



European flagship Action for coLd ironING in ports



Co-financed by the Connecting Europe
Facility of the European Union

EALING Studies - Activities 2 & 3

SEAFUTURE – EALING West Med Macro Regional Workshop

30 September 2021



1

Activity 2 – Maritime fleet adaptation

2

Activity 3 – FEED studies

Activity 2

1. Activity 2 – Maritime fleet adaptation

Partners



Activity 2 - Main tasks

- ▶ Focus on ensuring and facilitating the port to vessel compatibility for OPS adaptation
- ▶ Identify and study the electrical standards and regulatory framework on an ad-hoc basis as per port/vessel
- ▶ Study several scenarios (various arrangements / different vessel types)
- ▶ Recommend best practices for required vessel retrofit under a cost-benefit analysis consideration
- ▶ Provide operational recommendations, taking IMO guidelines as a reference, for a harmonized technical, legal and regulatory framework on fleet electrification adaptation, leading to a final proposal to IMO.

Activity 2 - Main steps to reach the goal

► QUESTIONNAIRES - INTERVIEWS

Detailed research via the formulation of questionnaires distributed to shipping lines, shipowners, classification societies, flag administrations.

- General Info / Fleet Identification
- Technical Data / Power Requirements
- Regulatory / Financial Info

► WORKSHOP WITH SHIPPING LINES/ASSOCIATIONS

Communication channel with Shipping lines and Shipping Associations

- OPS experience so far
- Challenges / Opportunities
- Feedback / Thoughts sharing

Activity 2 - Main steps to reach the goal

► ANALYSIS OUTCOME

Identification of the relevant technical, regulatory and financial elements to facilitate adaptation/connectivity of vessels to shore side electricity.



Actions so far:

- Activity 2 KoM to identify tasks / time plan / workflow
- Very close cooperation with Activity 1 to identify relevant tasks between Act.1 & Act.2 / optimize tasks execution / avoid overlaps and create opportunities.
- Completion of the questionnaires for Shipping Lines / Classes / Flags
- Workshop with Shipping Lines
- Questionnaires distribution completion - beginning of data collection

Next Steps:

- Questionnaires data collection completion
- Analysis of data collected
- Act. 2 progress meeting

Questionnaires task - A brief description:

► Questionnaire No.1

Addressed to **Shipping Lines**

- Shipping lines visiting the Ports of the consortium have been contacted
- More than 100 contacts

a - General Information - *Fleet Identification*

b - Technical Aspects - *OPS maturity level, power requirements etc.*

c - Regulatory / Admin Aspects - *Financial information, regulatory challenges etc.*

► Questionnaire No.2

Addressed to **Classification Societies and Flag Registries**

- IACS members and Flags representing visiting Shipping Lines contacted

a - General Entity Information

b - Technical Aspects

c - Regulatory / Admin Aspects

d - Training

Workshop task - A brief description:

- More than 80 participants
- Project partners
 - Associations (*CINEA, EU MoS, DG MOVE, EMSA, ECSA*)
 - Shipping Lines representatives
- Institutional Session
 - EALING Session
 - Shipping Lines session

Activity 3

Activity 3 - Main tasks

- ▶ Execute the detailed technical design studies for the electrification infrastructure necessary for the ports of the consortium.
- ▶ The implementation of front-end engineering design (FEED) studies providing the fully defined engineering package needed to enable ports launching the works phase right after the end of the Action.
- ▶ FEED studies will include:
 - ▶ *specifications for main primary and secondary equipment*
 - ▶ *cost estimation for procurement and erection of the future cold ironing and electric bunkering infrastructure*
 - ▶ *technical design studies providing planning design, final specifications for equipment and infrastructure, and final budget*

Activity 3 – FEED Studies Piraeus Port

► Potential Scenarios – Alternative 1



Activity 3 – FEED Studies Piraeus Port

► Potential Scenarios – Alternative 2



OPS 1:

- TR of “Tzelepi SS”: 630kVA -> 1600kVA
- Installation of MV Panels, TRs & F.C.
 - Containerized Solution
 - Existing Building

OPS 2, 3:

