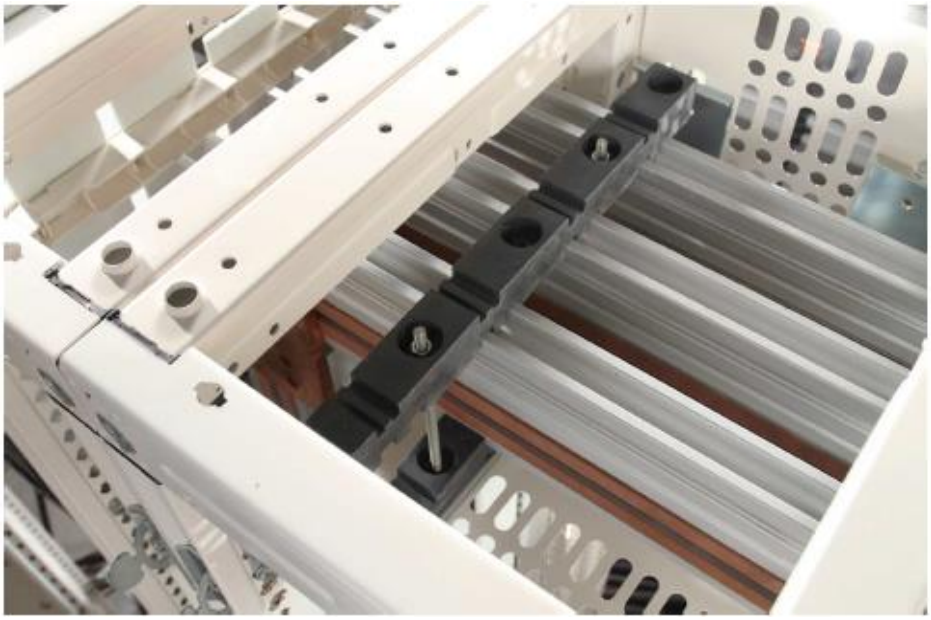
Product Environmental Profile

Linergy Evolution Busbars

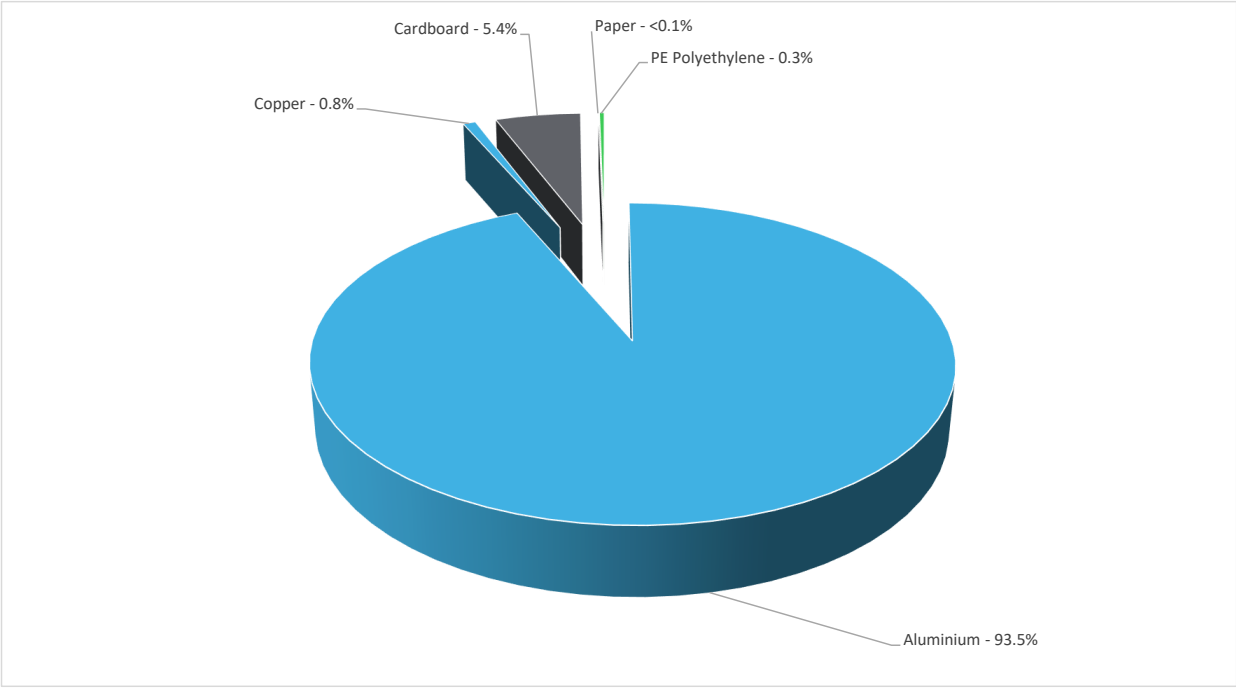


General information

Reference product	Linergy Evolution Busbars - LVS04564
Description of the product	The main purpose of Linergy Evolution Busbars is to conduct current.The analysis considers the use of 3 Linergy Evolution 1600A (2 meters long) in PrismaSet. This range consists of: horizontal busbars rating from 630 to 4000 A
Functional unit	Linergy Evolution LGYE profile aluminium Busbars is to carrying a current of 1600A during 20 years. Rated insulation voltage [Ui] - 1000 V Rated impulse withstand voltage [Uimp] - 12 kV Rated operational current [Ie] - 1600 A Rated short-time withstand current [Icw] - 85 kA (1 s) for 3 supports (horizontal position) 50 kA (1 s) for 2 supports (horizontal position) Product Standards - IEC 61439-1 & IEC 61439-2 Product certifications - ASTA

