

OTEC AFRICA Oct 15th -16th 2013

BORAS - SWEDEN

sea THE FUTURE

DCNS

OTEC is now !

*OTEC is a turnkey bankable industrial reality
ready for the tropical areas*

*DCNS - Ocean Energy Business Unit
Frederic CHINO, Sales & Marketing Manager*



DCNS at glance



2,9 billion
euros in
revenue

14 billion
euros in
order book

13 183
employees

1/3 revenue
from int'l sales

2012 key figures

International presence



French State **64 %***
 Thales **35 %**
 DCNS Employees **1 %**



* Ownership accurate to the nearest unit

France

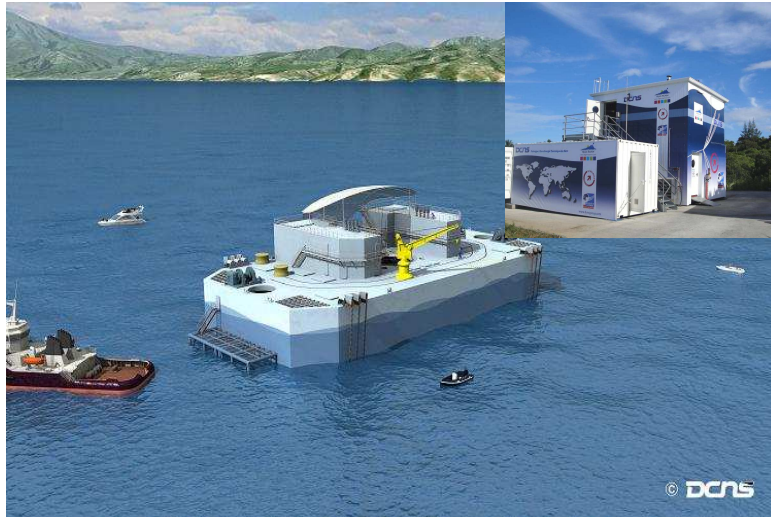
- DCN International 100 %
- Défense Environnement Services 49 %
- Sirehna 100 %
- Winacelles 34,1 %
- TNF 100 %
- Principia 33,33 %
- Eurosystav 50 %
- GIEE Euroslat 33 %
- Horizon SAS 50 %
- GIEE Eurotorp 26 %

DCNS - Communication Department - March 2017 - © DCNS

DNCS invests in 4 ocean technologies



OTEC



Floating wind turbine



Tidal turbine



Wave converter



Strategic positioning on Ocean Energy

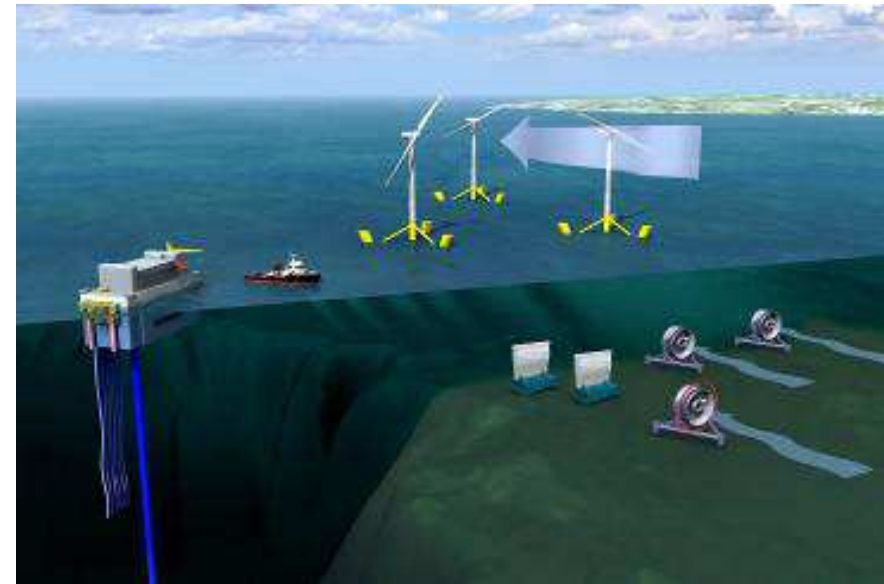


Provider of added-value

- Ocean Thermal Energy Conversion, Floating Wind Turbines, Tidal and Waves converters
- Know-how, competencies and industrial outstanding facilities

EPCI prime contractor : turnkey solutions and services to Utilities

- Experience in engineering and maintenance of complex naval systems
- Management of complex industrial projects and programs
- Scientific capabilities with DCNS Research
- International partnerships



OTEC is now

OTEC is a baseload renewable energy

- non-intermittent flow of renewable power to the grid
- possible additional modules for air conditioning and fresh water

OTEC is no longer R&D, OTEC is reliable & ready to deploy !

Major industrial groups are ready to offer turnkey OTEC power plant, giving guarantees on performances

Commercial projects will be announced in the coming months, starting with onshore 4to6MW units, followed by offshore 30MW+ power plants

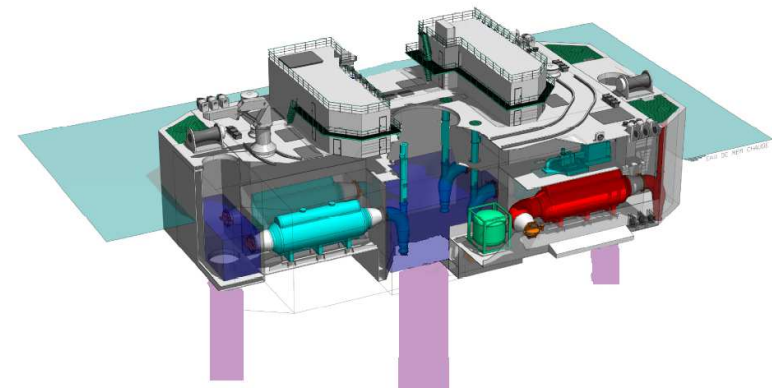
LCOE (Leverage Cost Of Energy) will range from \$.25 to \$.45 cents / kWh (OTEC is site specific)

