

elemed

electrification
in the eastern
mediterranean

The Elemed action, electrification
as the key to sustainable Port &
Shipping Operations

Panos Mitrou

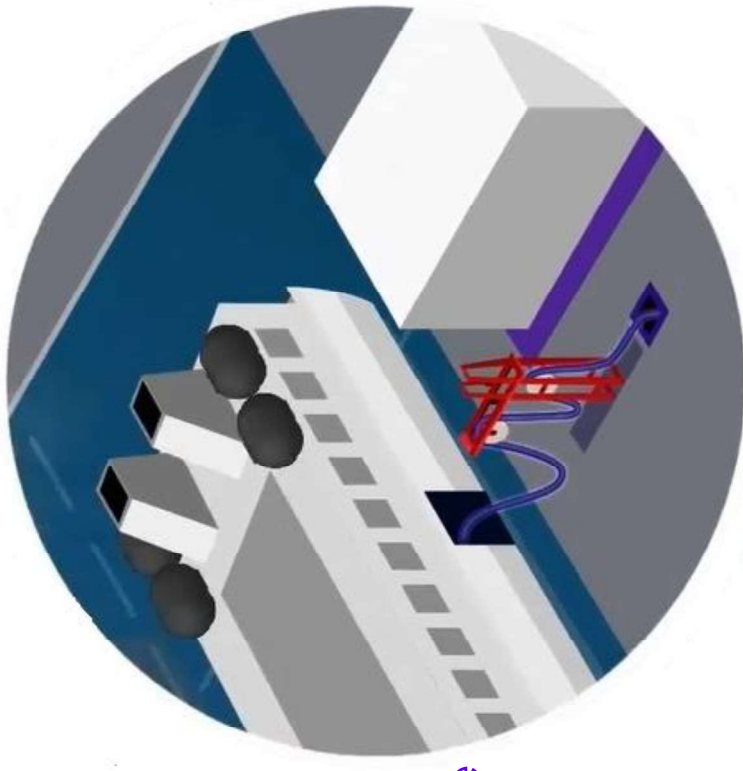
Technology & Innovation Manager,
Marine & Offshore, Lloyd's Register, South Europe

**Cold Ironing for Eastern Mediterranean & Port
of Koper case**

29 January 2018, Praetorian Palace – Koper, SI



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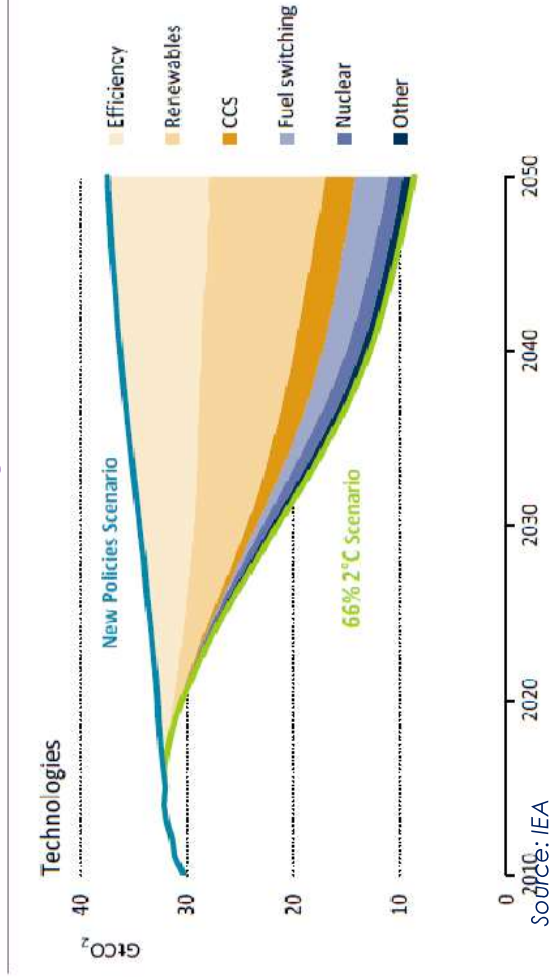


