

Knowledge Networks to Facilitate Marine Renewable Energy Development

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Current status of the UK offshore renewable energy sector

- 18 operational offshore windfarms = 3.3GW
- 10% of UK demand during December 2013
- 5.6 GW offshore wind in planning
- 39 wave and tidal sites awarded (=1.8GW)
- 10x expansion in device scale testing at EMEC
- Demo tidal arrays consented (Siemens / Atlantis)
- 1/25 scale / full scale floating wind
- hybrid schemes in development

BUT significant uncertainty.....

Ex : Renewable UK 2013 status report

The collage features logos and images for the following companies and technologies:

- bluewater**: Images of offshore wind turbines.
- Kawasaki**: Images of offshore wind turbines.
- VOITH**: Images of offshore wind turbines.
- Wello** DIRECT CONVERSION: Images of wave energy converters.
- Seatricity**: Images of wave energy converters.
- ANDRITZ Hydro Hammerfest**: Images of tidal turbines.
- Scotrenewables** Tidal Power Ltd: Images of tidal turbines.
- ATLANTIS RESOURCES CORPORATION**: Images of tidal turbines.
- Tidal Generation**: Images of tidal turbines.
- AQUAMARINE POWER** GREEN ENERGY OUT OF THE BLUE: Images of wave energy converters.
- openhydro** tidal technology: Images of tidal turbines.
- pelamis** wave power: Images of wave energy converters.
- SCOTTISHPOWER RENEWABLES e-on**: Images of wave energy converters.

The collage is organized into a grid with columns representing time periods: 2003/4, 2006/7, 2008/9, 2009/10, 2010/11, 2011/12, and 2013 onwards.