- TR of “Ag. Dionisis SS”: 400kVA -> 2000kVA
- OPS 3 LVSC (750 kVA)
- Installation of MV Panels, TRs & F.C.
 - Containerized Solution (2 Containers)

OPS 4:

- TR of “Elektiria SS”: 630kVA -> 3000kVA
- OPS 3 LVSC (750 kVA)
- Installation of MV Panels, TRs & F.C.
 - Containerized Solution

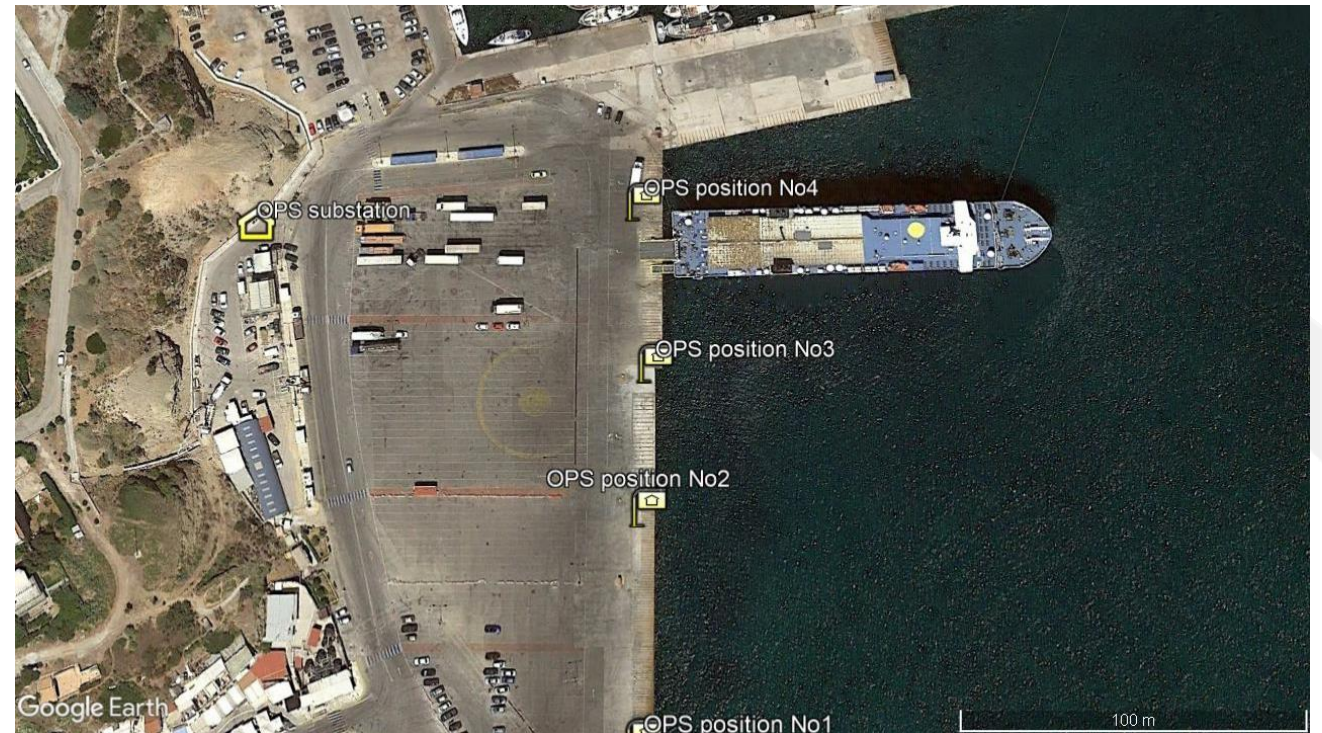
OPS 5:

- TR of “3o Dock SS”: 1600kVA -> 6000kVA
- Installation of MV Panels, TRs & F.C.
 - Containerized Solution
 - Installation at 3 Dock SS Building

Activity 3 – FEED Studies Rafina Port

► Conceptual Design

- *Main cold ironing Substation*
- *Building 200 m²*
- *Total Power 4 MVA*
- *2 HVSC positions (1.5 MVA)*
- *2 LVSC positions (0.5 MVA)*

