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## Offshore Renewable Energy Conversion platforms - Coordination Action

a European coordination action on the  
combined offshore wind and ocean energy  
resources, technologies and markets

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# ORECCA: shaping the future of offshore renewables

- Improve the information exchange and promotion of specific research cooperation in this field between academia and industry, public and private actors.
- Create an efficient and focused framework for knowledge sharing
- Involve and stimulate all the relevant stakeholder groups in Europe
  - Resource: magnitude, characteristics (depth...), constraints, ...
  - Market development: historical and projected
  - Platform technologies and economics
  - National policies, incentives and investment opportunities
  - Supply chain challenges: logistics, vessels, ports, offshore grid...
  - Synergies and combined technologies



- Not covered here: device technology, jobs created, emissions avoided...

# Ocean Renewable Energy Conversion Platform Coordination Action: Overview

## ■ Definition of 3 target areas

- North Sea + Baltic Sea
- Atlantic Ocean
- Medit. & Black Sea

## ■ Definition of 3 stake holder groups

- investors and technology providers
- research organization, technology developers
- (research) policy makers; the EC

## ■ Duration: 18 month

## ■ 1.6 MEuro EC funding

## ■ 28 Partners, 204 PM

## ■ USA (NREL), Canada (Uni Waterloo)

## ■ Cross-sectoral approach (Oil&Gas, Offshore Wind, Wave&Tidal)

## ■ Pan European Pan technology roadmap



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# ORECCA work package structure

**WP1** - Project Management,  
(Fh IWES)

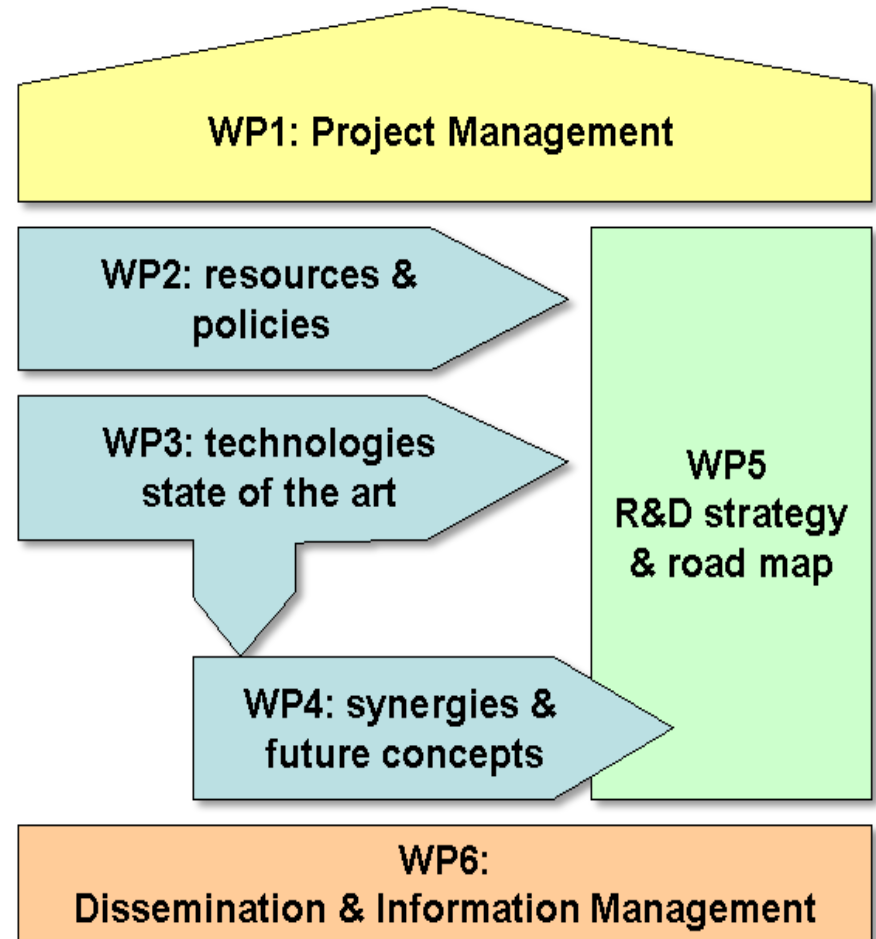
**WP2** – Resource characterisation,  
environmental impact, financial and  
legislative framework for the target areas  
(leader HMRC- Ireland)

