change the lighting trays so that the lighting modules can go back into circulation and reused for another two years. On top of this, a further 2% of the modules can be recycled at 90% efficiency (Based on customers using the Powertrack Reuse service).

WHAT IS INCLUDED IN THE STANDARD 10 METRE RUN OF POWERTRACK?

A typical 10 metre run of Powertrack consists of 1 Starter Module, 5 Long Runners, 1 Medium Runner or 1 Short Runner, 1 Standard and Emergency Lighting Module, 1 Power and 1 4-Way.

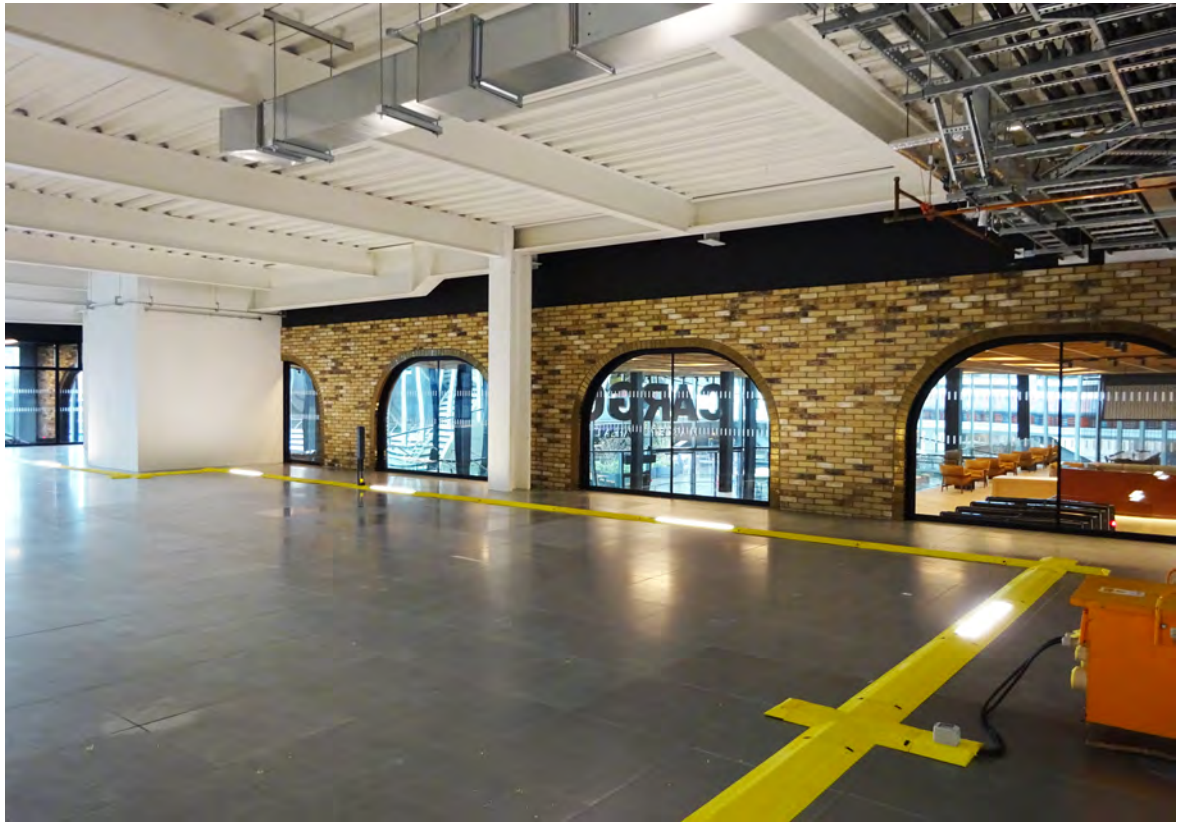


Composition breakdown by weight:	
• Polyurethane	77.78 %
• Electrical cables and plugs	17.34 %
• Connectors	1.9 %
• Battery and driver	0.66 %
• Others	2.32 %

For the packaging, the use of cardboard is included in the analysis.

REACH Regulation

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).



