European flagship Action for coLd ironING in ports

Main results of the EALING technical, environmental and financial studies

EALING Final Event

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ACTIVITIES / STUDIES PERFORMED

Technical studies

Environmental studies

Clean Power Supply Plans

Tender documentation

Cost-Benefit Analyses

Financial and blending schemes

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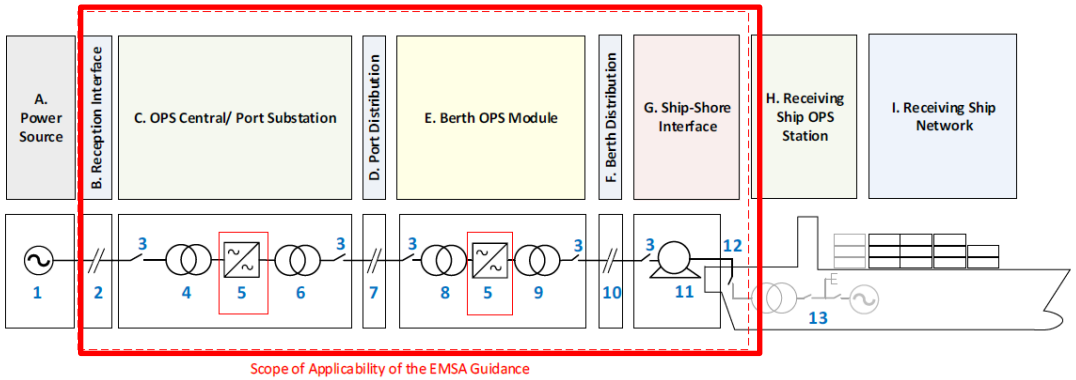
Technical studies

→ **FRONT-END ENGINEERING DESIGN (FEED) STUDIES** to enable ports to launch the works phase after the completion of the Action.

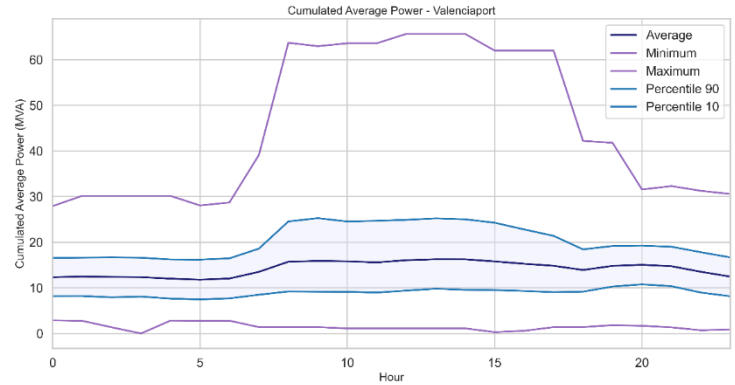
They include:

- Technical specifications for the systems:
  - Shore connection substations (switchgears; transformers; frequency converters; protection, control and monitoring systems; SCADA)
  - Cable management systems
- Costs estimation



→ **OTHER NECESSARY TECHNICAL STUDIES** (additional studies performed by some of the ports)

- SSE demand analyses
- Studies of grid capacity of the port
- Roadmaps for the electrification of the quays
- Operational model studies for the SSE systems



