

The WATERBORNE^{TP} BLUE GROWTH WORKING GROUP

The Community of Maritime Engineering and Technologies to support
the Development of Industrial Activities at Sea

The Blue Growth Economy is a major opportunity for the Maritime Industry



François Marie DUTHOIT
Chair of the WATERBORNE TP
BLUE GROWTH working group

WATERBORNE^{TP}

sea THE FUTURE

● Oceans are planet's future

- The galloping world economy is reaching an alarming stage
- Oceans are recognised to be the only way to fulfil mankind's growing needs for food, energy, water, organic or mineral resources, etc.
- We are entering a new era, with the need to support Europe's economical and industrial development at sea, in a sustainable and secure way, respecting potential environment concerns

● The “Blue Growth Initiative” :

to harness the untapped potential

of Europe's oceans, seas and coasts,

for jobs and growth in the maritime sector.

→ Sea the Outer Space - This is similar to the space odyssey in the second half of the 20th century.

sea THE FUTURE

● This is a MAJOR OPPORTUNITY for the European maritime industry, and more particularly for the shipbuilding industry & equipment business

- At the time men were only passing through oceans to link from A to B, maritime transport and ships were a logical primary focus for the maritime industry. Since then, Oceans have become more than waterways (e.g. oil&gas)
- Oceans are now, and will become more and more a place to do things that were not possible on shore, a place for human activity, a place to live.

renewable energies
deep sea mining fish farming desalination biofuel
cruise tourism shipping biotechnologies fisheries
yachting & marinas aquaculture aggregate mining
offshore oil & gas pharmaceutical offshore hubs
maritime security

Our Job →

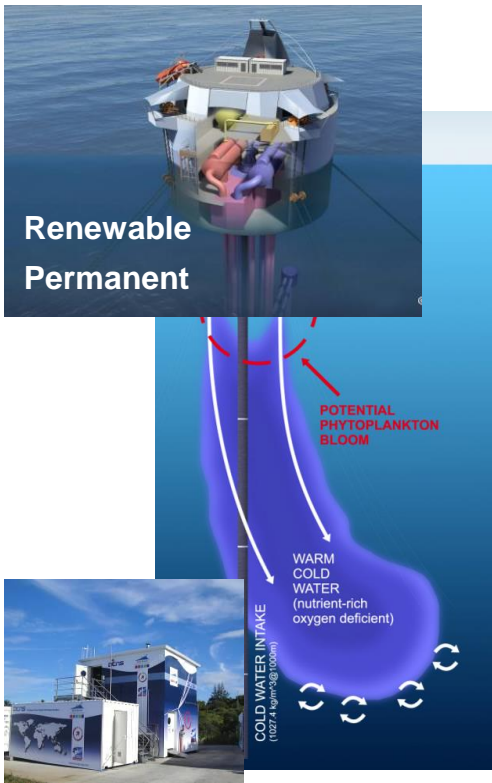
To provide whoever wants to do business at sea with the
systems, products, tooling, equipment, engineering, technology,
which they need to do it.

Formerly, just ships, now much more !

The nearest opportunity : Renewable Marine Energy...

