

Product Environmental Profile

Getinge GEW 888 neo
cGMP washer/dryer

Overview

Getinge sustainability ambitions

At Getinge we take steps to empower our customers to reach their sustainability goals. One way to do this is by looking at how we can make our products and solutions as resource efficient as possible. We are committed to reduce our carbon footprint by setting ambitious targets to become net-zero by 2050 in line with the Science based targets initiative (SBTi).

All manufacturing sites work with Environmental management systems in compliance with ISO 14001.

Read more about Getinge sustainability ambitions on our website [here](#).

EcoDesign efforts

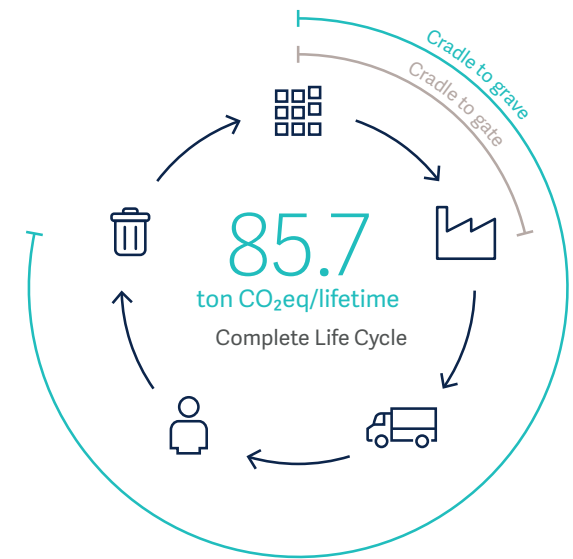
EcoDesign is standard practice at Getinge, focusing on using safer and fewer materials, incorporating circular solutions, and reducing media, energy, and water consumption.

The efforts for GEW 888 neo have mainly been focused on a more compact design. The area footprint has been halved while maintaining the same washing capacity. The washer structure and the hydraulic circuit have been completely redesigned to reduce raw material used and water consumption significantly. Around 37% of raw material weight - mainly stainless steel - has been reduced as a result of the EcoDesign efforts. Thanks to the piping optimization and the water pressure monitoring for the water level, water consumption can be reduced up to 32%.

The electrical system is completely redesigned using IO link technology for the sensors, enabling the reduction of wiring and electrical cabinet size.

The drying system has been redesigned to reduce the energy consumption.

Product climate impact



Product description

The GEW 888 neo is a fully integrated cleaning system designed to meet the specific needs and stringent regulations for cleaning production equipment, components, and glassware in biopharmaceutical production and quality assured laboratories.

The LCA results are calculated for the GEW 888 neo with chamber size 482 L. The reference product is a previous model: GEW 888.



Technical specification

Model	Usable Chamber Dimensions			Chamber Volume
	Width mm (inch)	Height mm (inch)	Depth mm (inch)	Liters (cu. ft.)
GEW 888 neo	805 (31.7")	770 (30.3")	778 (30.6")	482 (17.0)

Applicable directives and standards compliance for the product

1907/2006	REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)
2023/1542/EU	Batteries and waste batteries

Product environmental impact with focus on Climate impact

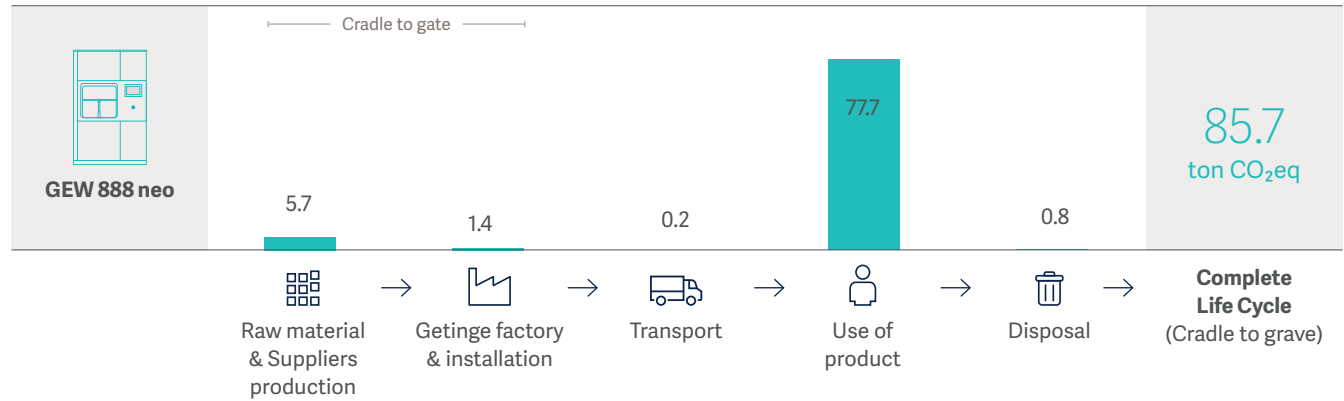
The environmental impact of the GEW 888 neo from a lifecycle perspective comes mainly from the electricity, water and detergent consumption in the use phase. In addition, the stainless steel footprint is significant. The new design has reduced energy use by 25%, water use with 32%, and subsequently the detergent flow reducing the climate impact significantly.