**WP3**– Analysis and benchmark of current  
technology and industrial state of the art in  
the sectors of offshore wind, ocean energy  
and oil and gas (ECN)

**WP4** Identification of potential synergies,  
innovative designs and concepts for the  
combined use in multipurpose platforms  
(RSE - Italy)

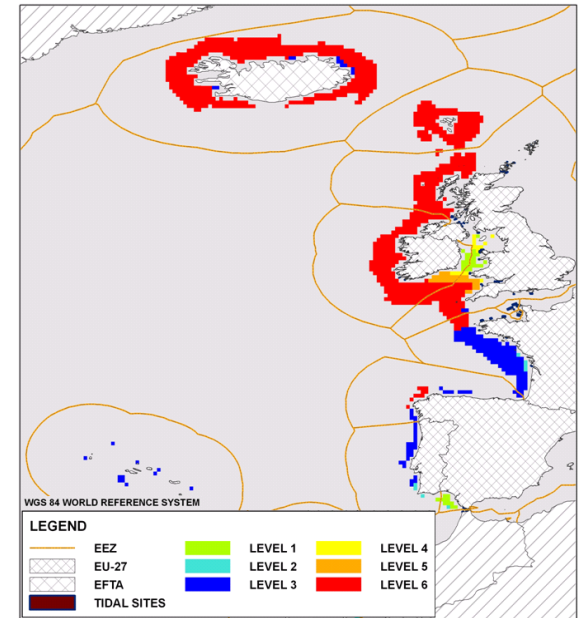
**WP5** – Development of integrated road maps  
for the stakeholder groups (UEDIN -UK)

**WP6** – Knowledge management and  
dissemination (FondPoly di Milano - Italy)



# What ORECCA delivers

- Resource information (maps + WEBGIS) for the 3 target areas (Wind, Wave, Tidal sites) as well as combined resources
- Vessel and port database
- Project pipeline for offshore wind, wave and tidal
- **14 reports (total >>1000 pages):**
  - Information on funding policies and incentives, as well as investment opportunities
  - Technology state of the art of platform technologies (Oil & Gas, Wind, OE) for realised and planned installations
  - Grid integration challenges and offshore grid initiatives
  - Design tools and standards
  - Offshore supply chain and infrastructure (ports, vessels etc.)
  - Synergies, hybrids and multipurpose platforms
  - Pan European Pan technology OREC platform road map