OTEC

Renewable
Permanent



Floating Wind Turbines



Tidal

Invisible
Predictable

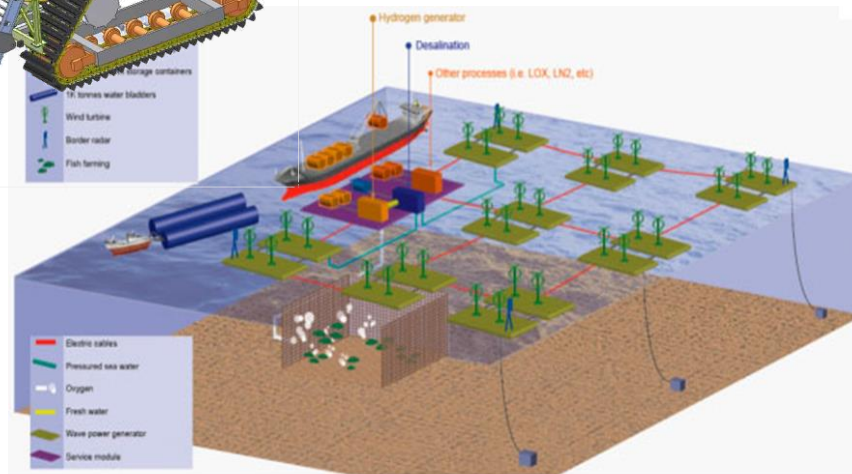
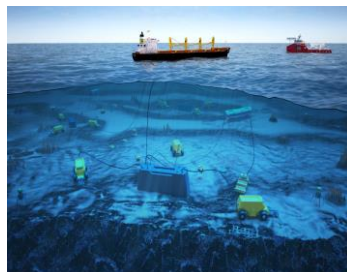
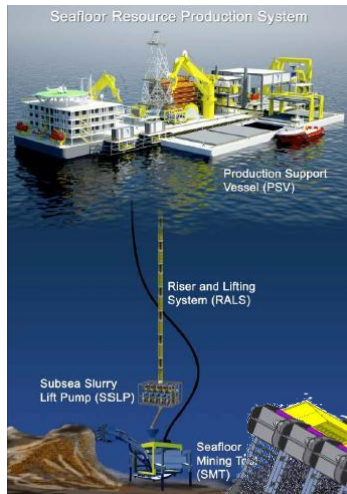


Wave Energy

huge
potential