2003/4

2006/7

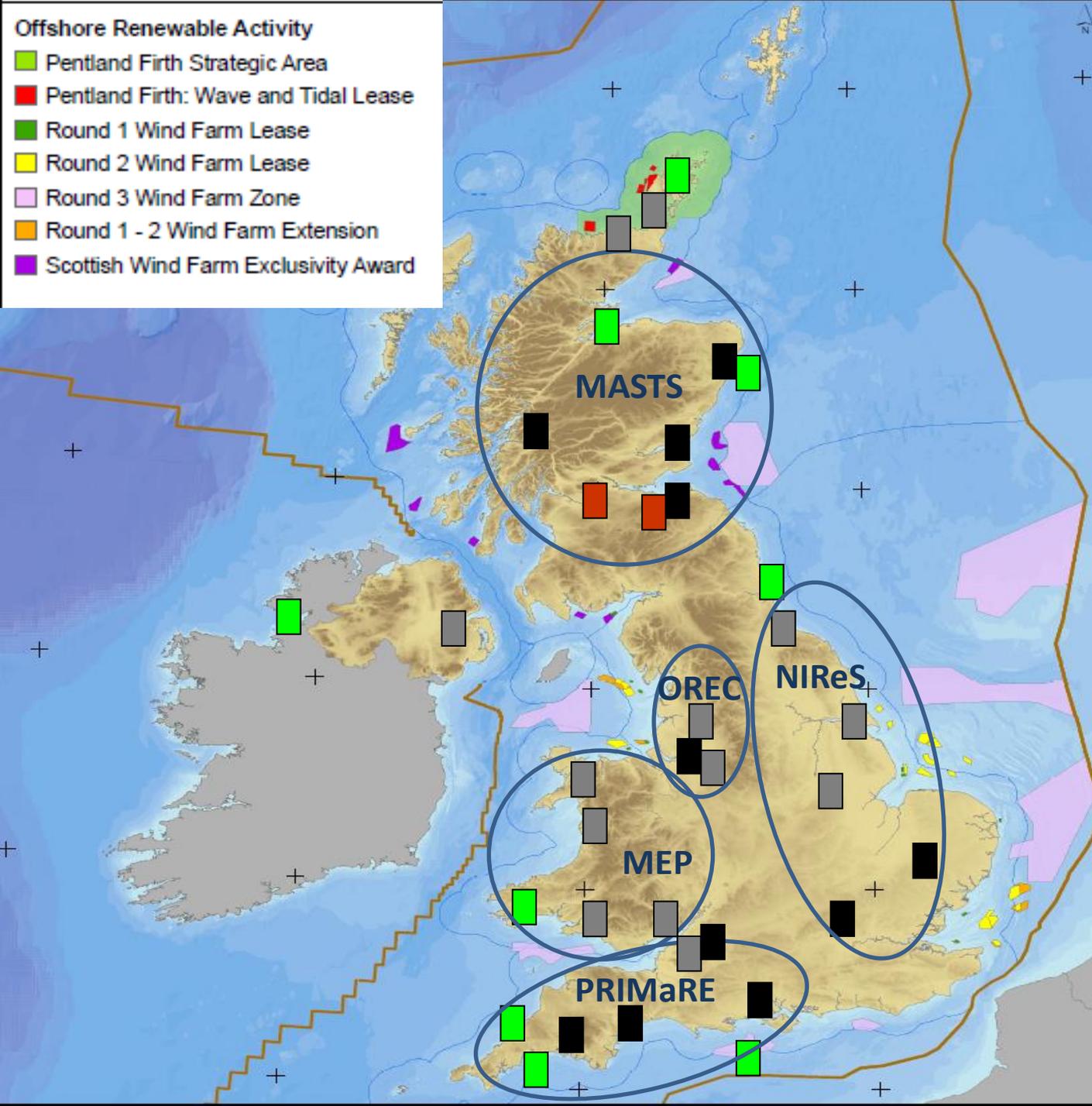
2008/9

2009/10

2010/11

2011/12

2013 onwards

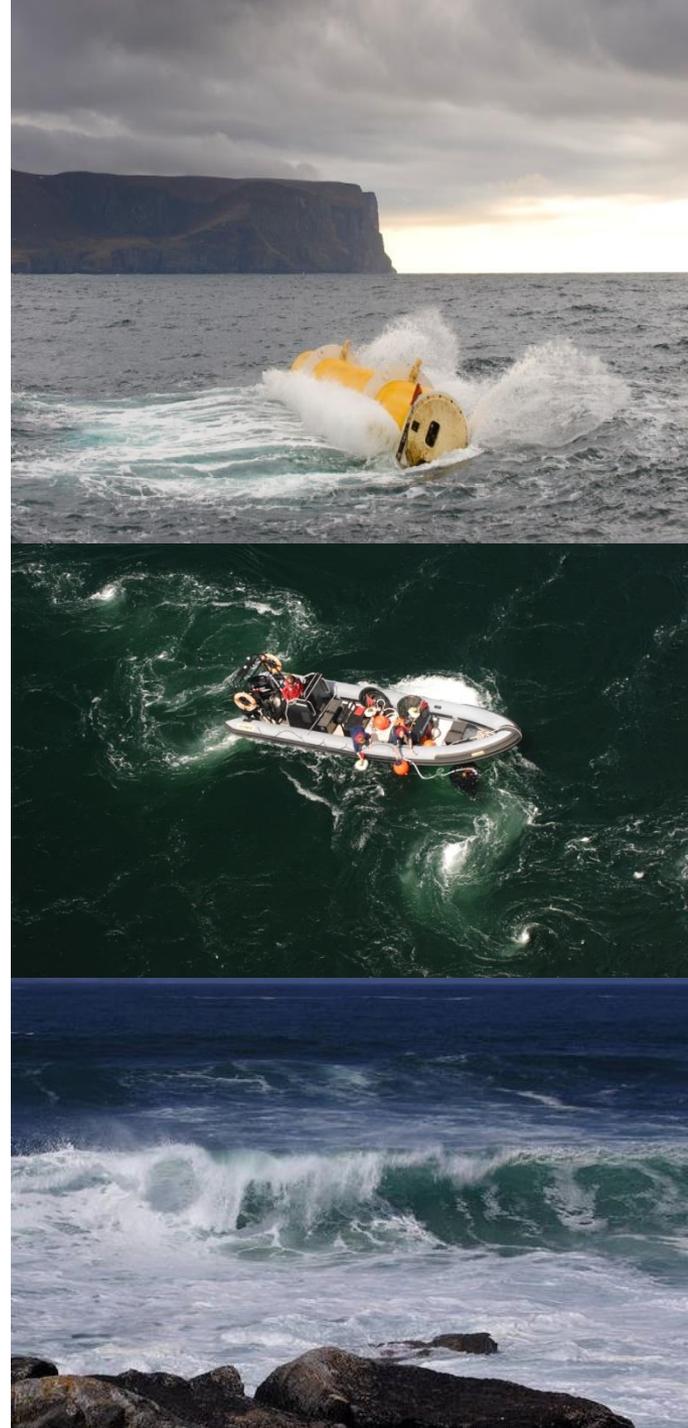


Offshore Renewable Energy : main UK centres of research

- NERC science
- Field testing centres
- Supergens
- Other Key HEIs

Knowledge Exchange

