Nidec Conversion

DC WALLBOX

Environmental Communication

Environmental Footprint Executive Summary

Nidec Conversion has carried out an environmental assessment of the DC Wallbox to identify which actions from their **Green Product Design Roadmap** could help achieve the objectives of their **ESG Improvement Plan for 2028.** The assessment was carried out with the help of the environmental consultancy company EVEA.

Product information

Product:

DC Wallbox electric vehicle charging station.

Reference service life of the station:

10 years.

Terminal reference power:

60 kW.

Charging points:

2 - Power at each charging point: 30 kW.

Charge time:

54 min.

Amount of electricity delivered per charge:

27.1 kWh.

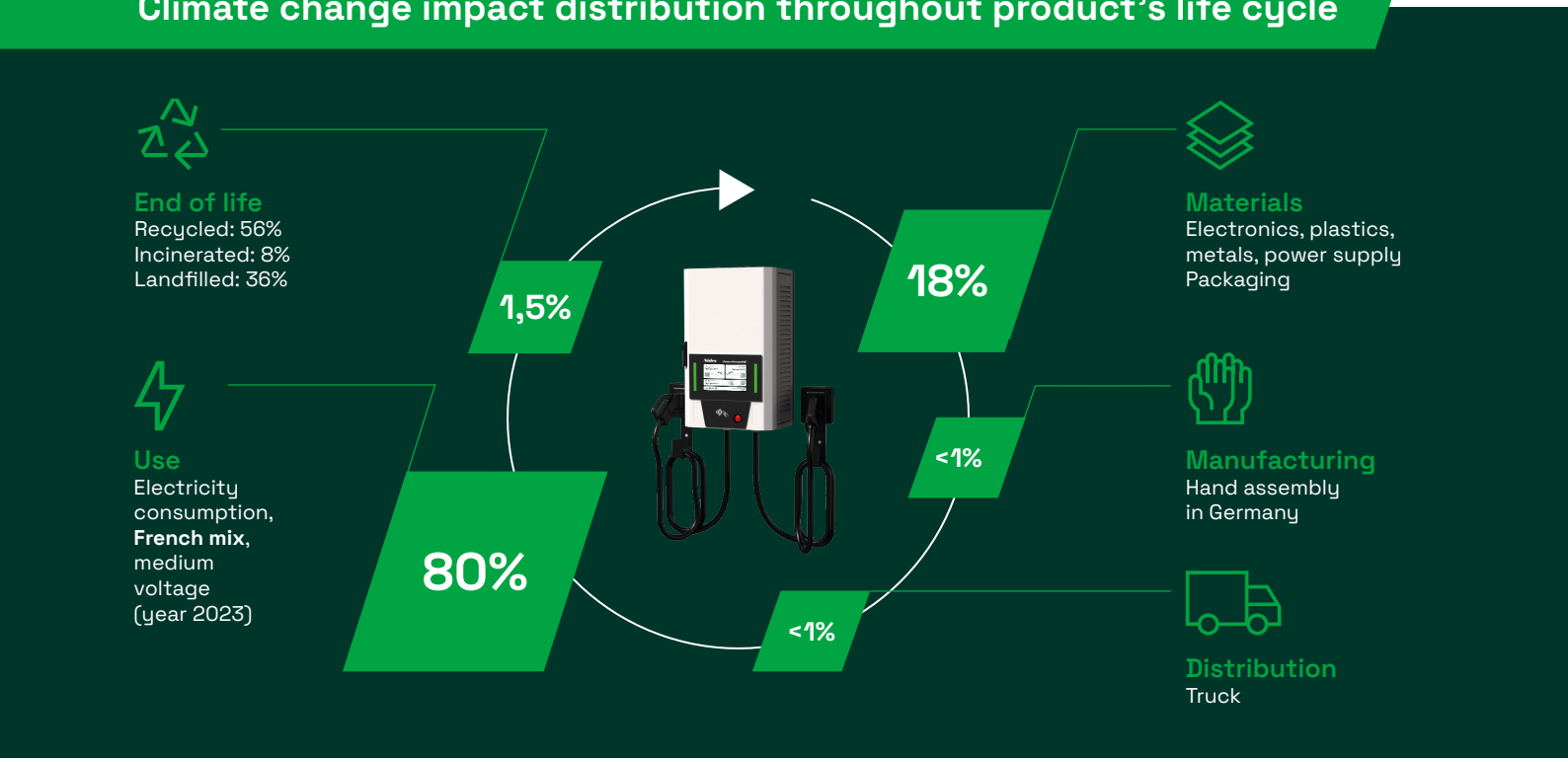
Environmental assessment methodology

PCR (Product Category Rules) and PSR (Product Specific Rules) are essential components of the PEP ecopassport® program. They define the rules to be applied for carrying out Life Cycle Assessments (LCA). This Product Environmental Profile (PEP) was carried out in compliance with the PCR-ed4-FR-2021 09 06 and PSR-0018-ed1.2 EN-2024 09 26, giving specific rules for electric vehicle charging infrastructures.

Reference use scenario for the assessment

The assessment considered the environmental impacts related to the supply of 1 kWh to one vehicle in accordance with the reference use scenario at the charging point.
The results below are reported to the reference lifetime (RLT) of the DC Wallbox, estimating an average quantity of energy delivered for a charge point at 14 126 kWh of the RLT.

Climate change impact distribution throughout product's life cycle



Product environmental impact results

Climate change
12.2 t CO_2 eq

Estimated global warming potential caused by greenhouse gases.

Total use of primary energy
1.4E+06 MJ

Amount of non-renewable energy resources estimated to be extracted throughout the product's life cycle.

Depletion of abiotic resources
0.77 kg Sb eq.

Depletion in non-renewable mineral resources (such as iron, zinc, etc.) in the environment.

Net use of fresh water
413 m3

Based on freshwater consumption, multiplied by a regionalization factor that takes water availability into account.

Eco-design considerations

Eco-design priorities for the DC Wallbox

The environmental assessment has pinpointed materials used for manufacturing of the DC Wallbox and energy consumption during the use phase as the main contributors to the DC Wallbox environmental impact. Eco-design priorities should therefore focus on:

- Reduce impact of materials by increasing lifespan of the DC Wallbox, choosing lower impact materials and reducing materials used.
- Reduce impact of use phase by optimizing energy consumption and increase low-carbon energy sources.