Worldwide



... and beyond : Seaborne and Subsea Industrial Activities



H2OCEAN CONCEPT (©Copyright 2011 by VirtualPIE Ltd)



The way forward : job creation

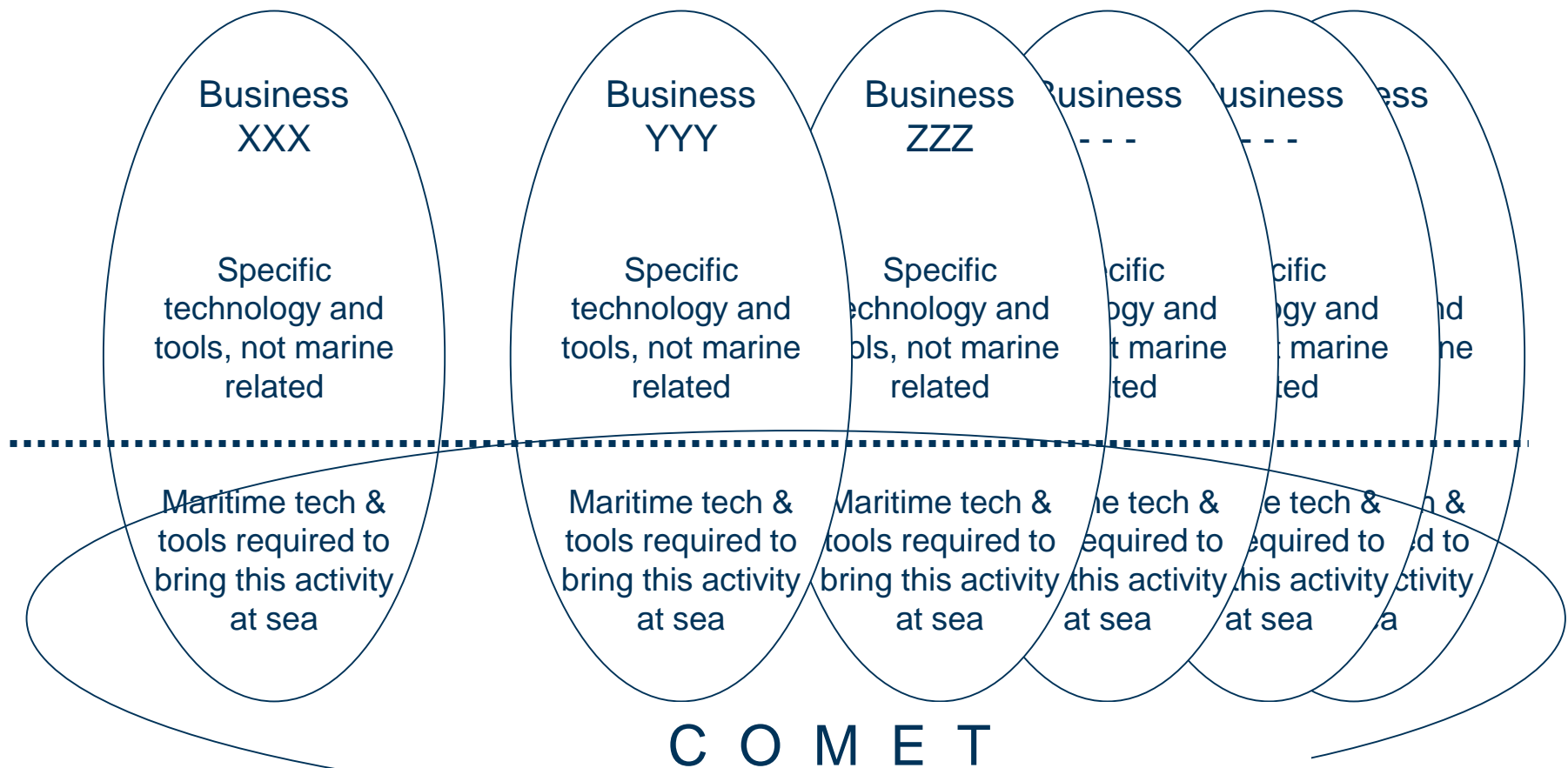
Where ? When ? Who pays ?