Bankers are giving green light to finance OTEC projects because of 2 reasons :

- energy is baseload
- bankable industrial companies are covering risks committing c performance and availability of power plants in their contract:

OTEC will bring green added value to territories

- new academic programs
- employements
- activity
- visibility

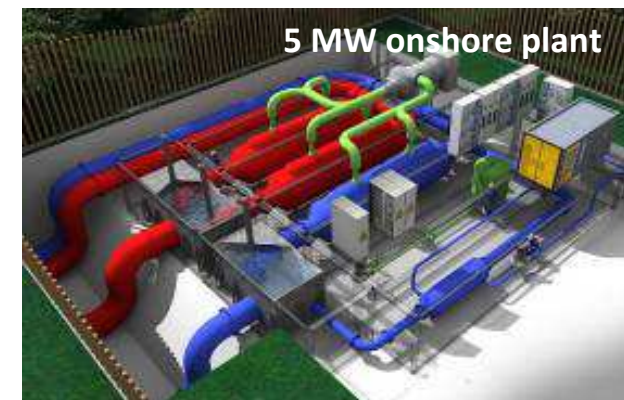


DCNS OTEC roadmap & resources

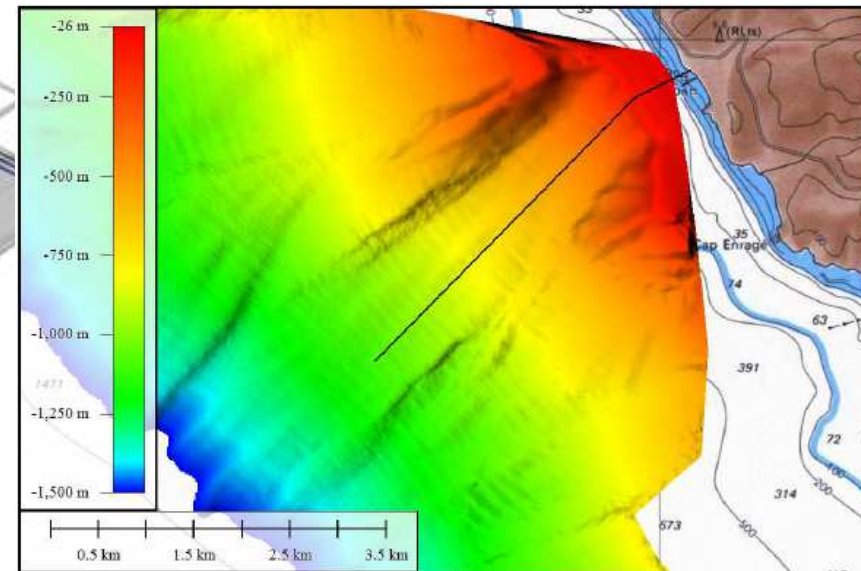
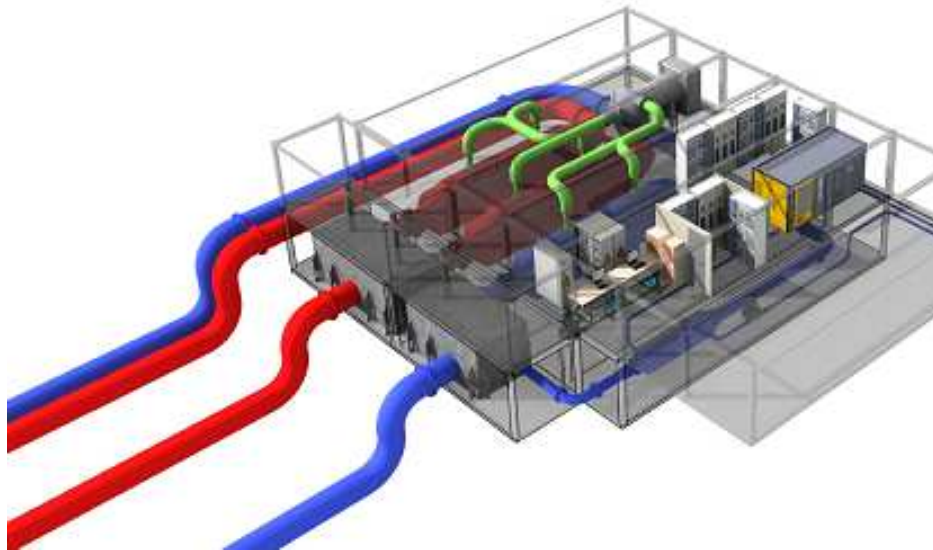
Ambitious development budget since 2008

30 team members Thermodynamical engineering & system engineering, Naval architects, Heat exchangers, Risers, Mooring system, Ocean survey, ...)

- 2008 : pre-feasibility study : Martinique
- 2009 : feasibility study Region "La Réunion"
- 2010: Tahiti Feasibility studies
- 2010 -2011: contract for a land based prototype
- 2011/2013 : MoU's with export utilities and SPV's
- 2012-2017 : Design of a 16MW offshore pilot for Martinique
- 2013 : OTEC / SWAC combined cycle project developments
- 1st onshore 4-5MW OTEC plant to be announced
- 2014: first offshore OTEC project to be announced



Onshore 5 MW OTEC plant project milestones



Bankable turnkey industrial reality

