

Harbour support system for hybrid vessels, research questions

FESSMI

**Future energy storage solutions in marine
installations**

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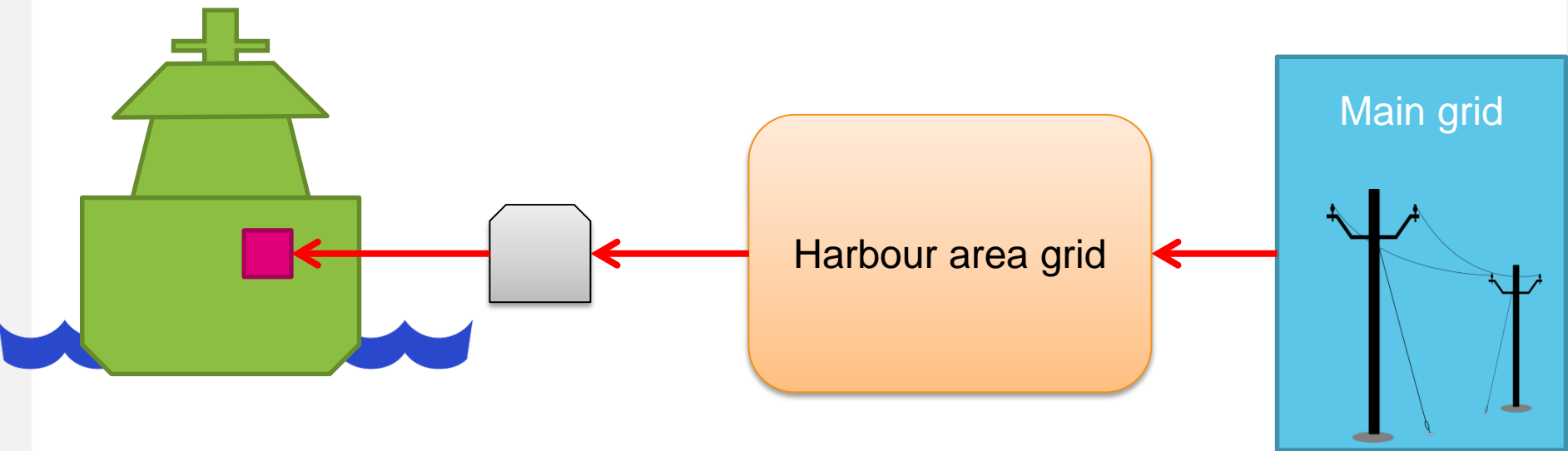


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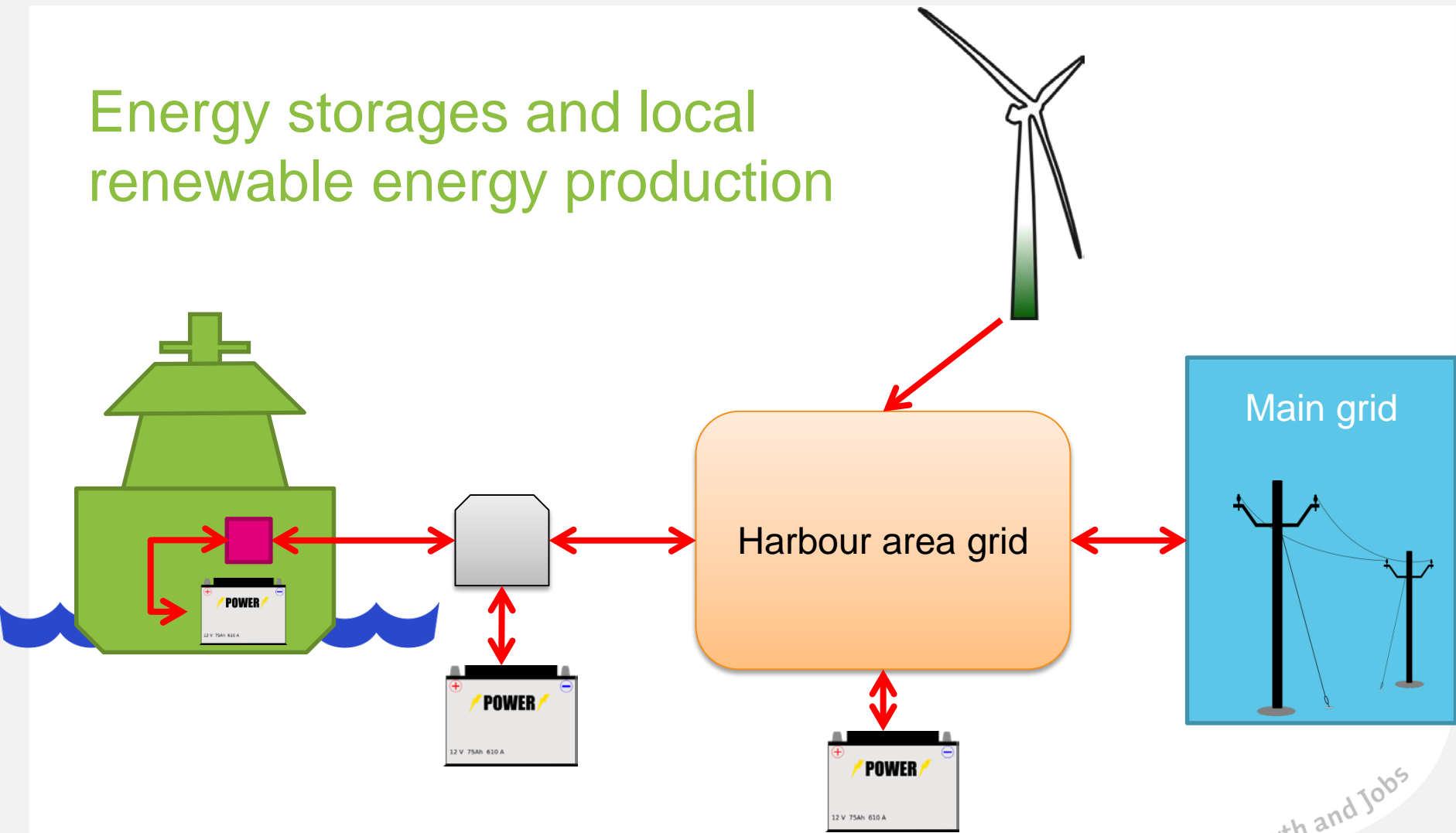
Leverage from
the EU
2014–2020



