

TECNALIA's approach for a research project on Multi-use offshore platforms

Topic OCEAN.2011-1 Multi-use offshore platforms



Jose Luis Villate
Head of Marine Energy
TECNALIA

About TECNALIA



TECNALIA is a private technology corporation committed to “progress and well-being for all, generating value through scientific and technological research”.

4 Divisions – 20 Business Units

Aerospace, Agriculture, Automotive, Construction, Energy, Environment and Natural Resources, Foundry, Health, ICT, Industrial Systems, Marine Research, Urban and Industrial Environment...

2009 figures

141.5 M €
Turnover

1,636
Staff

4,059
Clients

56
Patents
filled

13
Patents
granted

Ongoing related projects



www.mesma.org



www.marina-platform.info

... and two additional FP7 projects on offshore renewable energy under negotiation

General Approach

Main uses of the platform:

1. Electricity generation:

- Wind
- Other RES?
Wave, currents, OTEC, salinity gradient, PV.

2. Aquaculture + fish processing

3. Store of goods (to facilitate transport operations)

- Provisioning of ships
- Intermediate unloading point

Key design considerations:

- Floating vs. fixed platform. If floating: transportable or not
- Multi vs. single wind turbine
- Aquaculture: one or several species (permanent or changeable)
- Fully automatic vs. personnel assisted



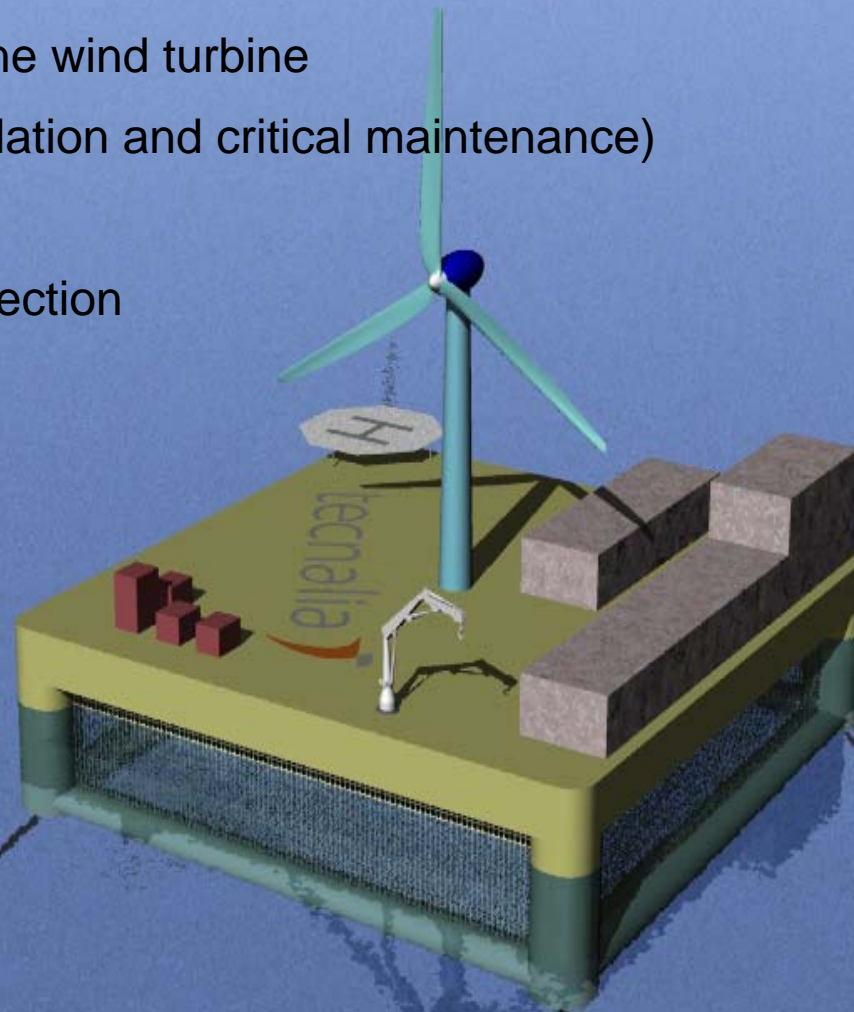
A schematic proposal

Floating platform with one wind turbine

Transportable (for installation and critical maintenance)

Easy grid-connection,

Possibility of array connection



Divided aquaculture areas

Space for fish processing (semi-automatic)

Loading / Unloading area

Is this profitable?

Key aspects → Multi-disciplinary approach

1. Site selection → Marine Spatial Planning

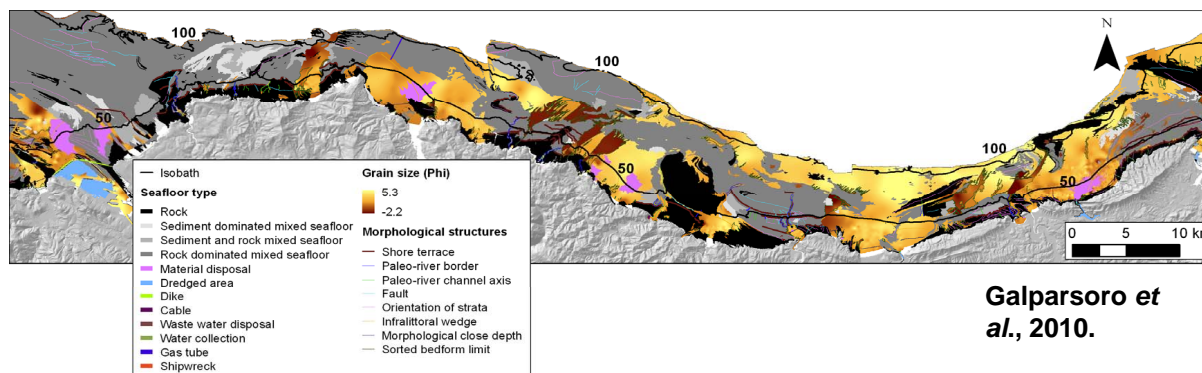
2. Electricity dispatch → Grid Integration of RES

3. Platform design → Offshore Engineering & Construction

4. Environmental issues → Marine Research

5. Aquaculture and Fish Processing → Marine Resource Technology

And of course, Economic viability → Business Development



Galparsoro *et al.*, 2010.

MSP is a practical way to create and establish a more rational organization of the use of marine space and the interactions between its uses, to balance demands for development with the need to protect marine ecosystems, and to achieve social and economic objectives in an open and planned way (UNESCO IOC, 2009).



Bilbao Exhibition Centre
6-8 October 2010

www.icoe2010bilbao.com

Thank you

Jose Luis Villate
Head of Marine Renewable Energy
Parque Tecnológico, 202
E-48170 ZAMUDIO
Tel. : +34 946002266
Fax: +34 946002299
e-mail: joseluis.villate@tecnalia.com