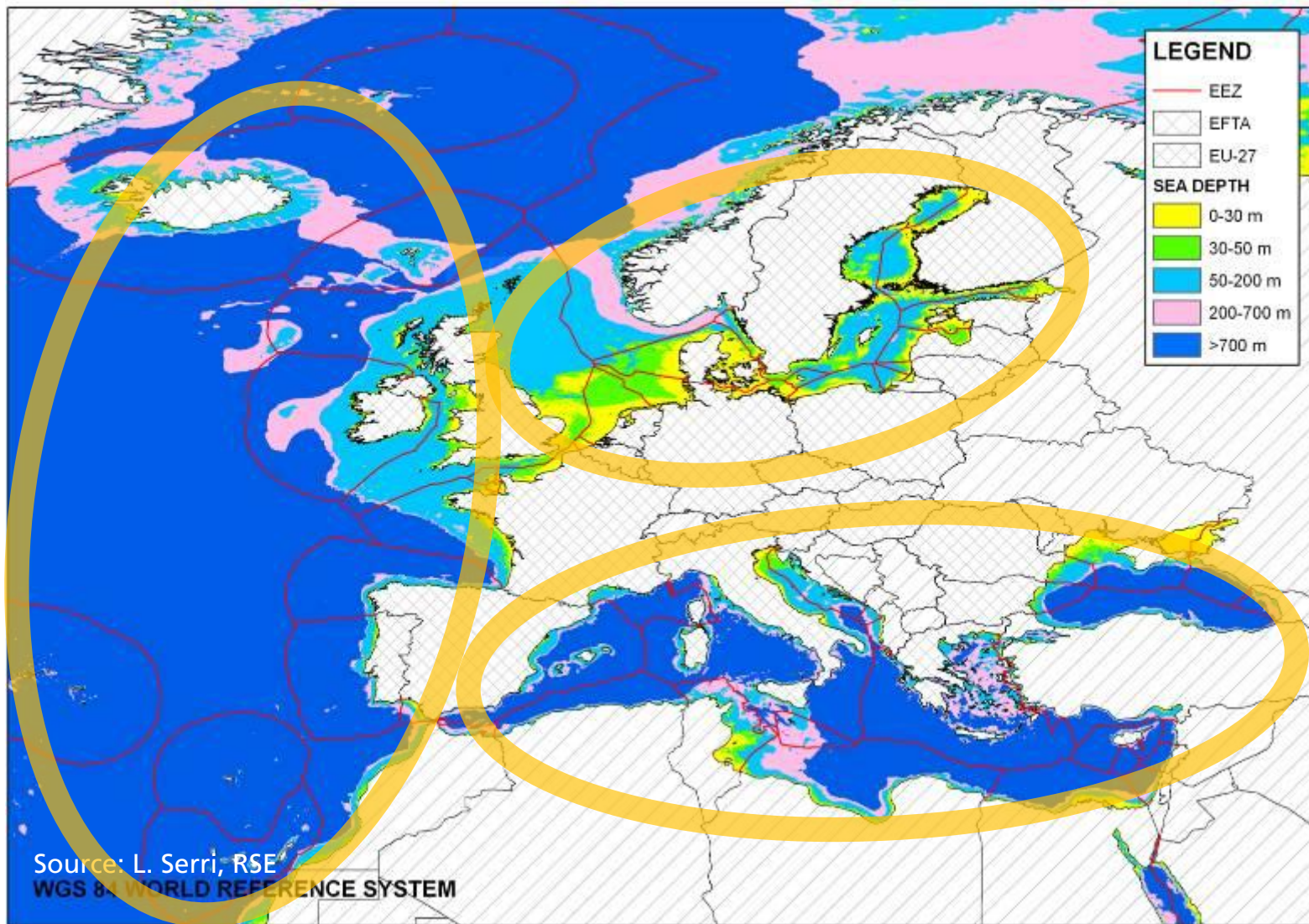
# How ORECCA delivered

> 200 experts  
involved



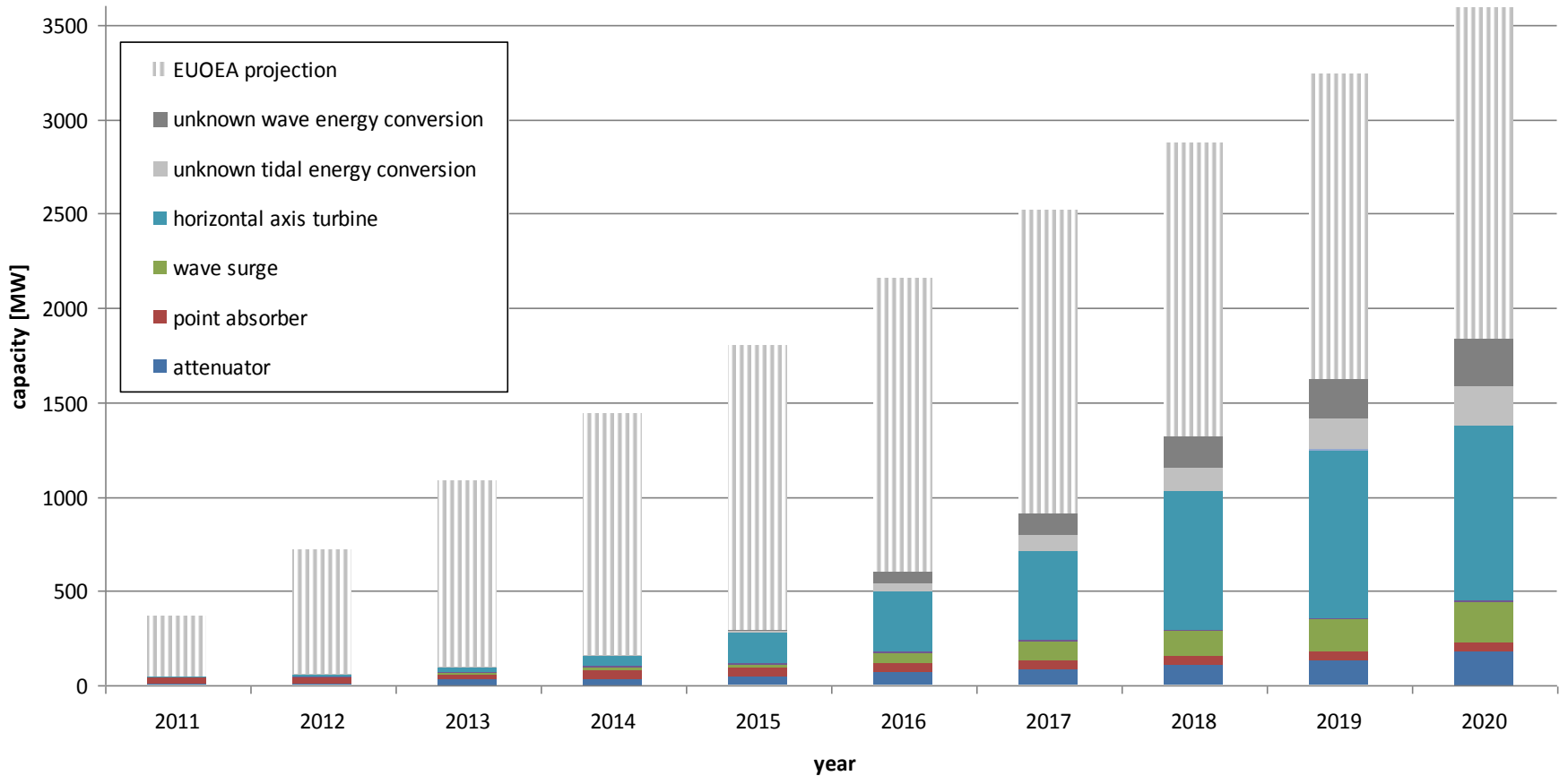
- 2 workshops (The Hague, 11/2010; Milano 6/2011)
- Conference side events (EWEA 2011 & OE strategy days in Brussels)
- Presentations during conferences (EWEA, ICOE, GMREC, WREC, Agrion (online), Santander, OE Strategy days, Supergen Marine...)
- Project infos
- Web site: will provide all reports etc. online
- Report reviews –internal and external
- Communication with interest groups and other initiatives IEA, EUOEA, EWEA, TPWind...
- Parallel research project MARINA Platform