Space Odyssey : a successful story...
... which is worth replicating



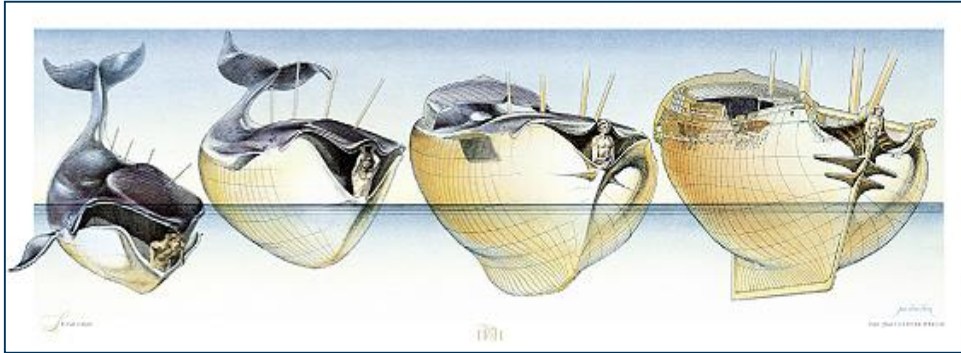
An INNOVATIVE APPROACH

The « Maritime Engineering & Technology » Community

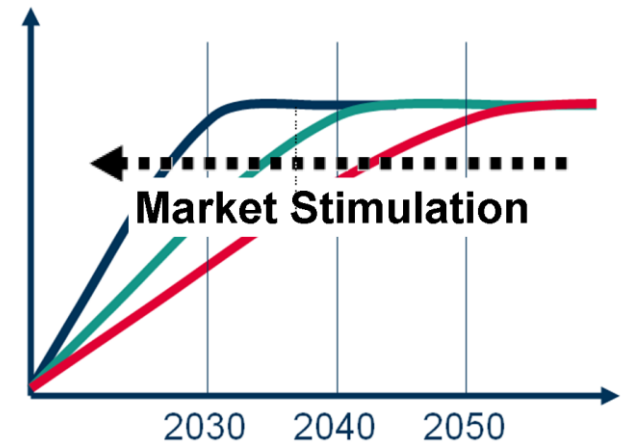


Community of Maritime Engineering & Technology

Strategy



- **Market stimulation**
 - Cooperation, not competition
- **Enabling actions (*parallel, not sequential*)**
 - 1 – Exploration, resource evaluation and monitoring
 - 2 – Environmental baseline and impact assessment
 - 3 – Technologies and engineering
 - 4 – Acceptability, Regulation and Legal issues
- **Large Scale Prototype / Demonstration / Test Base**
 - I.S.S. → International Sea Station
 - Synergy with actual project (*e.g. logistic hub off French Guiana, or deep sea mining in Wallis & Futuna islands*)



Where the money goes... *facts & figures*

The European Maritime Industry can't do it on its own

Public Research - France

Body	Rev. €M	Staff
CEA	4300	16000
CNRS	3400	25000
CNES	1700	2500
INRA	850	8500
IFPEN	300	1600
INRIA	270	4300
ONERA	250	2100
IFREMER	225	1300
IFSTTAR	110	1200
TOTAL	11405	62500

Turnover of the European Industry

(Def + Com.)

Space → €6.5bn

Shipbuilding → €23.2bn

Aeronautics → €138.7bn

Car manufacturing → €843.4bn

(Car manuf. R&D Investment €32.3bn)

Annual European effort for Space Engineering & Technologies :

ESA → €4.4bn

→ Plea for a
« European priority »
On Sustainable
Blue Growth





Blue Growth Working Group



Background slides

Examples of Seaborne and Subsea Projects



European 7th Framework and Horizon 2020 programmes



- **2013 – FP7 – The European Commission has launched 3 parallel projects on Multi-use Offshore Platforms**



18 partners



19 partners



29 partners

- **2015 – HORIZON 2020 – the MARIBE Coordination & Support Action (Marine Investment for the Blue Economy) .**



J-DeEP : Japan Offshore Design & Engineering Platform

NEWS : JAPAN TO BUILD “MEGA-PLATFORM” OFF BRAZIL COAST

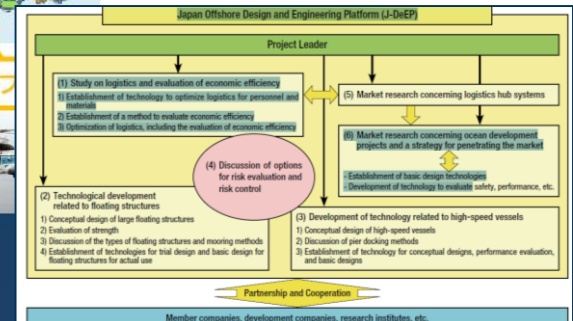
THE JAPANESE GOVERNMENT AND A CONSORTIUM OF BUSINESSES ARE PLANNING TO BUILD A GIANT FLOATING STRUCTURE OFF THE COAST OF BRAZIL WHICH WILL ACCOMMODATE 200 WORKERS FROM OIL AND GAS PLATFORMS.



1. Setting policy targets and development of laws (political initiative);
2. Building a foundation (government initiatives supported by the private sector);
3. Fostering projects for commercialization through applied use (private-public partnerships);
4. Encouraging commercialization and reinforcement of international competitiveness (private initiatives supported by the public sector).



