

Electrifying Ports and Maritime

Shore power (cold ironing), electric ferry charging, and port energy management systems. EU AFIR 2030 compliance for maritime decarbonization.

SHORE POWER (COLD IRONING)

AC-DC-AC frequency conversion to connect vessels to the onshore power grid, eliminating in-port emissions.

■ 50/60 Hz Conversion

AC-DC-AC frequency converters adapting the onshore grid (50 Hz) to vessel requirements (60 Hz) or vice versa, with full galvanic isolation.

■ Containerized Deployment

Pre-assembled systems in standard ISO containers, reducing installation time to under 72 hours and minimizing civil works.

■ Container Ships 5-10 MW

Optimized systems for cargo vessels needing 5-10 MW, with fast automated connection to minimize turnaround time.

■ 10-80 MVA per Berth

Scalable power from 10 MVA for cargo vessels to 80 MVA for large cruise ships, with modular systems that grow with port demand.

■ Cruise Ships 10-20 MW

Dedicated solution for cruise ships requiring 10-20 MW continuous power during port stay, fully replacing auxiliary engines.

ELECTRIC FERRY CHARGING

High-power DC fast charging infrastructure for the growing battery-electric ferry fleet across Europe and Scandinavia.

■ 2-10 MW Fast Charging

High-power DC charging systems (2-10 MW) designed for short ferry turnarounds, with 5-15 minute charging cycles.

■ DC Infrastructure

DC fast charging stations with advanced thermal management and automated connectors for hands-free operation.

■ Battery-Electric Ferries

Full support for the growing fleet of 100% electric ferries, rapidly expanding across Scandinavia and northern Europe.

PORT ENERGY STORAGE

Containerized BESS systems for peak management, transient buffering, and port microgrid operation.

■ Peak Shaving

Demand peak clipping to avoid costly grid upgrades, absorbing vessel connection power spikes.

■ Port Microgrid

Comprehensive port microgrid management integrating solar generation, storage, and port loads.

■ Transient Buffer

Electrical transient dampening during ship connection and disconnection, protecting port grid stability.

■ Backup Power

Critical backup power for essential port operations during grid outages.

PORT POWER QUALITY

Active harmonic filtering and power factor correction for complex port electrical systems.

■ Converter Harmonics

Shore power frequency converters generate significant harmonics. Our active filters eliminate them to meet IEC 61000 standards.

■ Power Factor Correction

Reactive compensation and power factor correction for port-wide systems, optimizing electricity costs.

■ Step Loads

Step load management when multiple vessels connect and disconnect, preventing grid disturbances across the port.

KEY FIGURES

2030

EU AFIR mandatory shore power

10-80 MVA

Power per berth

<72h

Containerized deployment

\$2.5B+

Global market by 2030

CERTIFICATIONS & STANDARDS

- CE
- IMO
- Lloyd's Register
- IEC 80005
- DNV

DECARBONIZE YOUR PORT

Our engineering team designs the complete port electrification solution, from shore power to storage and power quality.

Eneraq

info@eneraq.com · eneraq.com/en/sectors/marine

European technology · In-house R&D