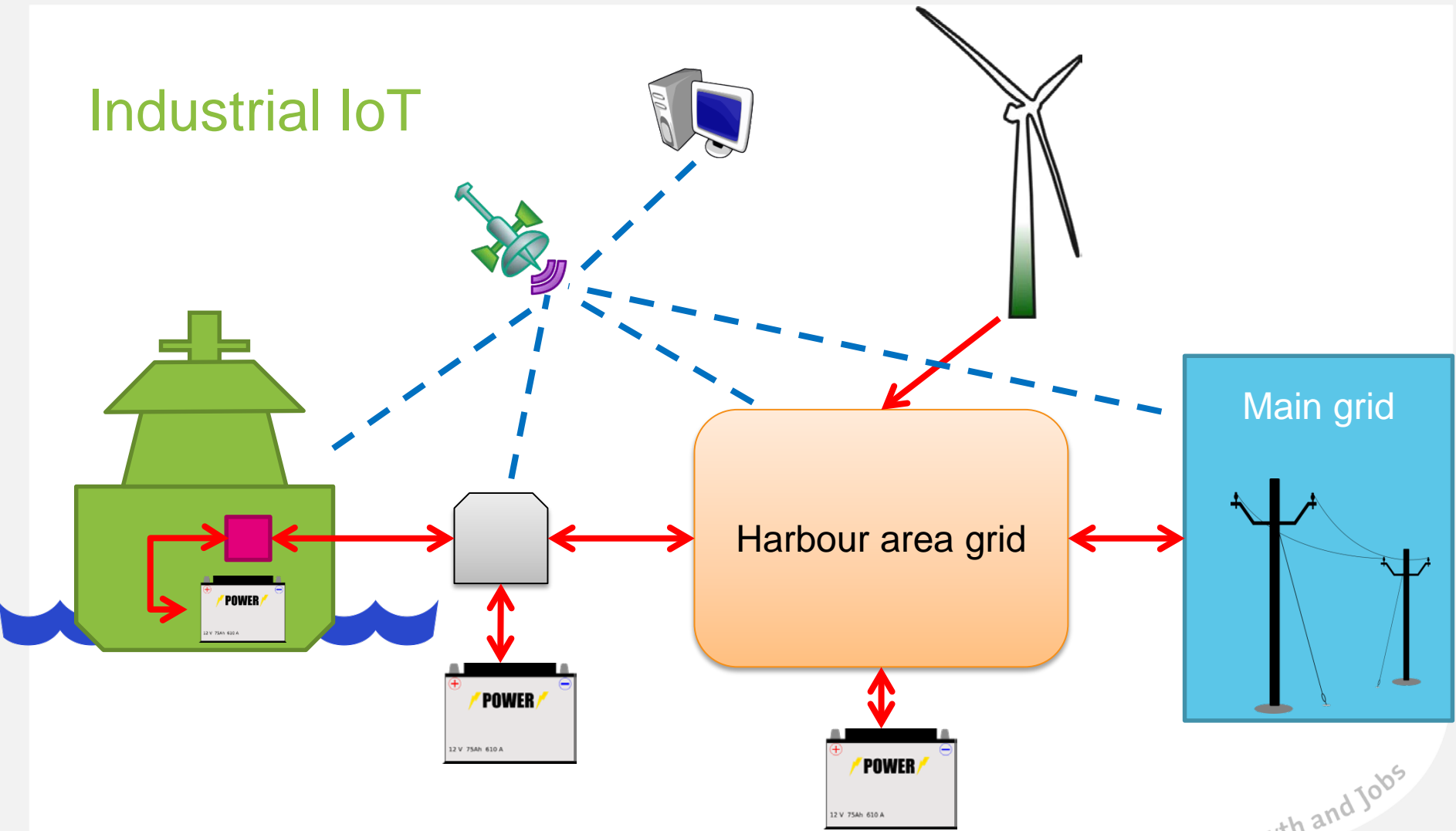
Shore-side electricity supply



Energy storages and local renewable energy production



Industrial IoT



FESSMI: WP 2

Hybrid vessel harbour support system modeling and analysis

- Design principles of the harbour support system
 - Vessel interface
 - Land based storage
 - Renewable generation
 - Grid connection
- Different operational scenarios
- Protection and safety issues, power quality
- Tolerance to external faults



Tasks and Deliverables, WP 2

T 2.1 Model development (PSCAD)

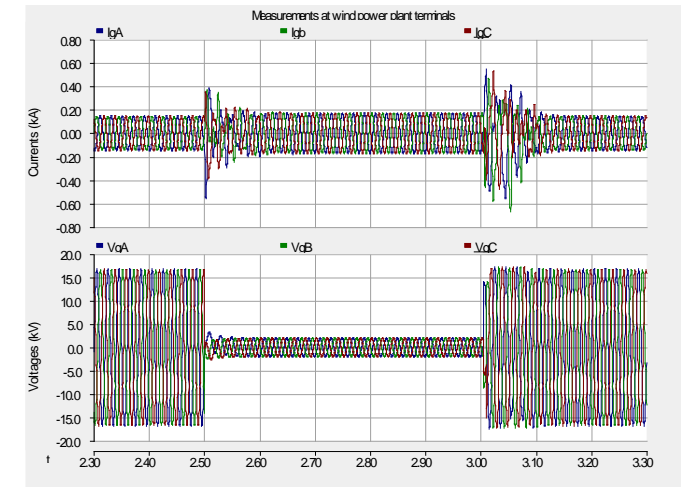
