



***A research and development Institute  
offering scientific and technological facilities  
for an industrial development***

*Marc BOEUF, Research and Development Manager*

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### Commitments to reduce CO2 emissions

- European commitment (20/20/20)
- Grenelle de l'environnement (23% RE, 3% MRE)

### A very large energy potential worldwide

3 600 TWh/yr of technical potential by 2030  
(France electrical energy generation: 600 TWh/yr)



Growing markets, in Europe and worldwide

**210 G€** investments in Europe by 2020

An emerging industrial sector

**150 000** direct and indirect jobs by 2020  
(MRE European market)



Objectives of a dedicated  
institute

Scope

## Build a world-class industrial leadership

- bring leading sectors together (*off-shore oil & gas, shipbuilding, utilities*)
- promote the sustainability of the technologies (*European criteria*)

## Consolidate a scientific excellence

- multidisciplinary teams (*as opposed to today's specialized teams*)
- public-private synergies (*various level of technology development and maturity*)

## Validate the technologies and reduce their costs

- prototypes/pre-commercial units and arrays (*a range of services*)
- shared infrastructure (*numerical modeling, test benches, test sites*)

## Support the industry by education and training

- define the appropriate training programs required
- disseminate learning tools

**Offshore Wind**

**Tidal stream energy**

**Tidal range energy**

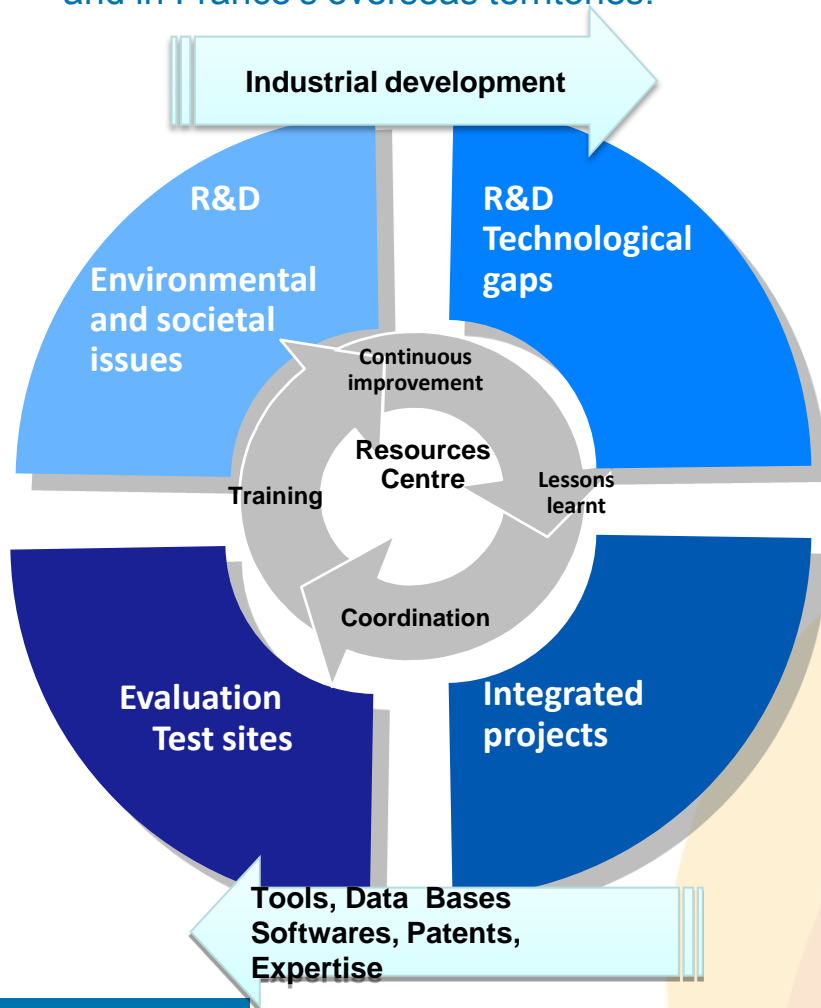
**Wave energy**

**Ocean thermal energy conversion**

# A single institute offering a complete range of services

*R&D, VALIDATION, EXPERTISE, TRAINING, DISSEMINATION*

Public-Private Partnership involving more than 30 companies and 20 public entities representing all the key players of the MRE sector across the different coastal regions mainland and in France's overseas territories.



