

Life Cycle Assessment (LCA)

E-138 EP3 E3

Turbine Specification

Nominal power	4.26 MW
Service life	25 years
Hub height	160 metres
Wind class	III A
Annual energy production ¹	14,458 MWh
Tower type	Hybrid
Foundation type	Flat foundation

LCA Framework ³

Goal and Scope

Assessment of potential environmental impacts throughout the product life cycle (cradle to grave)

Functional unit

1 kWh of generated electrical energy delivered to the grid

Impact assessment method

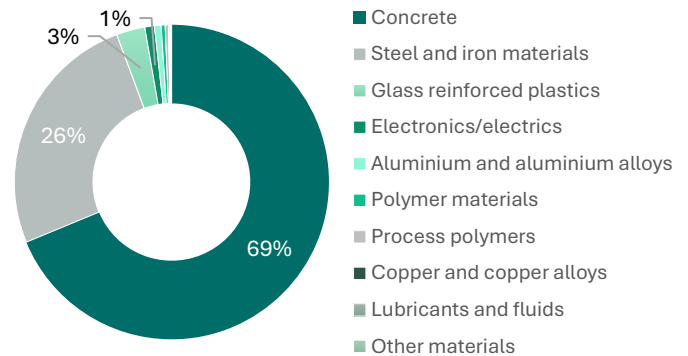
Environmental Footprint (EF) 3.1

Data sources and software

Primary data, industry-specific secondary data, LCA for Experts background data (2025.2)

No cut-off rules applied for Life Cycle Inventory

Material Composition ²



Environmental Impact Indicators

Acidification, mmol of H ⁺ -e	0.02
Climate Change total, g CO ₂ -e	5.54
Eutrophication (freshwater), mg P-e	0.01
Photochemical Ozone Formation (human health), g NMVOC-e	0.01
Primary Energy Demand (renewable and non-renewable resources, net calorific value), MJ	0.08
Resource Use (fossils), MJ	0.07

Other Environmental Indicators

Carbon footprint

470 
t CO₂-e/MW

Energy Payback Time

6.88 
months

Return on Energy

43.6 
times

Recyclability ^{2, 4}

90.3 
%

¹ | Based on design wind speed 7.5 m/s, including losses

² | Turbine without foundation

³ | Principles according to ISO 14040/14044

⁴ | Based on industry-specific expert assessments of recycling rates