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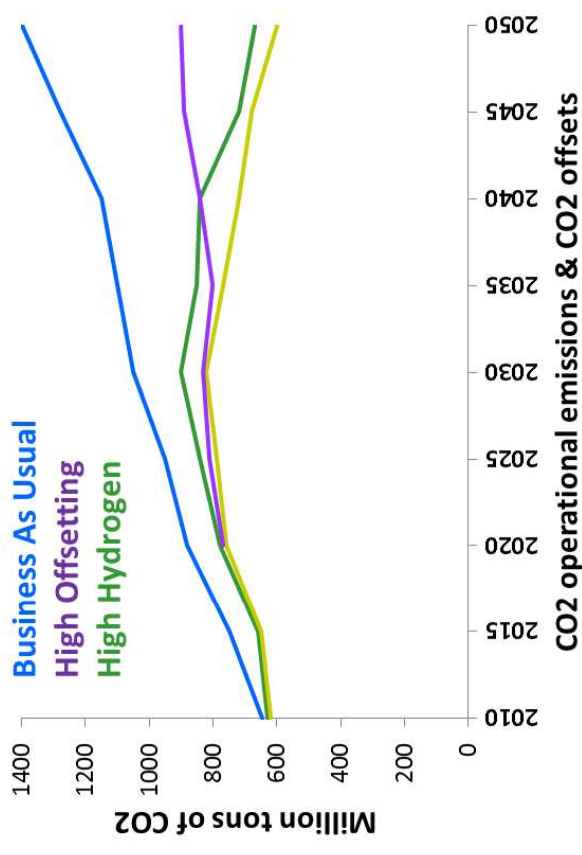
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Decarbonisation – The mother of Challenges