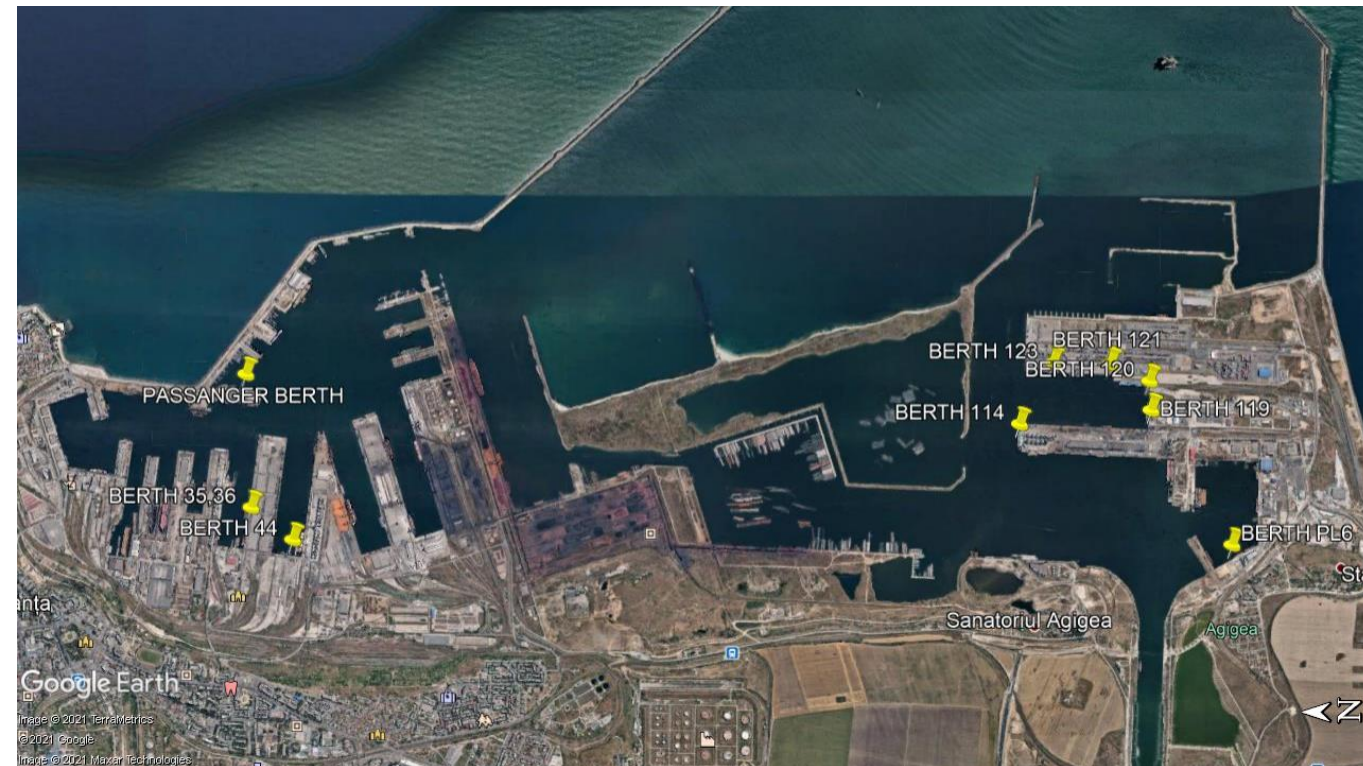


Activity 3 – FEED Studies Constanta Port

► OPS position information

Berth	Vessel Type	Load Demand [MW]	OPS positions	frequency (Hz)
121	Container	5	1x5MW	60
120	Ro-Ro	3	3x1MW	60
PL6	Ro-Ro	3	3x1MW	60
Passenger	Passenger	5	1x5MW	60
114	Bulk	3	3x1MW	60
123	Container	5	1x5MW	60
119	Multipurpose	3	3x1MW	60
44	Multipurpose	3	3x1MW	60
35.36	Multipurpose	3	3x1MW	60
CL	Tanker	10	2x5MW	60