ロジスティック・ハブ方式のイメージ

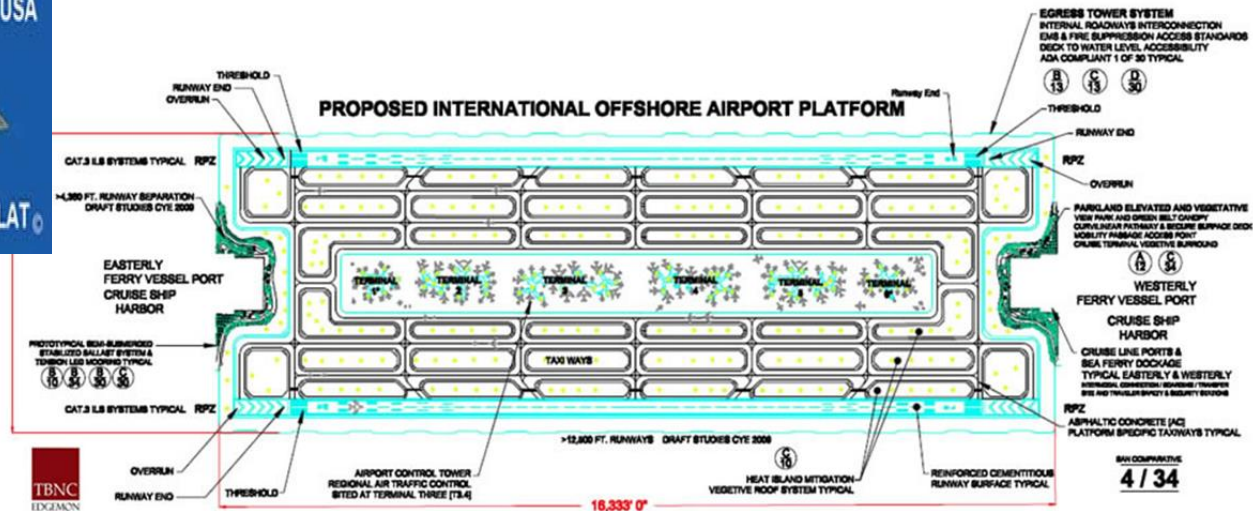


San Diego Floating Airport



TBNC envisions an ocean-based multi-dimensional and multi-purpose infrastructure facility, 250 hectares, permanently-moored by 400m depth approximately 10 miles offshore San Diego within the Southern California Bight.

This project will solve the air transportation and water challenges that California is facing today. It is in alignment with California's long term plan to protect the ocean while developing needed infrastructure and alternative energies.



REPRESENTATIONAL AIR TRAFFIC CONTROL PROCEDURES AT SAN DIEGO INTERNATIONAL AIRPORT [SDIA]



POMU – Scalable and Modular Floating Offshore Logistic Platform

- 40 miles off the French Guiana coast
- Extension of the skimpy port of Cayenne
 - 15 hectares of container hub (200,000 box/year)
 - 4 hectares of Oil&Gas logistic facility
 - 3 x 200m docking spots, and 2Hectares repair yard
 - Support base for maritime security and fishing
 - 20,000m2 office space, accommodation, storage, scientific labs, etc.
 - 100MW energy conversion, waste management
 - Integrated information and communication systems



- Safe
 - to guarantee the development of maritime industrial activities in the best conditions
- Cost-efficient
 - compared to onshore solutions, or offshore reduced scale mono activity solutions
- Sustainable
 - integration of an innovative circular economy approach, fulfilling environmental and societal requirements

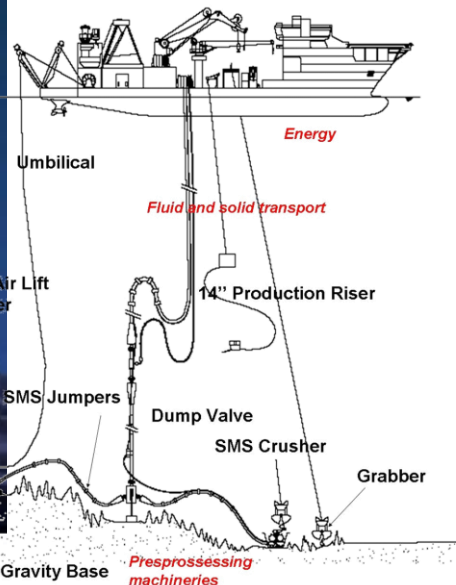


Safe and Sustainable Development of Subsea Activities



FRANCE - Deep sea mining project – Wallis & Futuna Islands

MHWirth - Deep sea mining concept for manganese nodules



GERMANY – DSMA Deep Sea Mining Alliance