Product Environmental Profile

Busway - 3000A – NW 1/4 UPS Load Bank (FBPN 43-100676)

Representative product	3000A – NW 1/4 UPS Load Bank (FBPN 43-100676) Product Category: Other equipments - Passive product - continuous operation
Description of the product	Eaton's Pow-R-Way III is a 600 V, totally enclosed, non-ventilated, sandwich bus design available with aluminum bus bars from 225–4000 A. Pow-R-Way III is available in outdoor feeder, indoor feeder, indoor plug-in and indoor sprinkler-proof configurations. All four types can be used interchangeably without adapters or special splice plates provided they are of the same current and system rating.
Functional unit	To distribute power to electric installations in data centers through busbars enclosed in a metal housing, with a rated current of 3000A over a length of 173.56 ft, considering a 30% load rate and 100% utilization rate, over a reference service life of 20 years.
Company information	Eaton - Greenwood Laurens PDCA SC., Greenwood, South Carolina, USA Email: productstewardship-es@eaton.com

Constituent Materials			
Reference product mass	3.32E+03kg (With packaging)		
Category PEP Material	Materials	Mass (kg)	Percentage (%)
Metals	Aluminium	2.02E+03	60.7%
Metals	Steel	8.08E+02	24.3%
Others	Wood	2.95E+02	8.9%
Plastics	Styrene Butadiene Rubber	1.78E+02	5.3%
Plastics	Epoxy Resin	2.14E+01	0.6%
Metals	Copper	2.67E+00	0.1%
Plastics	Sheet moulding compound	2.12E+00	0.1%
Others	Paper	4.63E-02	<0.1%
Plastics	Polyvinylchloride	1.53E-02	<0.1%
Others	Glue	5.70E-03	<0.1%
Metals	Silicon	3.56E-03	<0.1%
Total		**3.32E+03**	**100%**

Additional Environmental Information	
Manufacturing	The reference product is assembled at an Eaton plant holding management system certifications according to ISO 14001 standards.
Distribution	Eaton is committed to minimizing weight and volume of product and packaging with focus to optimize transport efficiency.
Installation	During installation of the product only standard tools are needed. During installation the energy required screwing/hardware fittings is excluded as per PCR requirement. No waste other than the obsolete product packaging is generated during this step.
Use	Product consumes energy during useful life which is 20 years (as per real scenario). During the reference service life of product, product doesn't require any scheduled replacement.
End of life	The product is disposed considering 100% incineration without energy recovery.

Environmental Impacts	
The calculation of the environmental impacts is the result of the Product's Life Cycle Analysis in accordance with ISO 14040/44, covering the entire lifecycle, i.e. "Cradle-to-Grave" including the following life cycle phases: production, distribution, installation, use and end of life. System modelling was carried out using the commercial LCA software EIME v6.2.4 with database version CODDE-2024-04 updated on 2024-06-04. Indicators Set used: PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0	
Manufacturing Phase	The product is assembled as well as packed at Eaton - Eaton - Greenwood Laurens PDCA SC., Greenwood, South Carolina, USA Energy model used: United States
Distribution Phase	Distribution of the product in its packaging from the Eaton's last logistics platform to the installation place in United States is considered as average land transport of 3500 km by lorry.
Installation Phase	Product installed in United States. Only treatment of packaging waste is considered in this phase.
Use Phase	Reference lifetime: 20 Years (as per PSR5) Energy model used: United States Usage profile: The reference product has an average power loss of 941.96 W with 30% of the loading rate. For 100% of the use time rate, total losses are 165031.74 kWh over the 20 years. No maintenance required for the product.
End of life Phase	The product is disposed considering 100% incineration without energy recovery.