LCA INFORMATION

Functional Unit / Declared Unit	10 metre standard run of Powertrack
Time Representativeness	2021
Database(s) and LCA Software Used	Ecoinvent 3.8 and SimaPro 9.3
System Boundaries	Cradle to gate with options, modules C1–C4 and module D and with optional modules (A5 + B modules)

	Product Stage			**Construction Process Stage**		**Use Stage**							**End of Life Stage**				**Benefits and Loads**
	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction / Demolition	Transport	Waste Processing	Disposal	Future reuse. recycling or energy recovery potentials
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules Declared	X	X	X	ND	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	GB	-	GB	GB	GB	GB	GB	GB	GB	GB	GLO	GLO	GLO	GLO	GLO
Specific Data Used	>90%	>90%	>90%	-	>90%	-	-	-	-	-	-	-	-	-	-	-	-
Variation-products	NR					-	-	-	-	-	-	-	-	-	-	-	-
Variation-Sites	NR					-	-	-	-	-	-	-	-	-	-	-	-

The inventory for the LCA study is based on the 2021 production figures for 10m Powertrack set up produced by Novus48.

The system boundaries in tabular form for all modules are shown in the table below.
All manufacturing related data are specific data acquired from the company. Since the installation and reinstallation of the modules are done by hand tools, the effect of A5 and C1 modules is zero. For the B1 module, the hourly energy consumption of two LED lights is considered. The product does not require any maintenance (B2), repair (B3), replacement (B4), refurbishment (B5), operational energy use (B6), or operational water use (B7) during its Service Life.

For the end-of-life stages, the reuse of the lighting and emergency lighting trays is considered. It is assumed that the rest of the modules in the 10 metre standard run of Powertrack are dismantled and transported to the site where futher 2 % of the material used in the modules will be recycled and the rest is landfilled. It is also assumed that no specific process is needed during the waste processing (Based on customers using the Powertrack Reuse service).

System Boundary

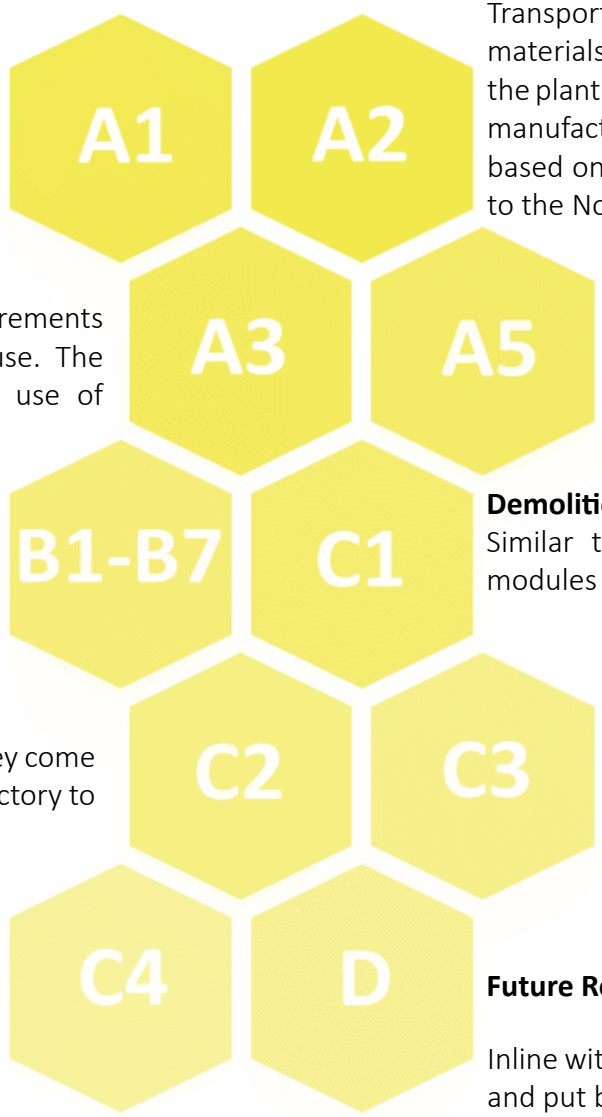
Raw Material Supply
The Production of Powertrack begins with the acquisition of the Raw Materials required for each Powertrack module. 90% of the non-lighting modules comprise of polyethene which is sourced from Germany. The other key components for the modules include internal electrical cables, electrical connectors along with a lighting tray and diffuser for the lighting modules.