Recommendations for NIDEC DC Wallbox users

DC Wallbox users can contribute to reducing the environmental impacts of the EV charging infrastructure:

Power Supply from Renewable Sources

Ensure the DC Wallbox is supplied with renewable energy to minimize environmental impacts during the use phase.

Smart Charging Scheduling

Align charging sessions with times when the grid is supplied by low-carbon energy (e.g. daytime where solar power is available).

On-Site Renewable Integration

Combine charging stations with solar panels or battery storage systems to decrease reliance on the grid and enhance sustainability.

Regular Preventive Maintenance

Clean connectors and ensure cooling systems operate correctly in order to expand lifespan of charging station.

Nidec Conversion Green Product Design Roadmap 2028 targets

Nidec Conversion has identified specific targets for Green Product Design as part of its Sustainable Development Plan for 2028, and identified how they specifically apply to the DC Wallbox:

	Actions	DC Wallbox
Full circular economy principles across all product lines	• design for modularity and disassembly; • implement take-back and refurbishment programs; • use recycled materials; • embed circular KPIs in product development.	• design modular power blocks to allow easy upgrades and reuse of DC Wallbox; • cabinets can be refurbished instead of replaced.
Reduce carbon footprint by at least 10% for LCA assessed products	• conduct ISO-compliant LCAs; • switch to low-carbon and recycled materials; • optimize logistics; • improve use-phase efficiency via software.	• implement dynamic load management and power sharing reduce energy losses; • modular upgrades avoid full replacements.
100% reparability index assessed for our main product lines	• create a reparability scoring system; • expand remote diagnostics; • ensure spare parts availability and service training.	Minimize downtime and maximize repairability thanks to hot-swappable modules and remote diagnostics.
30% reduction in raw material consumption	• increase power density; • standardize modules; • use lightweight and recycled materials; • enable upgrades without replacing cabinets.	• scalable architecture avoids unnecessary material use; • shared power units in split systems reduce duplication.
100% energy efficiency enhanced in our products	• improve conversion efficiency; • enable smart energy management; • integrate storage for peak shaving; • provide efficiency dashboards.	• built-in dynamic load management and liquid-cooled cables maintain high efficiency; • software optimizes power routing and reduces losses.

To learn more about the product and its environmental assessment, please contact: orders.customers@nidec-asi.com

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nidec-conversion.com