The process optimisation and choice of adequate recipe for the load to be washed, are the most important environmental aspects. The choice of energy source is critical and using renewable electricity can reduce the use phase climate impact by 47%. The detergent use has a significant impact and new design supports more efficient dosage. Raw materials and manufacturing of components have the second largest environmental impact. The large steel weight and electronics that have high emission intensity have the largest contribution to the cradle to gate footprint.

Embodied carbon footprint = 8.1 ton CO₂eq

Global warming Potential (GWP100a)

ton CO₂eq, weighted average for all markets



Regional Scenarios (ton CO₂eq)

Europe	5.7	1.4	0.2	67.0	0.8	75.2
US	5.7	1.4	0.1	73.4	0.8	81.1
APAC	5.7	1.5	0.1	94.9	0.8	103.3
Renewable Scenario	5.7	1.4	0.2	46.5	0.8	54.6

Recommendations to reduce the climate impact

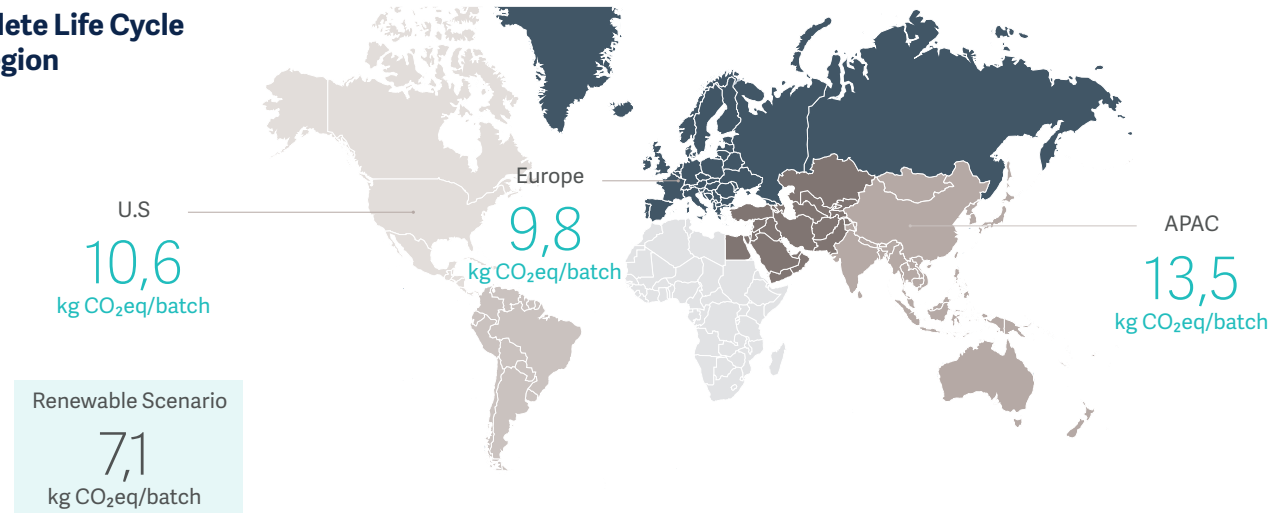
- Choose renewable energy sources for operation
- Include relevant options to enable resource efficiency; energy, water and heat recovery.
The Getinge single pass final rinse with a low volume per phase can reduce WFI use significantly
- Depending on the load to wash, from one recipe to another, define the minimum and suitable volume of water
- Select detergent with a lower environmental impact and define the quantity of product needed per recipe
- Work with product maintenance to ensure lifetime and efficiency
- Request continuously lower manufacturing footprint; use of renewables and raw materials with best in class climate footprint

Ecodesign ambitions for Getinge Life Science:

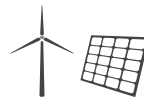
Getinge continues to look for opportunities to further reduce the Climate impact of our products and operations by for example:

- Increase the efficiency of energy and utilities in use
- Offer load optimization and recipe design to enable best throughput with lowest utility use (including detergents)
- Reduce the mass of the products
- Include more raw materials with low climate impact
- Include components with a better performance and better efficiency
- Optimize manufacturing efficiency; use of energy and utilities, material use
- Enable low carbon transport to customers
- Provide high quality customer service and maintenance support – through remote solution support process optimization and rebuilds and upgrades offering

Complete Life Cycle per Region



Climate impact of alternative use case and weight reduction



↓ 47% CO2eq

Renewable electricity in use

Customers using renewable electricity in operation can reduce the climate impact with up to 47%, and 36% on average.