Constituent materials

Reference product mass	16515 g	including the product, its packaging and additional elements and accessories



Plastics	0.3%
Metals	94.3%
Others	5.4%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
https://www.se.com/ww/en/work/support/green-premium/

Additional environmental information

End Of Life	Recyclability potential:	**98%**	Recyclability rate has been calculated based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the "ECO'DEEE recyclability and recoverability calculation method" was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	20 years			
Product category	Other equipments - Passive product - continuous operation			
Installation elements	No special components needed			
Use scenario	The dissipated power depends on the conditions under which the product is implemented and used. As per the PSR, load rate / rated current (In): 30 % of In; percentage of utilization time: 100% At nominal rating, 3 x Linergy Evolution 1600A busbar have a dissipation of 56.5W. Including the 30% loading rate, 3 x Linergy Evolution 1600A have a dissipation of 5.085 W			
Technological representativeness	The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis(LCA-EIME in this case) are Similar and representative of the actual type of technologies used to make the product in production.			
Geographical representativeness	Europe			
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Production mix; Low voltage; FR	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

Mandatory Indicators			**Linergy Evolution Busbars - LVS04564**					
Impact indicators	**Unit**	**Total**	**Manufacturing** [A1 - A3]	**Distribution** [A4]	**Installation** [A5]	**Use** [B1 - B7]	**End of Life** [C1 - C4]	**Loads and Benefits** [D]
Contribution to climate change	kg CO2 eq	1.33E+03	2.24E+02	2.16E+00	1.58E+00	1.10E+03	7.53E+00	-2.10E+02
Contribution to climate change-fossil	kg CO2 eq	1.32E+03	2.17E+02	2.16E+00	1.51E+00	1.09E+03	7.50E+00	-2.04E+02
Contribution to climate change-biogenic	kg CO2 eq	8.56E+00	7.01E+00	0*	7.02E-02	1.46E+00	2.44E-02	-6.17E+00
Contribution to climate change-land use and land use change	kg CO2 eq	6.62E-07	0*	0*	2.55E-07	0*	4.07E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.03E-05	3.49E-05	0*	1.06E-07	4.68E-06	5.71E-07	-2.80E-05
Contribution to acidification	mol H+ eq	7.98E+00	1.67E+00	1.39E-02	6.30E-03	6.25E+00	2.95E-02	-1.37E+00
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	4.86E-03	9.77E-04	8.09E-07	1.26E-05	3.00E-03	8.68E-04	-8.05E-04
Contribution to eutrophication marine	kg N eq	9.03E-01	1.79E-01	6.52E-03	1.67E-03	7.10E-01	5.87E-03	-1.15E-01
Contribution to eutrophication, terrestrial	mol N eq	1.27E+01	1.92E+00	7.16E-02	1.27E-02	1.07E+01	6.50E-02	-1.25E+00
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.92E+00	5.92E-01	1.81E-02	3.39E-03	2.28E+00	2.20E-02	-4.16E-01
Contribution to resource use, minerals and metals	kg Sb eq	3.00E-04	1.96E-04	8.49E-08	7.48E-08	7.94E-05	2.45E-05	-2.16E-04
Contribution to resource use, fossils	MJ	3.15E+04	3.38E+03	3.01E+01	1.64E+01	2.79E+04	1.33E+02	-2.75E+03
Contribution to water use	m3 eq	1.06E+02	6.55E+01	0*	7.39E-01	3.88E+01	9.13E-01	-4.06E+01

