
CoNISMa
Consorzio Nazionale Interuniversitario per le Scienze del Mare
ascame
CPMR INTERMEDITERRANEAN COMMISSION
National Technical University of Athens
Plan Bleu
IBM
Interreg
Mediterranean
EUROPEAN UNION
BLUE GROWTH
Project co-financed by the European Regional Development Fund
DEVELOPING BLUE GROWTH POTENTIAL
innobluegrowth
@InnoBlueGrowth

NTUA – The Ideal Marina

INNOBLUEGROWTH TRANSNATIONAL CAPITALIZATION EVENT

"NEW TRENDS FOR THE YACHTING SECTOR IN THE MED AREA"

ADDRESSING ENVIRONMENTAL, SOCIAL AND ECONOMIC SUSTAINABILITY

11-12TH OCTOBER 2017, MARSEILLE

"Sustainable" Marina

Ms Liana Florou

School of Naval Architecture and Marine Engineering

National Technical University of Athens

Greece

NTUA – The Ideal Sustainable Marina

GENERALLY SPEAKING:

- **Who are the future users of the ideal Marina???**
  - **Next 20 years, yacht & cruise industry is expected to be an extremely positive market, with MED area remaining the 1st world destination for yacht pleasure!!!**
    - **Determine from the early stages of construction, the *main parking spots*: for mega yachts (above 75mtrs), for cruise/passenger ships, for super yachts (20-60mtrs) and for sailing/catamaran and light category boats.**

NTUA – The Ideal Sustainable Marina

Facilities.

- Environmental planning,
- Spacious Parking areas,
- Access ramps for disabled people,
- High standard of Security (CCTV, watch tower, cameras, drones) – *PRIVACY,*
- Stores and business offices,
- Single and 3-phase electricity,
- Fuel supply, grey and black water disposal
- Power supply, WiFi & 24hrs yacht assistance, and……
- *Mini golf electrical-cars for crew to move easily around the marina,*
- *Heliport for VIP passengers (with special attention to the location of the wind turbines ashore, so as landing/take off to be safe).*

NTUA – The Sustainable Marina

Innovation: new and sustainable methods of operation and use of technology to reduce energy consumption, water and waste.

a) Use of hotel(s) and other tourist providers with a **sustainability certification system** like Travelife or Green Key.

→Same can be done for Ports and Marinas

b) Energy consumption is measured, sources are indicated, and measures are adopted to minimize overall consumption, and encourage the **use of renewable energy**.

→ Linked to Blue Energy, Yachting

NTUA – The Sustainable Marina

- Solar panels with high technology chips, in buildings located in the marina.

- Desalination Units due to high demand of yachts for fresh water (various human activities onboard & washing down) & for Drinking water.

NTUA – The Sustainable Marina

The Ideal Marina can be energy independent:

Energy

Energy production

Reduction of energy consumption

NTUA – The Sustainable Marina – Best Practices

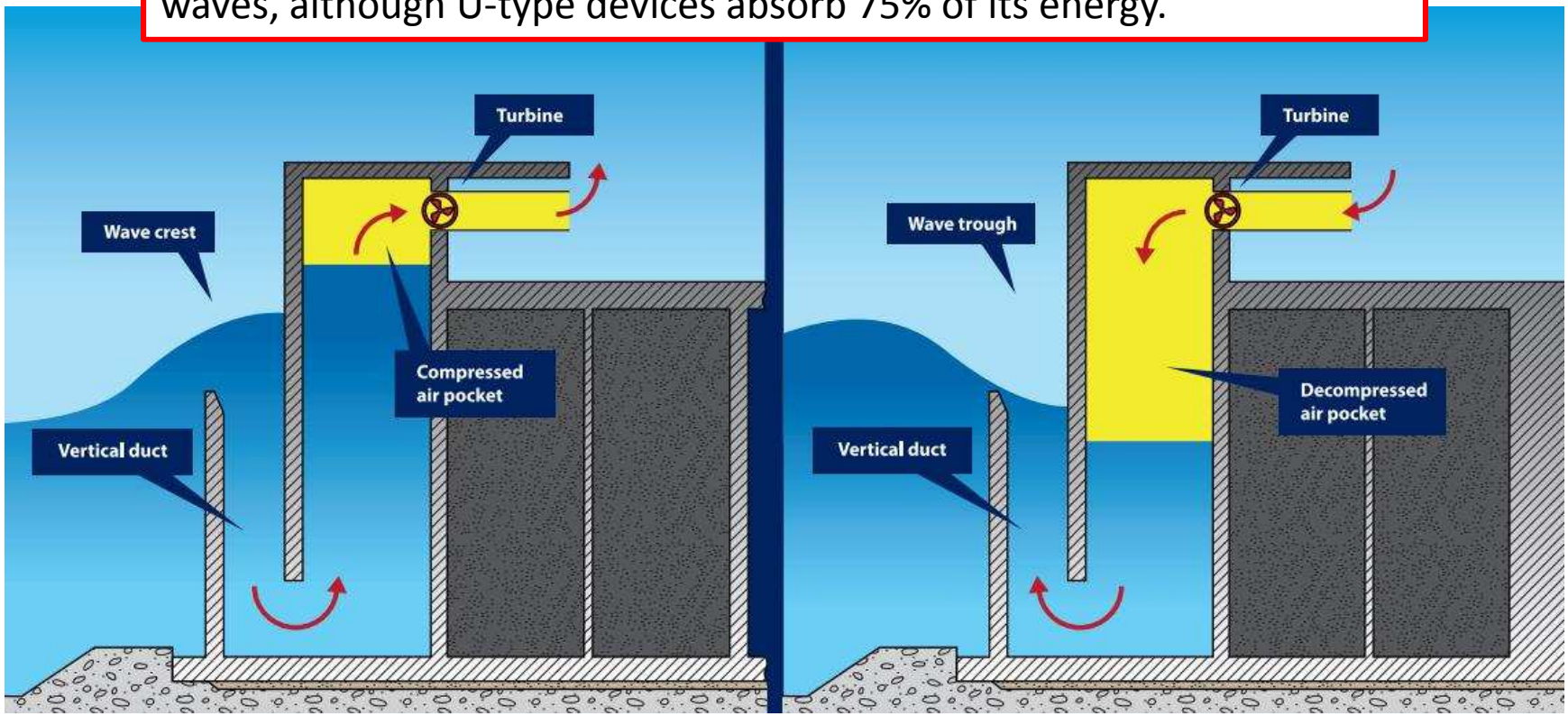
REsonant Wave Energy Converter 3 REWEC3

Credit: Wavenergy.it, Italy

NTUA – The Sustainable Marina – Best Practices

REsonant Wave Energy Converter 3 REWEC3 U-type (cont'd)

The generated electricity is only ~ 20% of the energy of the incident waves, although U-type devices absorb 75% of its energy.



Credit: Wavenergy.it, Italy

NTUA – The Sustainable Marina – Best Practices

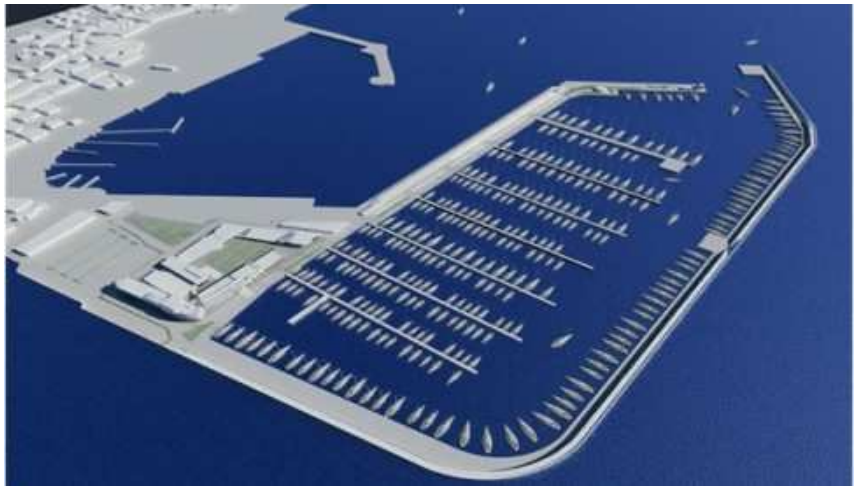
REsonant Wave Energy Converter 3 REWEC3 U-type (cont'd)