Manufacturing
Modules are manufactured to customers bespoke requirements to ensure customers do not receive modules they can't use. The manufacturing process of Powertrack mainly requires the use of electrical energy when the modules are casted and formed.

B Modules
Due to the usage of LED lightings in the module, the use phase (B1) of the product is included, whereas the rest of the B modules (B2-B7) is not applicable for the related product.

Transport
This stage is related to the transportation of modules when they come to the end of their life cycle. The distance from the Novus48 factory to the waste material depot is 10 miles (16km).

Disposal
This stage considers the impacts of the disposal of the related products. When a lighting and emergency lighting modules internal LED tray comes to their end of life, Novus48 have the capability to change the lighting trays so that these can go back into circulation and be used for a further two years (Based on customers using the Powertrack Reuse service).



Transport of Raw Materials
Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport distances of the raw materials to different manufacturing sites provided by the company. Transport is based on the delivery of the raw materials and components to the Novus48 factory.

Construction Installation
Due to Powertrack being a modular plug and play system modules can be installed and modified by any competent person without the need for specialist tools.

Demolition / Deconstruction
Similar to module C5 the removal and reinstallation of modules are carried out without the need of specialist tools.

Waste Processing
Waste processing refers to the processing steps for the discarded modules for its final end-of-life phase. It is assumed that no specific process is needed for this module.

Future Reuse, Recycling or Energy Recovery Potential

Inline with 20% of the Powertrack modules can be reserviced and put back into circulation. Further 2% of the the modules can be recycled at 90% efficiency (Based on customers using the Powertrack Reuse service).

LCA RESULTS													
Impact Category	Unit	A1	A2	A3	A1-A3	A5	B1	B2-B7	C1	C2	C3	C4	D
GWP- Fossil	kg CO_2 eq	269	4.40	1.99	275	0	0.006	0	0	0.153	0	3.95	-53.8
GWP- Biogenic	kg CO_2 eq	2.92	0.003	-0.388	2.54	0	10.3E-6	0	0	132.5E-6	0	7.37	-0.585
GWP- Luluc	kg CO_2 eq	0.269	0.002	0.034	0.305	0	8.5E-6	0	0	61.4E-6	0	283E-6	-0.054
GWP- Total	kg CO_2 eq	272	4.40	1.64	278	0	0.006	0	0	0.154	0	11.82	-54.5
ODP	kg CFC-11 eq	35.0E-6	1.01E-6	183E-9	36.2E-6	0	422E-12	0	0	35.6E-9	0	122E-9	-7.00E-6
AP	mol H+ eq	5.49	0.023	0.014	5.52	0	19.5E-6	0	0	435.9E-6	0	0.004	-1.10
*EP- Freshwater	kg P eq	0.407	276E-6	0.001	0.408	0	995E-9	0	0	10.1E-6	0	166E-6	-0.081
EP- Freshwater	kg (PO_4) eq	1.25	0.001	0.002	1.253	0	3.05E-6	0	0	30.9E-6	0	508E-6	-250E-3
EP- Marine	kg N eq	0.554	0.005	0.005	0.564	0	4.6E-6	0	0	88.5E-6	0	0.620	-0.111
EP- Terrestrial	mol N eq	5.15	0.057	0.046	5.25	0	50.9E-6	0	0	0.001	0	0.015	-1.03
POCP	kg NMVOC	1.70	0.018	0.009	1.73	0	12.4E-6	0	0	371.0E-6	0	0.007	-0.340
ADPE	kg Sb eq	0.105	14.8E-6	11.1E-6	0.105	0	17.6E-9	0	0	544E-9	0	2.12E-6	-0.02
ADPF	MJ	5235	65.8	33.6	5335	0	0.166	0	0	2.33	0	10.2	-1047
WDP	m^3 depriv.	248	0.194	1.92	250	0	225E-6	0	0	0.01	0	0.142	-49.6
PM	disease inc.	27.3E-6	336E-9	178E-9	27.8E-6	0	95.1E-12	0	0	12.4E-9	0	67.9E-9	-5.5E-6
IR	kBq U-235 eq	31.0	0.336	0.699	32.07	0	0.006	0	0	0.012	0	0.099	-6.21
ETP- FW	CTUe	49083	50.8	66.3	49201	0	0.077	0	0	1.83	0	108.00	-9817
HTTP- C	CTUh	3.17E-6	1.76E-9	1.81E-9	3.17E-6	0	1.6E-12	0	0	58.7E-12	0	515E-12	-633E-9
HTTP- NC	CTUh	80.2E-6	50.3E-9	40.4E-9	80.2E-6	0	44.5E-12	0	0	1.8E-9	0	19.5E-9	-16.0E-6
SQP	Pt	1935	43.3	69.4	2048	0	0.062	0	0	1.62	0	22.5	-387