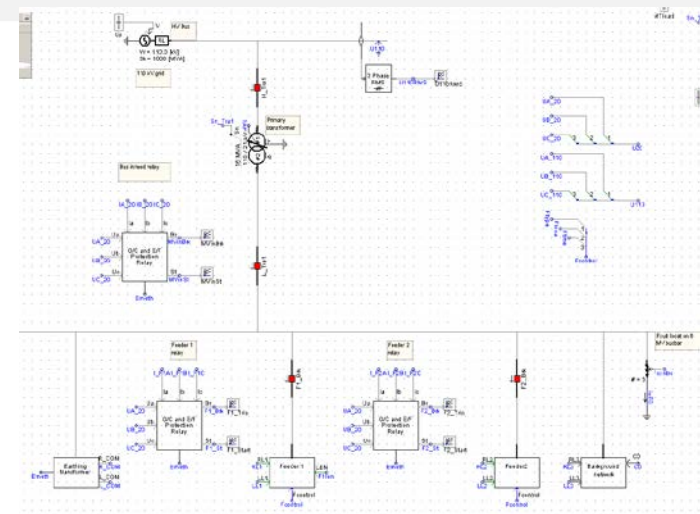
- Simplified model of the vessel power system
- Detailed models of alternative harbour systems

T 2.2 Verification of system dimensioning

- Optimal control strategies for different operation scenarios
- Guidelines for system dimensioning

T 2.3 Analysis of power quality and fault tolerance

- Information about harmonics in normal operating state and voltage sags caused by the faults
- Performance/requirements of the key components during grid faults



Kiitos!



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