REWEC3 – Ongoing projects

Harbour of Salerno, Italy

Credit: Wavenergy.it, Italy

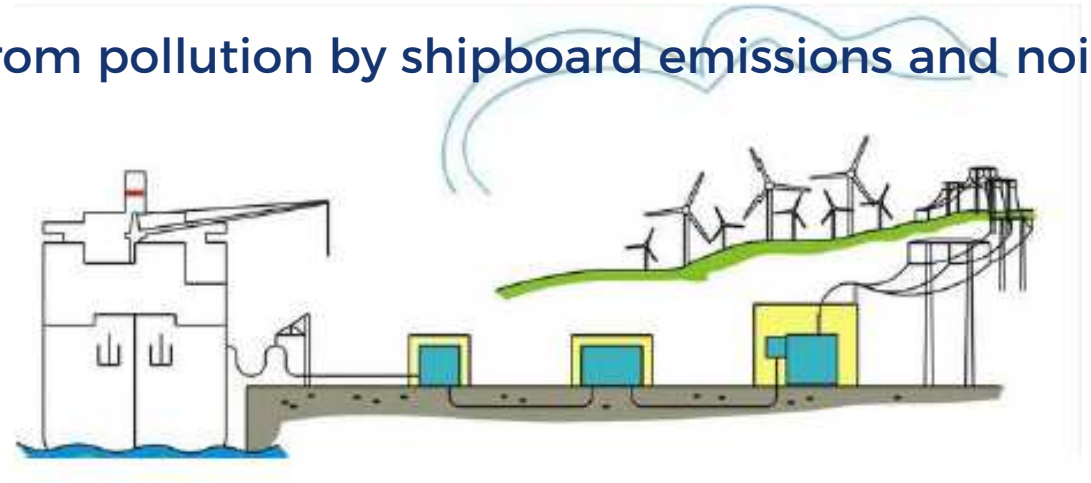
Marina di Cicerone, Formia, Italy



NTUA – The Sustainable Marina – Best Practices

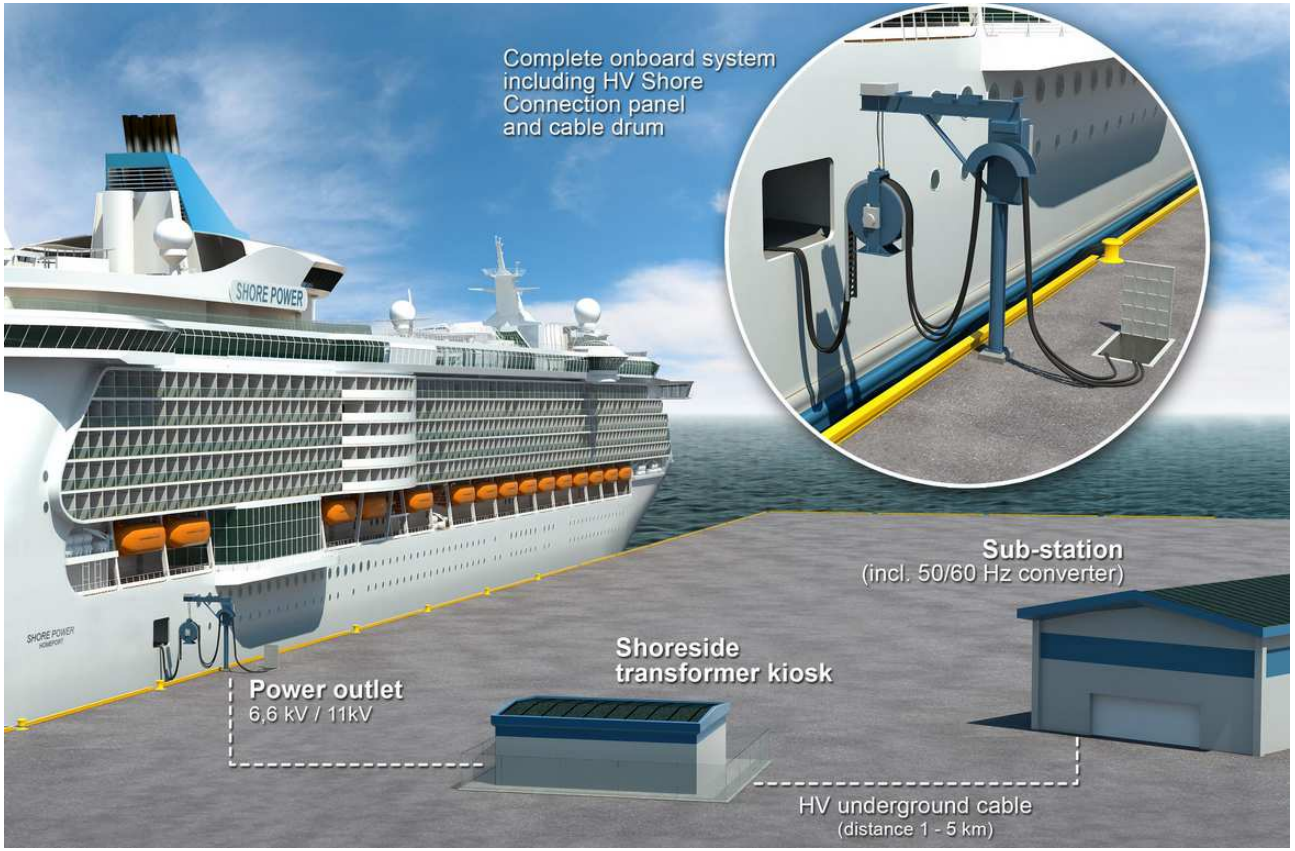
The Elemed project: Cold Ironing

- A term initially used by U.S. Navy, refers to connecting a ship to a shore-side power supply in port with the ship's machinery shut-down (main & auxiliary engines).