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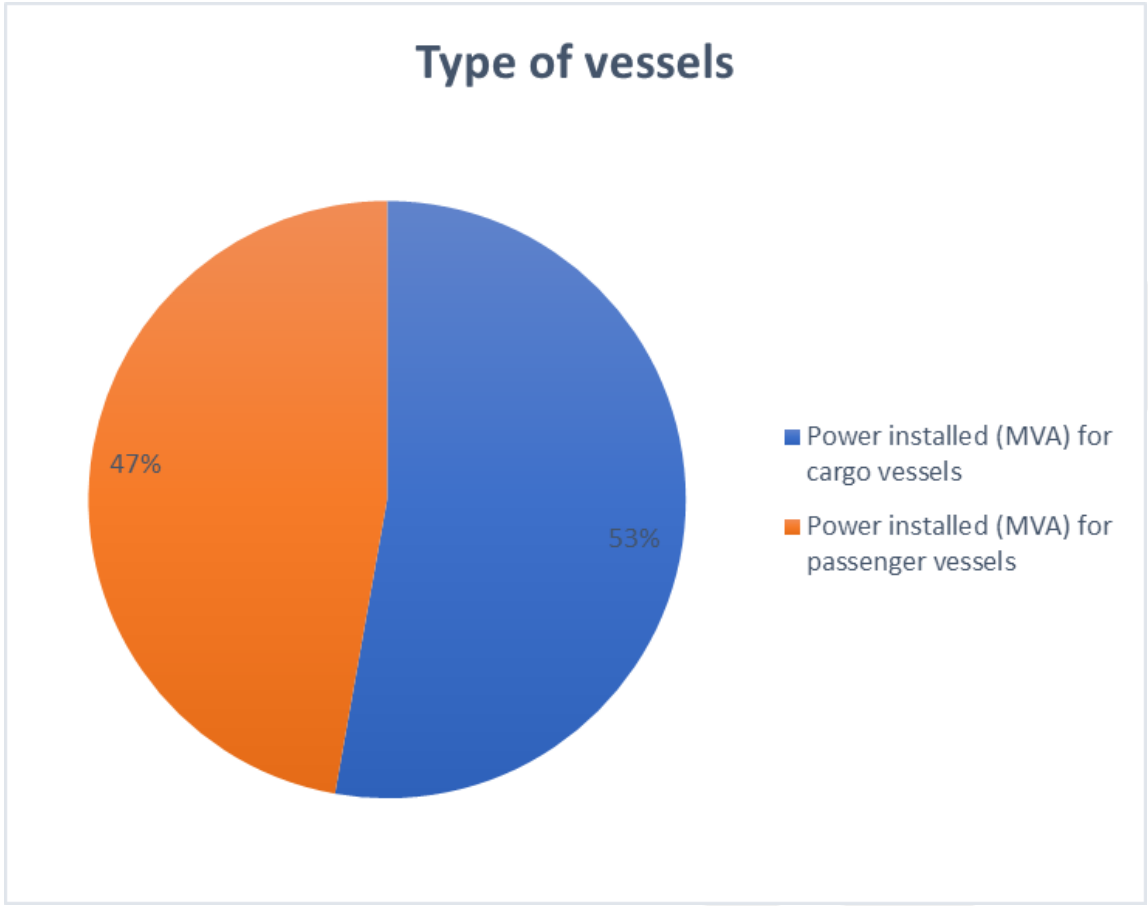
Technical studies

SOME FIGURES:

- 16 EU PORTS
- FEED Studies sum more than **245 MVA** of nominal power to be installed



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Environmental studies

- Environmental Studies performed in the 16 EALING ports

Risk analysis matrix		IMPACT		
		Minor	Moderate	Significant / Adverse
LIKELIHOOD	Rare			
	Moderate			
	Almost certain			

- None of the future SSE infrastructures is subject to Environmental Impact Assessment

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Clean Power Supply Plans

DEVELOPMENT OR UPDATING OF THE CLEAN POWER SUPPLY PLANS OF THE PORTS

- Energy consumption in the port: current situation / origin of the energy
  - Port Authority
  - Terminals
  - Ships
  - Other facilities/services

- Future energy demand

- Planned actions to cover the future energy needs → **Integration of SSE as a crucial part of the port's emission reduction strategy.**

Tender documentation

PREPARATION OF THE TENDER DOCUMENTS FOR THE PROPOSED SSE INVESTMENTS

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Cost-Benefit Analyses and financial and blending schemes

- Cost Benefit Analysis (CBA) to assess the financial and economic performance of the future SSE infrastructures, including monetised environmental externalities, and to enable the investment decisions.

Main results	Quay 1	Quay 2	Quay 3
Total Investments (€)	10,164,650	12,318,187	12,528,034
Timeline (years)	2023-2047	2023-2047	2023-2047
Nº of calls requesting SSE for the full period studied	12,233	13,084	16,741
Financial Net Present Value (FNPV) (€)	(- 20,559,551)	(- 13,272,780)	(- 13,455,292)
Payback	---	---	---
Total CO_2eq emissions saved (tonnes)	662,349	75,918	156,113
Total NOx emissions saved (tonnes)	10,635	1,266	2,536
Total SOx emissions saved (tonnes)	294	40	73
Total PMx emissions saved (tonnes)	666	52	141
Total noise emissions saved (€)	84,642	308,719	460,858

- Proposal of suitable investment schemes based on the specific features of the SSE investments proposed.

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Cost-Benefit Analyses and financial and blending schemes

SOME FIGURES:

- **More than 225 M€ in CAPEX** from the FEED Studies performed.
- **Average of 920 k€ per MVA** installed.

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… AND A FINAL REMARK:

- 16 EU PORTS.
- **Total estimate of more than 5 M tonnes of CO2eq** that would be avoided each year, only with the SSE Projects of EALING.

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Thanks!

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Discover more at

www.ealingproject.eu

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