IEA Carbon Dioxide emissions under NPS and 66%2degC



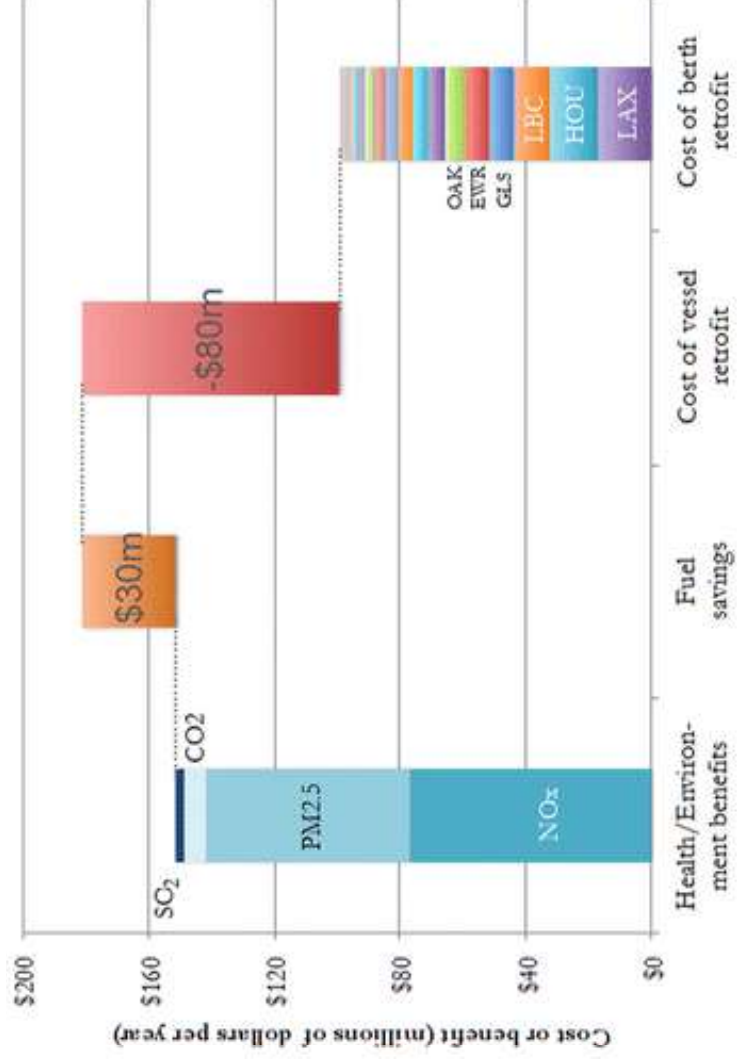
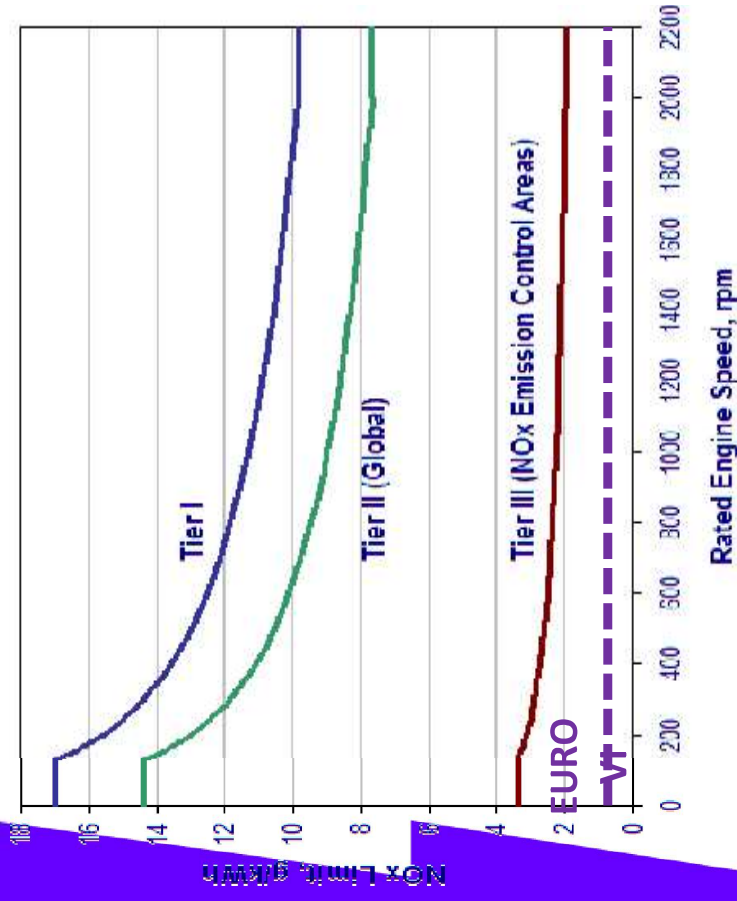
LR Carbon Pathways – Shipping GHG Emissions Scenarios



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X Factor – The Carbon premium

Local pollution – The Lethal emissions



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From Crisis to Opportunity The South-eastern Mediterranean Corridor