- Cold ironing does away with the need of burning fossil fuel on board ships at port
- The shore sourced power serves the ship's cargo handling machinery and hoteling requirements.
- Immediate relief from pollution by shipboard emissions and noise



The Elemed project

Two state of the art technologies



Cold Ironing

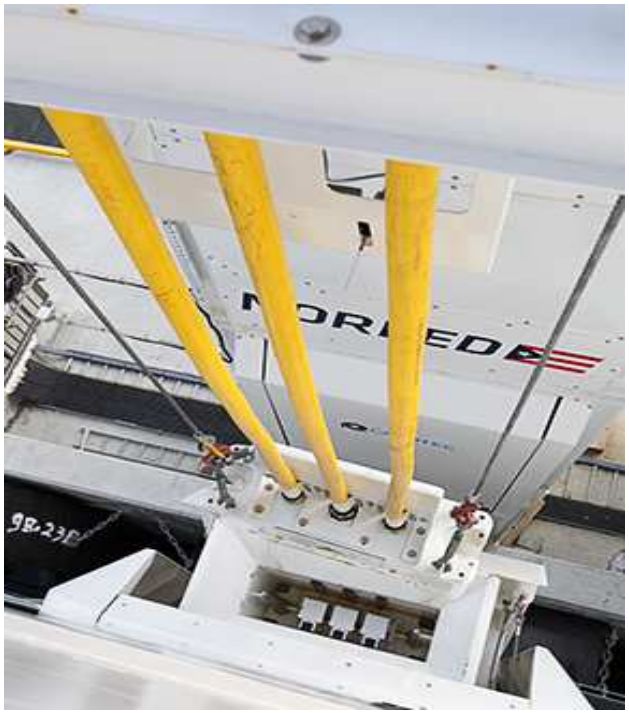
Electrification reduces emissions in port