70 researchers, engineers, technicians  
142 M€ over 10 years  
5 test sites



*Work on technological gaps*

*Resource assessment  
Sustainability of conversion systems  
Conversion efficiency  
Commissioning, maintenance, de-commissioning  
Life cycle analysis  
Network integration  
Energy storage  
Industrial process*



*Solve environmental and societal issues*

*Environmental impact  
Acceptability by the other marine activities  
Law & regulation  
Cost-benefits analysis  
MRE business models in various paradigms by-products*

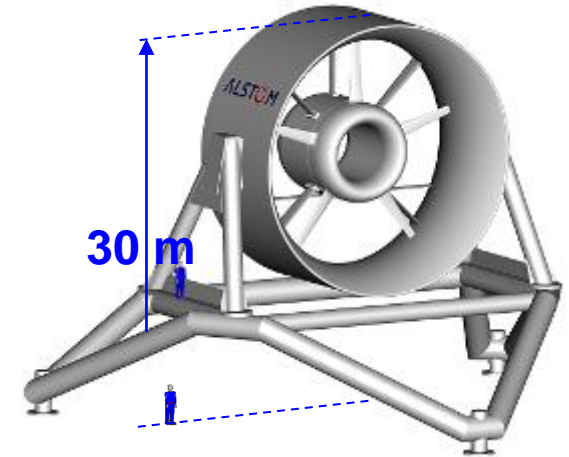
### Private

### Publics



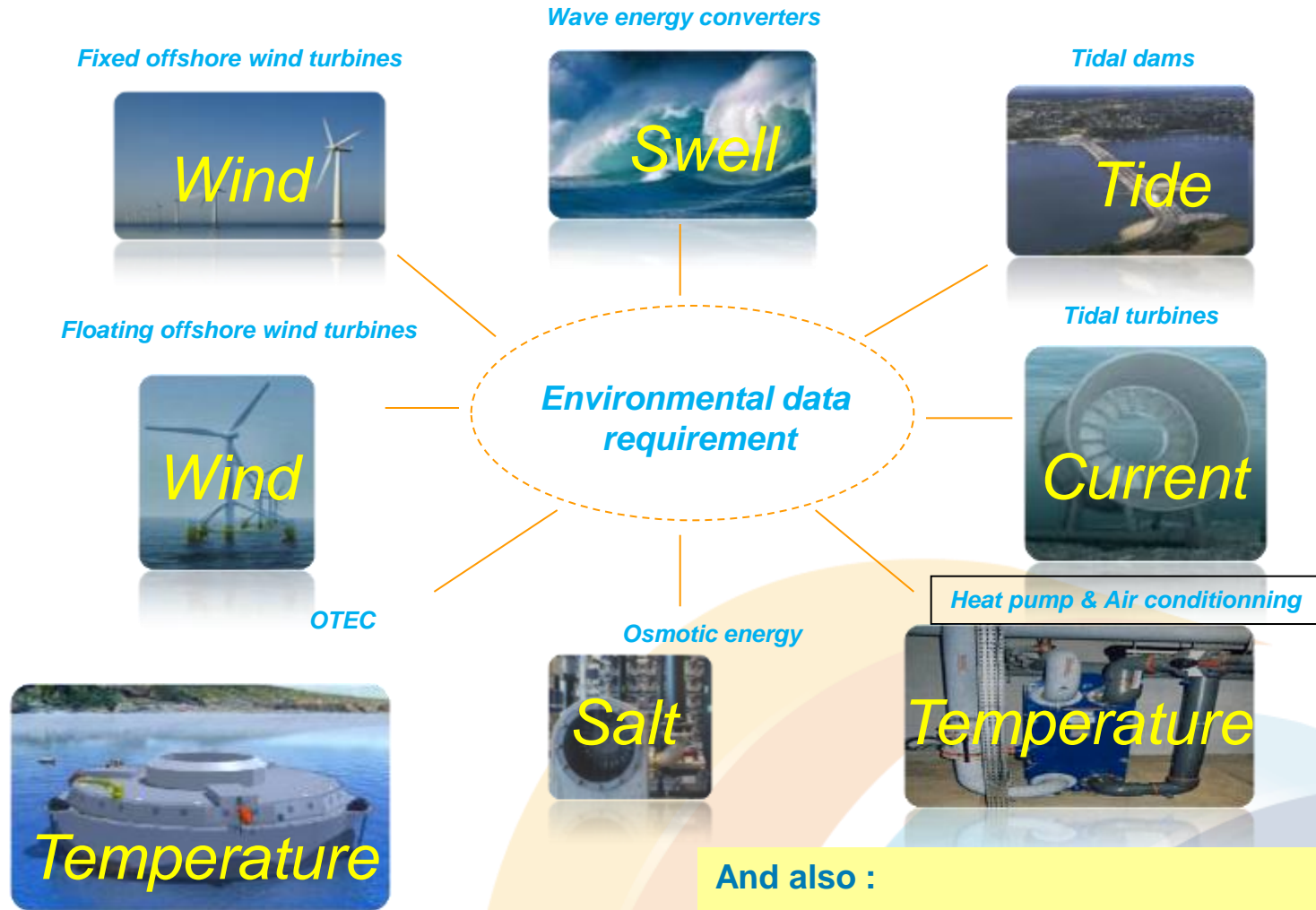
*Estimate and plan the MRE resource*

*Environmental data to design and to size technologies*



*The best knowledge of  
environmental impacts*

*Environmental monitoring  
during the exploitation*



**And also :**

- Bathymetry, sedimentology, turbidity
- Biodiversity, biological data (fauna and flora)
- geochemical data, ice drift,...





*[www.france-energies-marines.org](http://www.france-energies-marines.org)*

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