Public Health



Growth



Environment



Mobility

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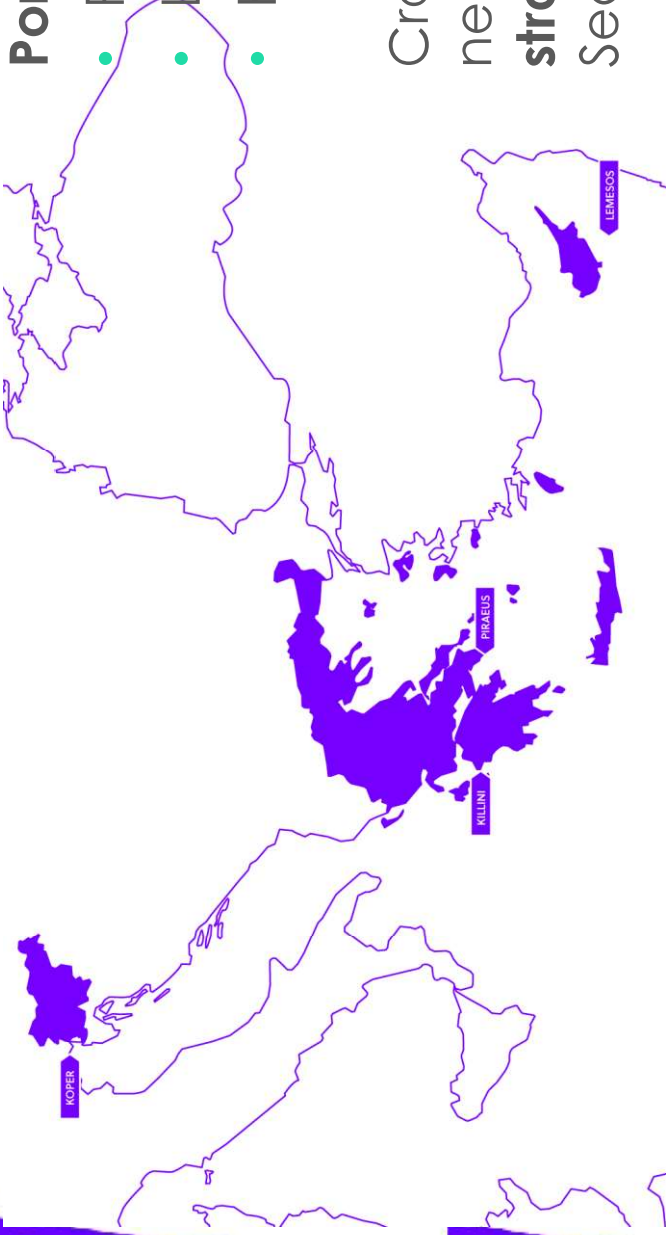
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Elemed Project Anatomy

3 Member States – Participating

Ports:

- Piraeus – Killini (Greece)
- Lemesos (Cyprus)
- Koper (Slovenia)



Cross-european maritime network and **macro-regional strategies** for Adriatic-Ionian Seas

