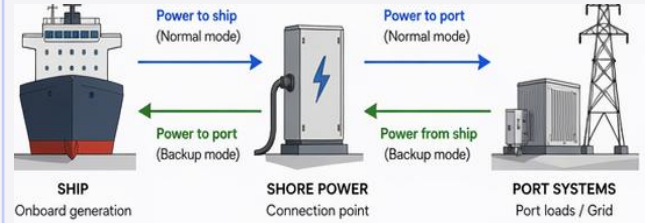


### WHY THIS MATTERS

## Ports cannot stop when the grid goes down.

Finland's ports handle 94% of exports and 96% of imports, which makes reliable electricity a national resilience issue, not just a utility issue. As machinery, lighting, heating, pumps, and shore power become more electric, the operational cost of an outage rises. By 2030, the EU requires large ports to cover at least 90% of ships' dockside electricity demand with shore power.

*Shore power can do more than serve ships. It may also strengthen the port.*

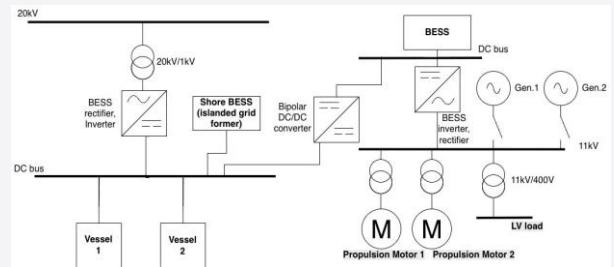


Concept diagram showing how shore power links could enable two-way energy exchange between ships and port systems.

### HOW IT WORKS

## Ships and vessels could support the port when grid power is disrupted.

The project studies whether ships that already generate their own electricity can support essential port operations during disturbances or power shortages. Existing shore power systems create the physical connection for two-way exchange, but technical, regulatory, and operational conditions still need clarification. The work evaluates feasibility, cost-effectiveness, DSO roles, and stakeholder interest across ports, shipowners, authorities, and equipment suppliers.



Preliminary concept diagram for Port Vessel Battery Energy Storage System (BESS)

### WHAT THIS PROJECT DELIVERS

## From feasibility study to an external research project.

The project turns a strategic idea into something decision-makers can assess. It combines regulatory review, technical requirement mapping, stakeholder interviews mainly in Finland, and benchmarking of related pilots. The result is a concise analytical report and practical guidance for a Business Finland follow-up proposal.

### WHO IT IS FOR

## For ports, shipowners, DSOs, and infrastructure partners.

The target group includes port operators, shipping companies, local DSOs, authorities responsible for infrastructure security, equipment suppliers, and export-industry stakeholders. In practical terms, the value is stronger resilience planning, clearer technical and business conditions, and a more realistic path toward scalable port electrification.

### PROJECT SNAPSHOT

Lead  
Juha  
Haakana

Researcher  
Postdoctoral  
researcher

Timeline  
March-Sep 2026

Partner  
Kempower

Primary output  
Analytical report +  
follow-up funding  
roadmap