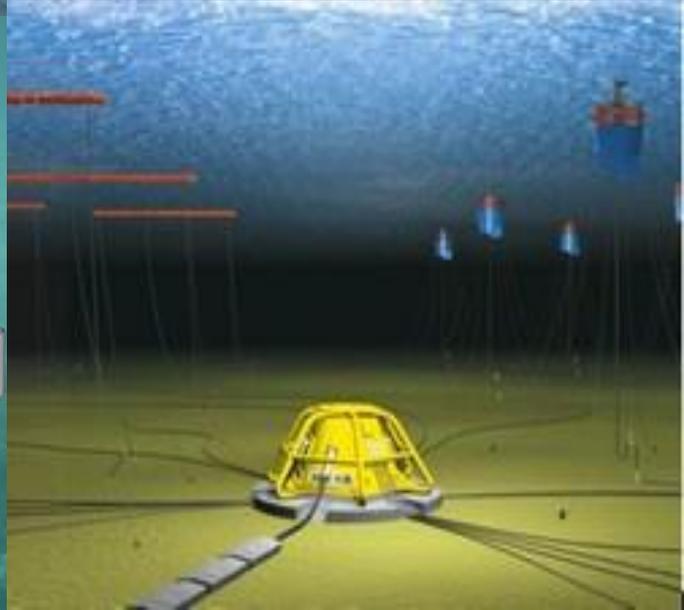
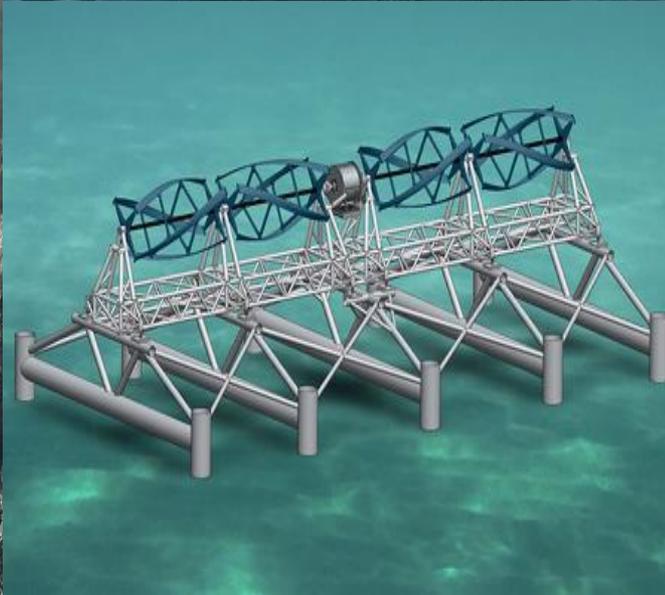
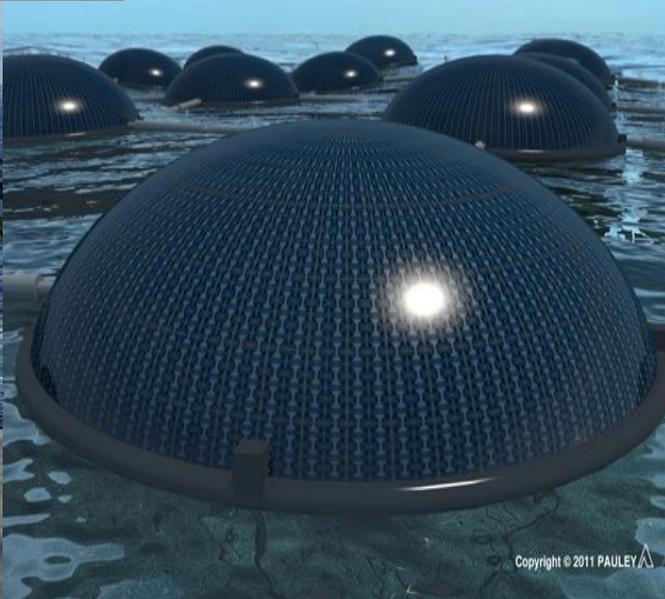
“developing a common language for communication, collaboration, and information exchange between research, industry, and government bodies to support sustainable growth of the marine energy sector”