► OPS position location



Activity 3 – FEED Studies Burgas & Varna Ports

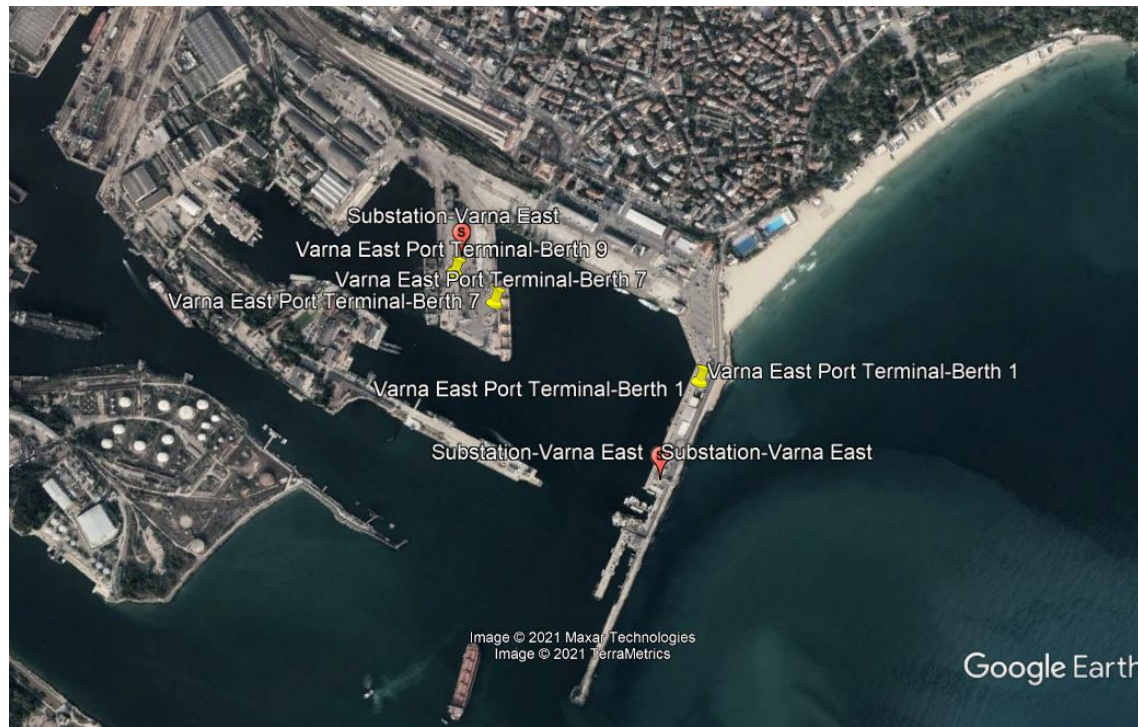
► OPS position location Burgas



Position number	Berth	Vessel Type	Berthing time
1	Passen Terminal	passenger	1-10 days
2	Burgas East 1 Port Terminal	General/Bulk Cargo	1-5 days
3	Burgas East 2 Port Terminal	General/Dry Bulk/liquid bulk Cargo	1-5 days
4	Burgas East 2A Port Terminal	General/Bulk Cargo	1-8 days
5	Burgas West Port Terminal	General cargo/Containers	1-8 days

Activity 3 – FEED Studies Burgas & Varna Ports

► OPS position location Varna



Position number	Berth	Vessel Type	Berthing time
1	Varna East Port Terminal	General/Bulk Cargo	1-8 days
2	Ferry Terminal	Ro-Ro	1-6 days
3	Varna East Passenger Terminal	Passenger	1-5 days

Activity 3 – FEED Studies Consortium Ports

► Studies Progress

Port	Studies initiation dates	Studies completion (estimation)
Barcelona	06-21	07-22
Valencia	06-21	09-22
Huelva	06-21	09-22
Gijon	06-21	05-22
Venice	09-21	04-22
Trieste	08-21	04-22
Ancona	06-21	10-21
Irish ports	01-22	12-22
Leixoes	05-21	12-22
Acores		12-22
Koper	05-21	12-22

Thanks!



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Contacts

Mr. Astrinos Papadakis - HYDRUS ENGINEERING SA

Mechanical Eng. / R&D Coordinator

a.papadakis@hydrus-eng.com

Mr. Stefanos Dallas - PROTASIS SA

Technical Project Manager

sdallas@protasis.net.gr

Discover more at

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