# Geographical scope: European EEZs



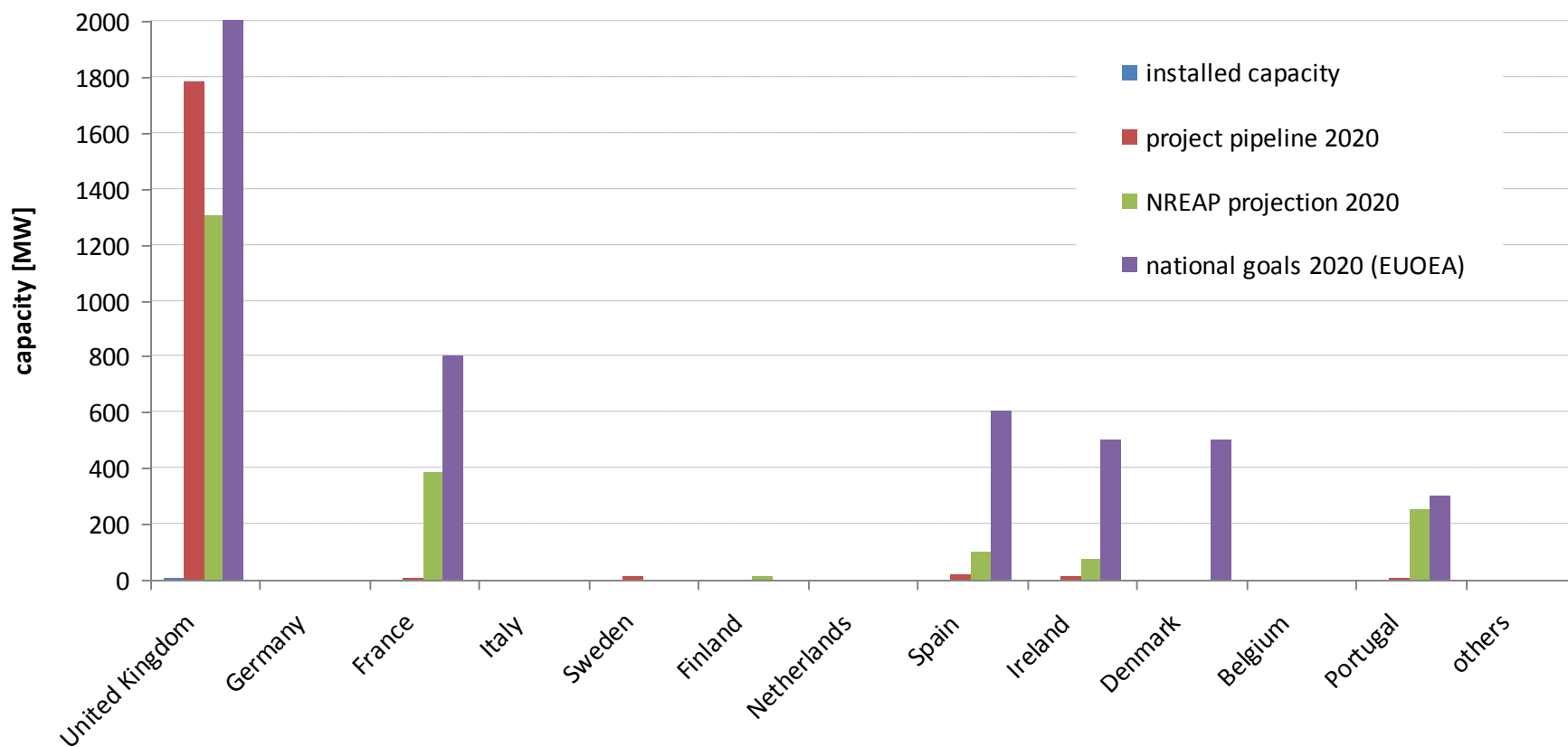
# Ocean Energy projects "in the pipeline"