NTUA – The Sustainable Marina – Best Practices

The Elemed project (cont'd)

Two state of the art technologies

Electric Bunkering



NTUA – The Sustainable Marina

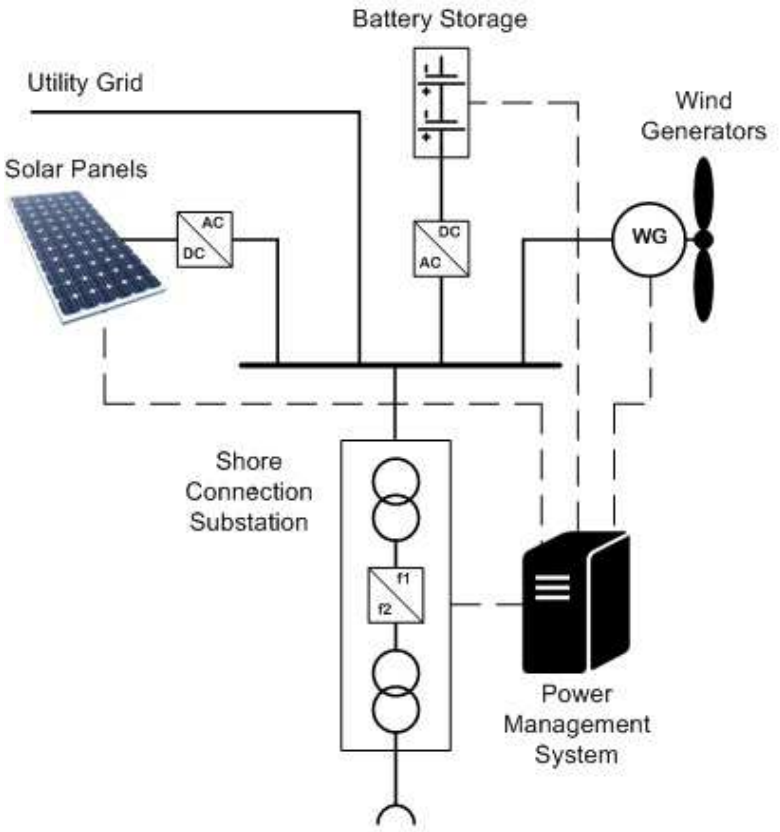
The ELEMED project (https://www.elemedproject.eu/)

The Port Authority of Kyllini

NTUA – The Sustainable Marina

Ports and marinas as energy hubs

- Constructions of hybrid electric driven shuttle ferries (for short sea transportation: battery based+ back up energy unit).
- Selective-collective co-operation of energy storage units deployed in port (and in ships interested).
- Interim solution of supplying islanded networks with electric energy based on environmentally friendly fuel (eg LNG): applicable to islands where the LNG network has not been deployed yet.
- Emergency supply of inland grids (e.g. in black-out situations of National Grids in Force Majeur cases).



NTUA – The Sustainable Marina

START DREAMING…….

Acknowledgments

- Assoc. Prof. John Prousalidis, National Technical University of Athens, Project: *The Elemed Project*
- Prof. Felice Arena and Assist. Prof. Alessandra Romolo, *Wavenergy.it, Italy*

Thank you for your attention

innobluegrowth

@InnoBlueGrowth

VISIT

https://blue-growth.interreg-med.eu/

@InnoBlueGrowth

innobluegrowth@gmail.com

Marseille, France 11th October, 2017