Additional indicators for the French regulation are available as well

Inventory flows Indicators		Linergy Evolution Busbars - LVS04564						
Inventory flows	Unit	Total	Manufact. [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	5.53E+03	1.72E+02	0*	1.23E+00	5.36E+03	6.11E-01	-1.21E+02
Contribution to use of renewable primary energy resources used as raw material	MJ	1.72E+01	1.72E+01	0*	0*	0*	0*	-1.56E+01
Contribution to total use of renewable primary energy resources	MJ	5.55E+03	1.90E+02	0*	1.23E+00	5.36E+03	6.11E-01	-1.37E+02
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.15E+04	3.38E+03	3.01E+01	1.64E+01	2.79E+04	1.33E+02	-2.75E+03
Contribution to use of non renewable primary energy resources used as raw material	MJ	2.40E+00	2.40E+00	0*	0*	0*	0*	-2.17E+00
Contribution to total use of non-renewable primary energy resources	MJ	3.15E+04	3.38E+03	3.01E+01	1.64E+01	2.79E+04	1.33E+02	-2.75E+03
Contribution to use of secondary material	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of freshwater	m^3	2.47E+00	1.53E+00	0*	1.72E-02	9.02E-01	2.13E-02	-9.46E-01
Contribution to hazardous waste disposed	kg	7.05E+01	3.45E+01	0*	1.86E-02	2.05E+01	1.56E+01	-3.22E+01
Contribution to non hazardous waste disposed	kg	6.48E+02	4.84E+02	7.57E-02	5.12E+00	1.58E+02	1.56E+00	-3.68E+02
Contribution to radioactive waste disposed	kg	4.15E-01	3.81E-01	5.39E-05	6.90E-04	3.30E-02	2.97E-04	-2.76E-01
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.56E+01	0*	0*	9.10E-01	0*	1.47E+01	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the product	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v5.9.4, database version 2022-01 in compliance with ISO14044.

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

The use phase has the greatest impacts contribution on the majority of environmental indicators, except Climate change-Biogenic (GWPb) & Land use and land use change (GWPlu); Ozone depletion (ODP); Resource use, minerals and metals (ADPe); Water use (WU).
this contribution is mainly due to the energy consumption throughout the product reference service lifetime.

Environmental comparison between Linergy Evolution 1600A and regular flat copper busbar 1400A:

Inside a low voltage panel based on a 1600A power protection, Linergy Evolution 1600A can be used as replacement of regular flat copper busbar (Ref-LVS04546) 1400A* (60x10 mm) provided with previous offer.
* 1400A assigned current in Prisma P IP30
For modelization purpose in our comparison, we consider working conditions at In =1600A for the regular flat copper busbar.

USE PHASE
The dissipated power depends on the conditions under which the product is implemented and used.
At nominal rating, 3 x Linergy Evolution 1400A busbar have a dissipation of 48.5W
Including the 30% loading rate, 3 x Linergy Evolution 1400A have a dissipation of 4.365 W

Presentation of the environmental impacts for regular flat copper busbar 1400A:

Mandatory Indicators		Linergy Evolution regular flat copper busbar 1400A - LVS04546						
Impact indicators	Unit	Total	Manufacturing [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to climate change	kg CO2 eq	1.11E+03	1.02E+02	4.35E+00	2.19E+00	9.40E+02	5.77E+01	-7.63E+01
Contribution to climate change-fossil	kg CO2 eq	1.09E+03	9.48E+01	4.35E+00	2.09E+00	9.39E+02	5.12E+01	-7.01E+01
Contribution to climate change-biogenic	kg CO2 eq	1.49E+01	7.01E+00	0*	9.73E-02	1.25E+00	6.52E+00	-6.22E+00
Contribution to climate change-land use and land use change	kg CO2 eq	1.09E-04	0*	0*	0*	0*	1.09E-04	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	3.25E-05	2.47E-05	6.65E-09	1.45E-07	4.02E-06	3.60E-06	-2.12E-05
Contribution to acidification	mol H+ eq	1.23E+01	6.08E+00	2.80E-02	8.69E-03	5.37E+00	8.56E-01	-5.30E+00
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	2.34E-01	1.42E-04	0*	0*	2.57E-03	2.32E-01	-1.22E-04
Contribution to eutrophication marine	kg N eq	8.87E-01	1.34E-01	1.31E-02	2.30E-03	6.10E-01	1.28E-01	-8.19E-02
Contribution to eutrophication, terrestrial	mol N eq	1.25E+01	1.54E+00	1.44E-01	1.74E-02	9.16E+00	1.61E+00	-9.52E-01
Contribution to photochemical ozone formation - human health	kg COVNM eq	3.17E+00	7.97E-01	3.64E-02	4.64E-03	1.96E+00	3.74E-01	-6.01E-01
Contribution to resource use, minerals and metals	kg Sb eq	5.38E-02	4.73E-02	0*	0*	6.81E-05	6.52E-03	-4.20E-02
Contribution to resource use, fossils	MJ	2.63E+04	1.54E+03	6.06E+01	2.28E+01	2.40E+04	7.19E+02	-1.18E+03
Contribution to water use	m3 eq	4.86E+02	2.83E+02	0*	9.35E-01	3.33E+01	1.69E+02	-2.51E+02

Comparison of environmental impacts:
For the 3 x Linergy Evolution 1600A dissipation is 5.085 W.
For the 3 x regular flat copper busbar 1400A, dissipation is 4.365 W.

Climate Change (GW): Linergy Evolution 1600A compare to regular flat copper busbar 1400A increases of 17% the impact on global warming

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

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Date of issue	12/2023	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years

Independent verification of the declaration and data, in compliance with ISO 14025 : 2010
Internal External X

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

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