First Cohesion Fund project in Motorways of the Sea,

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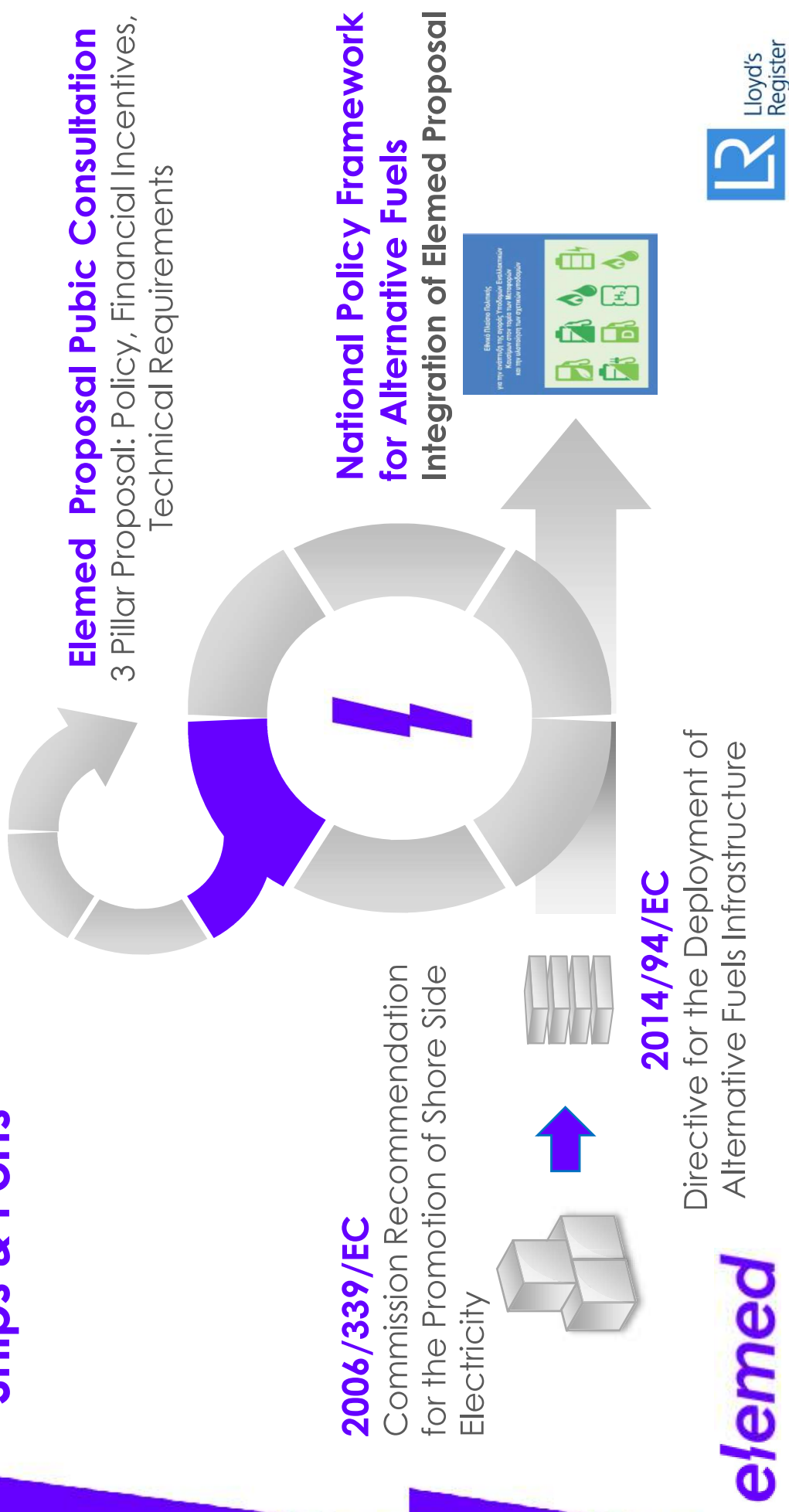
The Consortium



- ! Hellenic Lloyd's SA
- ! National Technical University of Athens
- ! Piraeus Port Authority
- ! Kyllini Port
- ! Cyprus Ports Authority
- ! Port of Koper
- ! Hydrus Engineering Ltd
- ! Spanopoulos Group
- ! Protasis SA
- ! Hellenic Centre for Marine Research



A modern Regulatory framework for electrification in Ships & Ports