←→ Pentland Firth, CE Round 1





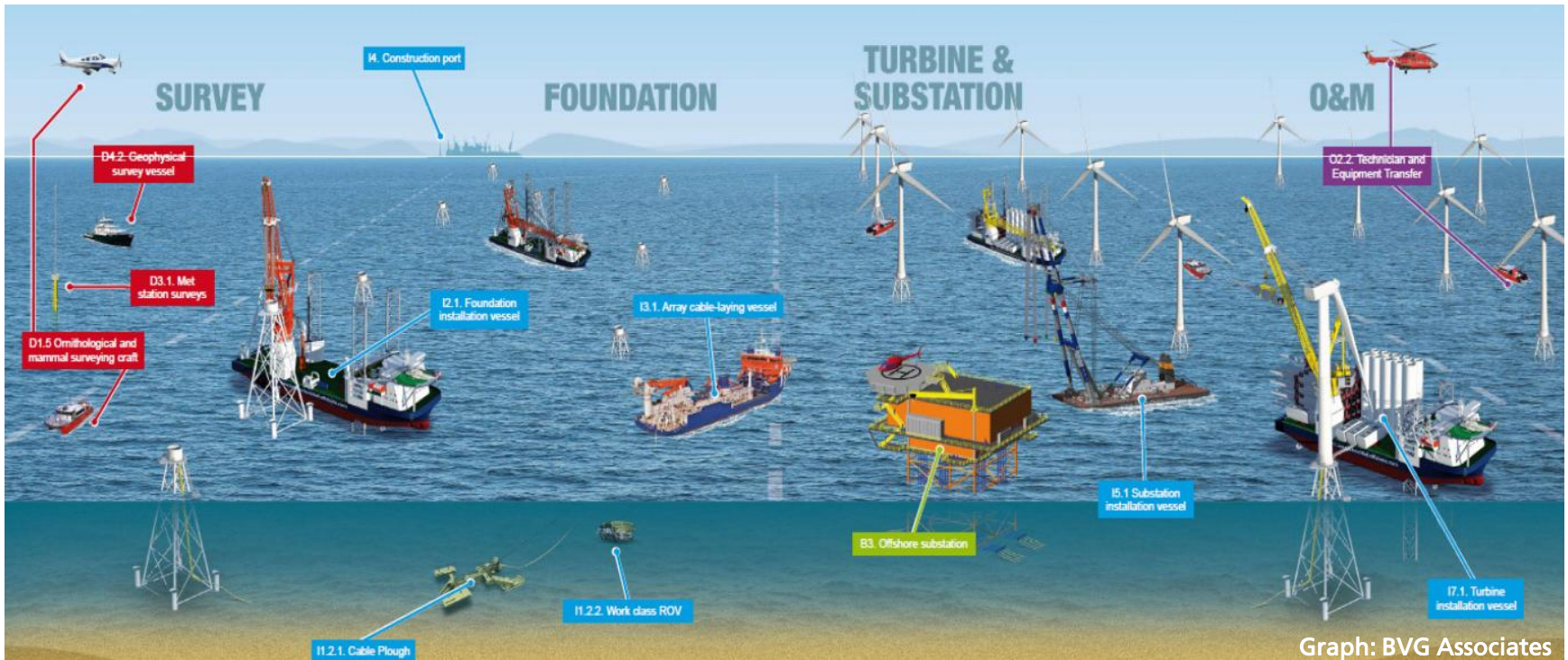
# Ocean Energy project pipeline and NREAP data by country



**EU 27 NREAP targets for 2020: 1880 MW, 6 TWh/a**

**UK: 1300 MW, Pt: 250 MW, F:140 MW, ES: 100 MW, IRE: 75 MW, It: 3 MW**

# Offshore supply chain and infrastructure



Pre-Installation	Installation		Operation
Surveys Geot&Env.	Foundation	Turbine	O&M visits
	Grid	Substation	
Port A	Ports B+C		Port A
Service Vessels	Installation Vessels & Equipment, Offshore Grid		Service Vessels

# Synergies, hybrids and combined platforms

- Research driven approach
- Growing industrial interest during ORECCA
- “Creative brainstorming” during workshops vs real expertise
- Expectations, visions and priorities vs real knowledge
  - Spatial synergies: co-location
  - Installation and infrastructure commonalities
    - Common grid connection
    - Installation equipment (vessels, jackups, ...)
    - port infrastructure
    - O&M synergies
  - Offshore Renewable Hybrids
  - Process engineering synergies: hydrogen, desalination, other non-electrical applications
  - Multipurpose Platform Concepts, “Energy Islands”
    - > “Oceans of Tomorrow” EU projects

# A pan European pan technology OREC platform road map

Roadmap's 5 principal streams:

- Resource
- Finance
- Technology
- Infrastructure
- Environment, Regulation & Legislation

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