↓ 32% & ↓ 50%

Reduced water consumption and reduced WFI use

Thanks to the piping optimization and the pressure monitoring for the water level, water consumption can be reduced up to 32%, depending on load and racks. A completely new single pass final rinse system has been developed, with a lower volume and the possibility to repeat the sequence depending on your application. Using this option WFI consumption can be reduced by 50% for the sequence.



↓ 37%

Compact and optimized design

The washer area footprint has been halved and weight reduced by 37%. By optimizing hydraulic piping sizing using simulations perfectly adapting the system to our application. The electrical system is completely redesigned using IO link technology for the sensors, enabling a weight reduction of wiring and cabling.



↓ 25%

Reduced energy consumption

The drying system includes a heat exchanger that recovers the thermal energy accumulated in the chamber during the final rinse. This recovered energy is used to preheat the incoming air for the drying cycle, reducing overall energy consumption with 25%.

Main assumptions of the LCA study (LCI parameters)

The product is designed and manufactured by Getinge Life Science in Tournefeuille France. The composition is derived from the bill of material (BOM) and all raw material are modeled with specific data for the material flows and processes used for manufacturing and supply of spare parts. Regional average approach has been used for choice of energy, transport and raw material datasets.

Energy use in the actual Getinge manufacturing unit (scope 1-2) is fully renewable (ie. electricity with Guarantee of Origin, reference year 2023). The outbound transport, use scenario and end-of-life for the main markets are simulated for the main markets as below. All transports have been calculated based on road and ocean freight.

Product

Weight: 671 kg

87% Stainless steel

6% Motor
3% Electronic components
2% Plastic
1% Various metals



Packaging

Weight: 414 kg

99,5% Wood

0,1% PU foam
0,1% PE-LD film
0,2% Metall



Material indicator



671 kg
Total mass of the product (net)

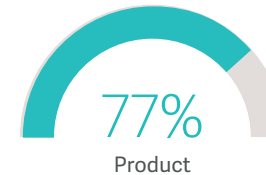


414 kg
Total mass of the packaging

Recyclability



Recycled materials



The following materials are considered recyclable: Steel, Alu, Bronze, Brass, Copper (except cables), Cardboard, Paper, Thermoplastics (PMMA, PVC, ABS, PC, PS, PET, PE, PA, PP, POM). Thermosetting plastics, elastomers and other materials not listed are considered non recyclable. Recycled content evaluated in the study but requires documented trail in the value chain.

Modelling typical use case scenarios

The environmental impact of using the cGMP GEW 888 Neo washer is highly depending on variations in key parameters, including cycle type, daily and annual usage, the types of components being washed, and the chemical consumables employed.

The results presented in this study are based on a typical usage scenario, based on Getinge's experience and recent customer cases.

All units are made to order, with a variety of standard and optional features available to optimize resource use and minimize utility consumption.

Energy & utility use per year		Based on
138	m ³ water	5 cycles/day, 5 days/week; 51 weeks/year = 1275 cycles/ year 1 cycle = 1 prewash, 1 hot washing, 1 hot rinse, 2 cold rinse, 1 drying, 2 min of cooling
4 147	kWh electricity	
663	liters acid chemicals	
663	liters basic chemicals	
0.8	kg filter change	
0.1	kg valve membrane change	

Note: Utility Data Sheet is available for every product type and order when configuration is set

Summary of the data for energy generation used for each region	
USA	Electricity mix; Production mix; low voltage; 2022; United States, US
Europe	Electricity mix; Production mix; low voltage; 2022; Europe, EU-27
APAC	Electricity mix; Production mix; low voltage; 2022; Asia Pacific, APAC
Renewable energy	Renewable certificates; 60% hydropower and 40% photovoltaic

The LCA and EcoDesign methods

Product Environmental Profile (PEP) communicates the results of a Life Cycle Assessment (LCA). This is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a product, process, or service. I.e. for a product environmental impacts are assessed for the raw material extraction (cradle) followed by the whole value-chain further processing, through the product's manufacturing (gate), distribution and use, to the recycling or final disposal of the materials it is composed of.

The LCA study follows requirements in ISO 14040 and ISO 14044 and has been 3rd party verified by Miljögiraff. The EIME v.6 software has been used to conduct the study with background data and datasets provided by LCIE Bureau Veritas. Impact assessment methods used are from "Indicators for PEF EF 3.1" developed by the European Commission. All LCA studies include holistic analysis of all relevant environmental impacts used for eco-design input. Further details can be available upon request, contact responsible PLM/R&D team.



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