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Killini Pilot Installation

Serving the Zakynthos and Kefalonia Islands

Port Installation for 2-4 Shore Connections
Projected

Real life application – crash test for
similar port works

Record time permitting process
conclusion



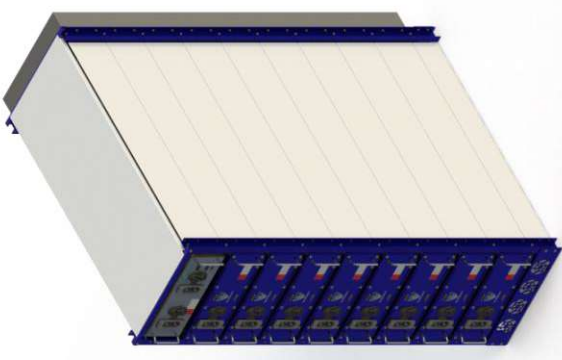
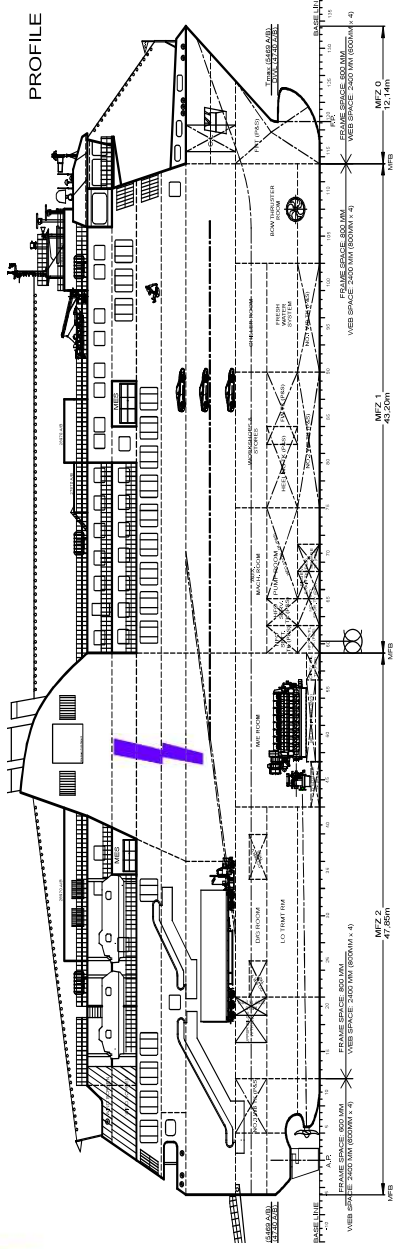
*Pilot installation: 1 berth supplying one Ro-Pax
vessel with approx. 500kVA needs during port stay*