Environmental Impact Indicators: Mandatory

Mandatory Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	Use (B6 Only*)	C1-C4 - End of life
Climate change – total (GWP)	kg CO_2 eq.	1.32E+05	4.82E+04	7.47E+02	5.49E+02	7.90E+04	3.42E+03
Climate change - fossil fuels (GWP-f)	kg CO_2 eq.	1.27E+05	4.57E+04	7.47E+02	1.21E+02	7.89E+04	1.39E+03
Climate change – biogenic (GWP-b)	kg CO_2 eq.	5.06E+03	2.49E+03	3.06E-03	4.28E+02	1.13E+02	2.03E+03
Climate change - land use and land use transformation (GWP-lu)	kg CO_2 eq.	1.81E-03	5.52E-04	1.13E-03	1.11E-05	0.00E+00	1.14E-04
Ozone depletion (ODP)	kg eq. CFC-11	7.19E-03	6.79E-03	9.06E-06	3.77E-06	3.14E-04	7.27E-05
Acidification (AP)	mole of H+ eq.	7.19E+02	3.50E+02	1.18E+00	6.56E-01	3.59E+02	8.52E+00
Freshwater eutrophication (EP-fw)	kg P eq.	3.68E-01	2.22E-01	2.79E-03	1.16E-04	1.42E-01	1.22E-03
Marine aquatic eutrophication (EP-m)	kg of N eq.	8.33E+01	3.53E+01	2.14E-01	1.53E-01	4.56E+01	1.98E+00
Terrestrial eutrophication (EP-t)	mole of N eq.	9.63E+02	3.89E+02	2.35E+00	2.02E+00	5.43E+02	2.60E+01
Photochemical ozone formation (POCP)	kg of NMVOC eq.	2.84E+02	1.27E+02	7.59E-01	4.36E-01	1.50E+02	5.73E+00
Depletion of abiotic resources – elements (ADPe)	kg eq. Sb	2.11E-02	1.01E-02	2.66E-04	1.29E-05	1.06E-02	1.41E-04
Depletion of abiotic resources - fossil fuels (ADP-f)	MJ	2.62E+06	8.22E+05	1.33E+04	2.26E+03	1.76E+06	2.62E+04

Mandatory Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	Use (B6 Only*)	C1-C4 - End of life
Water scarcity (WDP)	m^3 of eq. deprivation worldwide	1.47E+04	1.09E+04	2.69E+01	4.93E+00	3.70E+03	7.33E+01

***Note**: B6 (energy requirements during the use stage) is considered. Other sub modules in the use stage (B1-B5, B7) are equal to zero. So, it is not listed in the result tables.

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	Use (B6 Only*)	C1-C4 - End of life
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	2.43E+05	5.10E+04	4.18E+01	1.67E+02	1.91E+05	1.71E+03
Use of renewable primary energy resources used as raw materials	MJ	5.38E+03	5.38E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.49E+05	5.63E+04	4.18E+01	1.67E+02	1.91E+05	1.71E+03
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	2.61E+06	8.09E+05	1.33E+04	2.26E+03	1.76E+06	2.62E+04
Use of non-renewable primary energy resources used as raw materials	MJ	1.37E+04	1.37E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.62E+06	8.22E+05	1.33E+04	2.26E+03	1.76E+06	2.62E+04
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m3	3.43E+02	2.54E+02	6.26E-01	1.84E-01	8.63E+01	2.42E+00
Hazardous waste disposed of	kg	1.11E+04	5.08E+03	3.12E+00	1.10E+02	1.71E+03	4.23E+03
Non-hazardous waste disposed of	kg	1.01E+05	8.89E+04	6.93E+01	1.72E+01	1.18E+04	1.93E+02
Radioactive waste disposed of	kg	7.12E+01	6.82E+01	5.49E-02	7.40E-03	2.81E+00	9.48E-02
Components for re-use	kg	0.00E+00	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	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	Use (B6 Only*)	C1-C4 - End of life
Exported energy	MJ by energy vector	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	kg of C.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg of C.	1.98E-02	1.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*__Note__: B6 (energy requirements during the use stage) is considered. Other sub modules in the use stage (B1-B5, B7) are equal to zero. So, it is not listed in the result tables.

Environmental Impact Indicators: Optional

Optional Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	Use (B6 Only*)	C1-C4 - End of life
Emission of fine particles	incidence of diseases	5.42E-03	2.72E-03	1.01E-05	4.58E-06	2.62E-03	5.76E-05
Ionizing radiation, human health	kBq of U235 eq.	9.90E+04	2.10E+04	2.64E+01	5.01E+01	7.74E+04	5.62E+02
Ecotoxicity, fresh water	CTUe	5.49E+05	3.81E+05	2.18E+04	2.72E+03	1.08E+05	3.55E+04
Human toxicity, cancer effects	CTUh	3.72E-05	2.74E-05	1.46E-07	2.09E-08	9.30E-06	3.72E-07
Human toxicity, non-cancer effects	CTUh	5.84E-04	3.25E-04	2.79E-06	7.93E-07	2.40E-04	1.58E-05
Impacts related to land use/soil quality	-	1.50E+03	1.69E+01	3.20E+00	2.35E+00	1.46E+03	2.48E+01
Total use of primary energy during the life cycle	MJ	2.87E+06	8.79E+05	1.33E+04	2.43E+03	1.95E+06	2.79E+04

*__Note__: B6 (energy requirements during the use stage) is considered. Other sub modules in the use stage (B1-B5, B7) are equal to zero. So, it is not listed in the result tables.

Disclaimer

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The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)			
PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019 *The components of the present PEP may not be compared with components from any other program.*			
Document in compliance with ISO 14025: 2010 « Environmental labels and declarations. Type III environmental declarations »			