Acronyms	GWP-total: Climate change, GWP-fossil: Climate change- fossil, GWP-biogenic: Climate change- biogenic, GWP-luluc: Climate change- land use and transformation, ODP: Ozone layer depletion, AP: Acidification terrestrial and freshwater, EP-freshwater: Eutrophication freshwater, EP-marine: Eutrophication marine, EP-terrestrial: Eutrophication terrestrial, POCP: Photochemical oxidation, ADPE: Abiotic depletion- elements, ADPF: Abiotic depletion- fossil resources, WDP: Water scarcity, PM: Respiratory inorganics- particulate matter, IR: Ionising radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A5: Installation, B1: Use, C1: Deconstruction / Demolition, C2: Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.
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.
*Disclaimer 3	EP-freshwater: This indicator is calculated both in kg PO_4 eq and kg P eq as required in the charactarization model. (EUTREND model, Struijs et al, 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml)

Resource Use

Impact Category	Unit	A1	A2	A3	A1-A3	A5	B1	B2-B7	C1	C2	C3	C4	D
PERE	MJ	453	0.906	16.6	471	0	0.030	0	0	0.033	0	1.07	-90.6
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	453	0.906	16.6	471	0	0.030	0	0	0.033	0	1.07	-90.6
PENRE	MJ	5235	65.8	33.7	5335	0	0.166	0	0	2.33	0	10.2	-1047
PENRM	MJ	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	5235	65.8	33.7	5335	0	0.166	0	0	2.33	0	10.2	-1047
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	2.94	0.011	0.089	3.04	0	39.8E-6	0	0	389E-6	0	0.011	-0.589

Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water.

Waste&Output Flows

Impact Category	Unit	A1	A2	A3	A1-A3	A5	B1	B2-B7	C1	C2	C3	C4	D
HWD	kg	0	0	0	0	0	0	0	0	0	0	0	0
NHWD	kg	0	0	0.011	0.011	0	0	0	0	0	0	0	0
RWD	kg	0	0	0	0	0	0	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0
EE (Electrical)	MJ	0	0	0	0	0	0	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0	0	0	0	0	0	0

Acronyms	HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy, Thermal.

Climate Impact

Indicator	Unit	A1	A2	A3	A1-A3	A5	B1	B2-B7	C1	C2	C3	C4	D
*GHG-GWP	kg CO_2 eq	260	4.36	1.98	266	0	0.006	0	0	0.152	0	3.38	-51.9

GWP-GHG = Global Warming Potential total excl. biogenic carbon following IPCC AR5 methodology
* The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013

References

/GPI/ General Programme Instructions of the International EPD® System. Version 4.0.

/EN ISO 9001/ Quality Management Systems- Requirements

/EN ISO 14001/ Environmental Management Systems- Requirements

/EN ISO 50001/ Energy Management Systems- Requirements

/ISO 14020:2000/ Environmental Labels and Declarations — General principles

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

/ISO 14025/ DIN EN ISO 14025:2009-11: Environmental labels and declarations- Type III environmental declarations — Principles and procedures

/ISO 14040/44/ DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and CPC 54 Construction Services/ Prepared by IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, 2019:14 Version 1.11 DATE 2019-12-20

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/Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

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