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Elemed Vessel Design

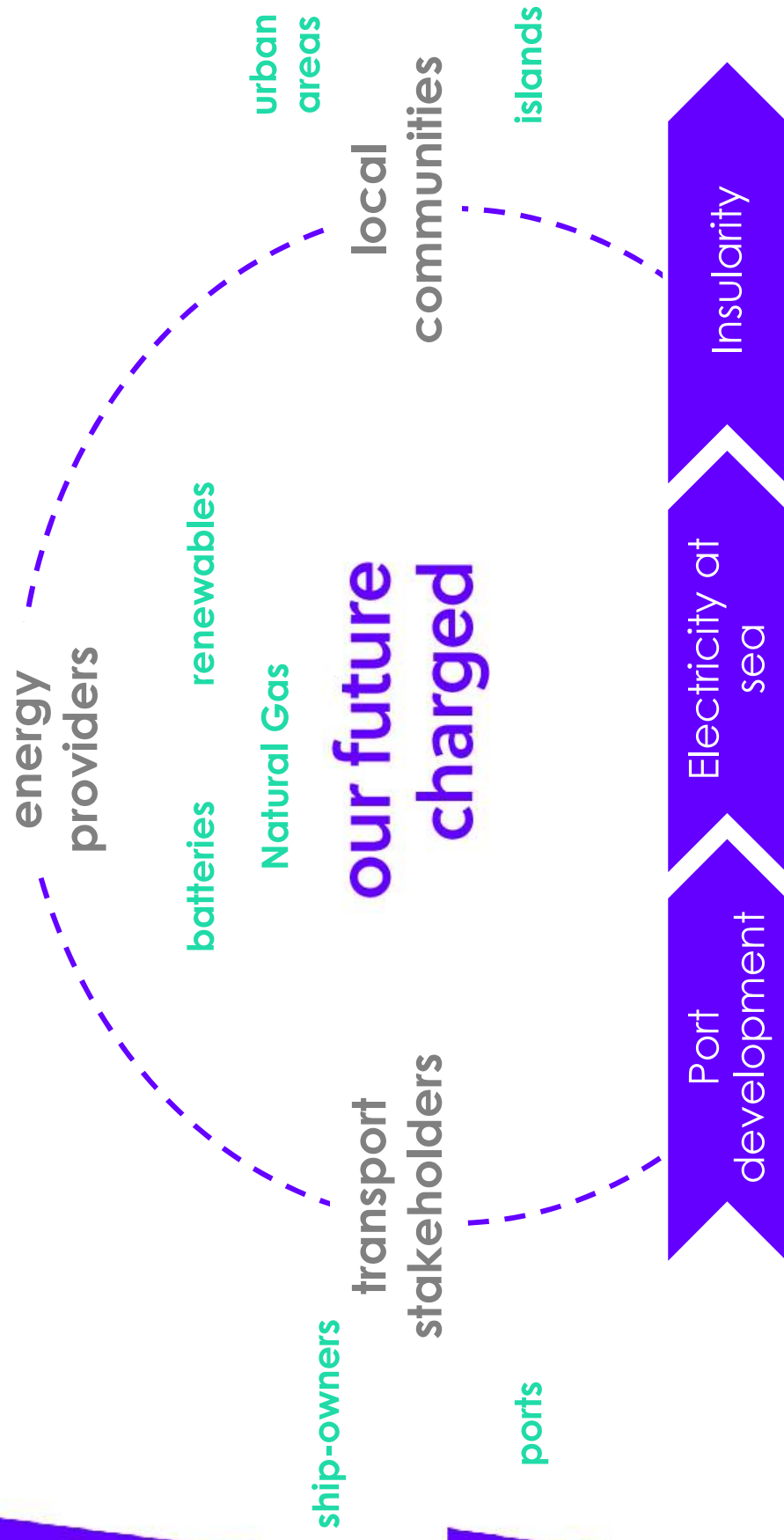


- Twin Screw/Twin Hull Ro-Pax
- LOA 84.4m
- Breadth: 26.0m
- Draught: 3.8m
- 1000 Pax
- Service Speed : 17 kts
- All Electric Configuration
- Top Tier Deck allocated for solar panels

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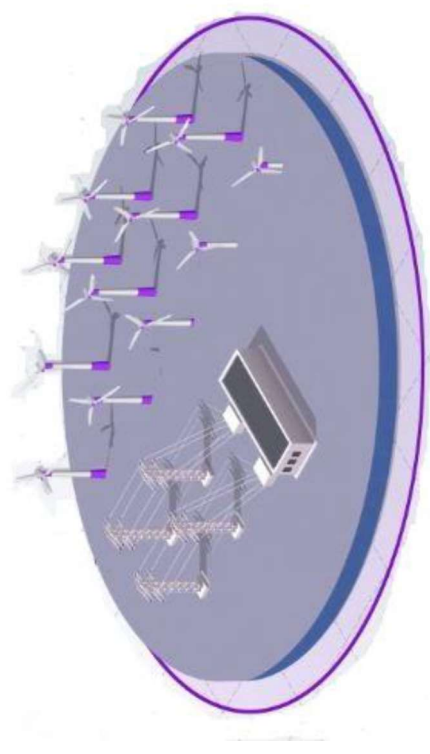
- Projected battery Needs 5MWh @ 17kts
- Projected Installation 8MWh
- DC power distribution for space and performance optimization
- 50% CO2 reduction, NOx, SOx & PM elimination

Elemed: building cross-stream synergy



Planning ahead

- ! Raise awareness over the benefits and economies
- ! Electrical Infrastructure as key to port development
- ! Explore & Create more synergies, on land electrification
- ! Instigate investment today benefit from a smoother transition



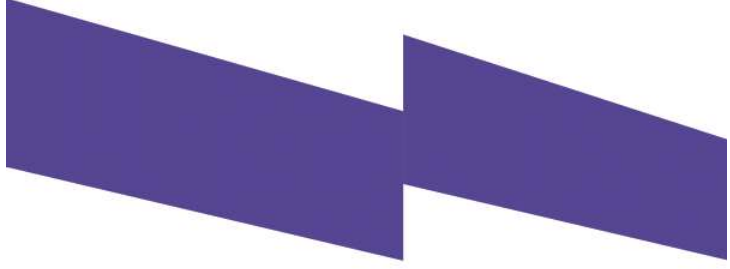
Our Vision, setting the foundation for sustainable Marine Transportation and port operations through electrification as the bridge to renewable energy.

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Vote for Elemed in Green4Sea Initiative Award



<https://www.green4sea.com/2018-green4sea-awards/>

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our future
charged

Thank you



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