NERC

SCIENCE OF THE ENVIRONMENT

NERC Marine Renewable Energy Knowledge Exchange Programme



NERC MREKEP



Department
for Environment
Food & Rural Affairs

EMEC ORKNEY
The European Marine Energy Centre Ltd

openhydro
— a DCNS company

PML | Plymouth Marine
Laboratory


SCOTTISHPOWER
RENEWABLES

 **BMT** Group

THE **CROWN**
 **ESTATE**

e.on

VATTENFALL

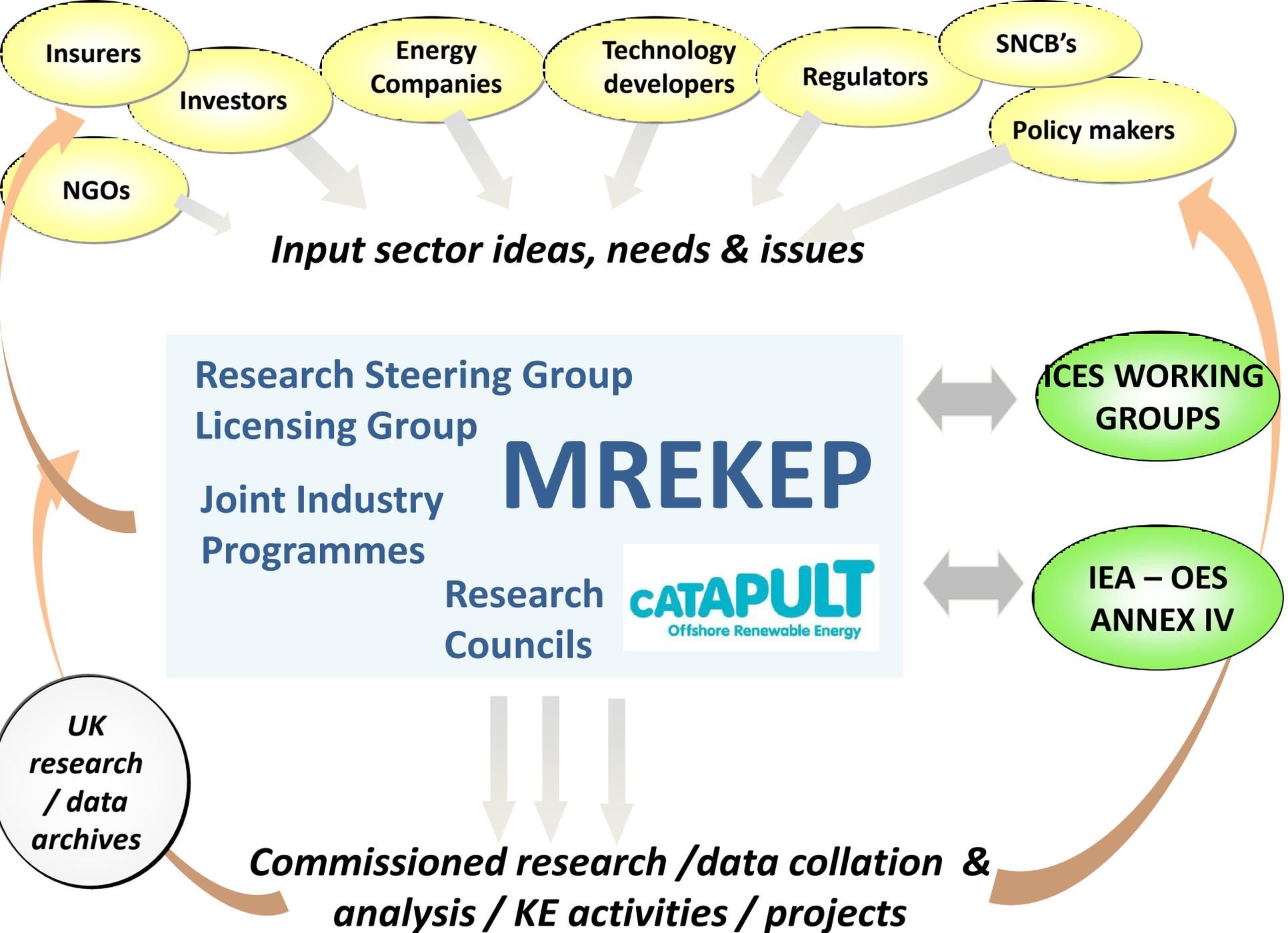


marinescotland


The Scottish
Government

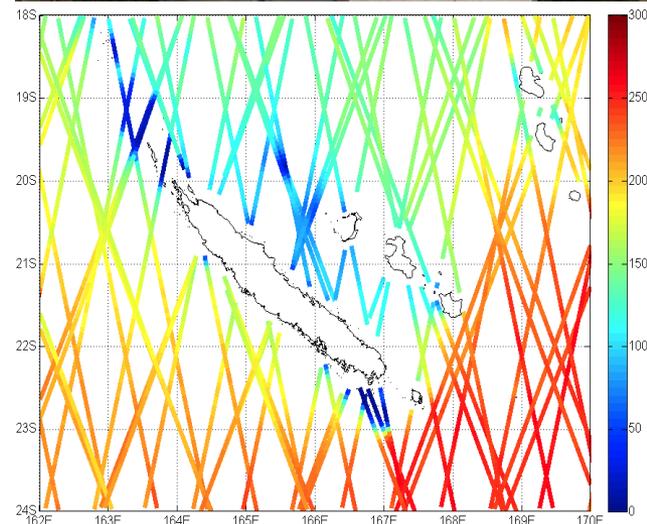
Priority science areas :

- Underwater noise
- Data access & management
- Cost effective monitoring
- Cumulative impact assessment
- Risk & uncertainty



Activities & Projects

- Strategic research – joint UK/International funding calls Commissioned research
- Knowledge Transfer Partnerships
- KE Projects, including internships – excellent value!

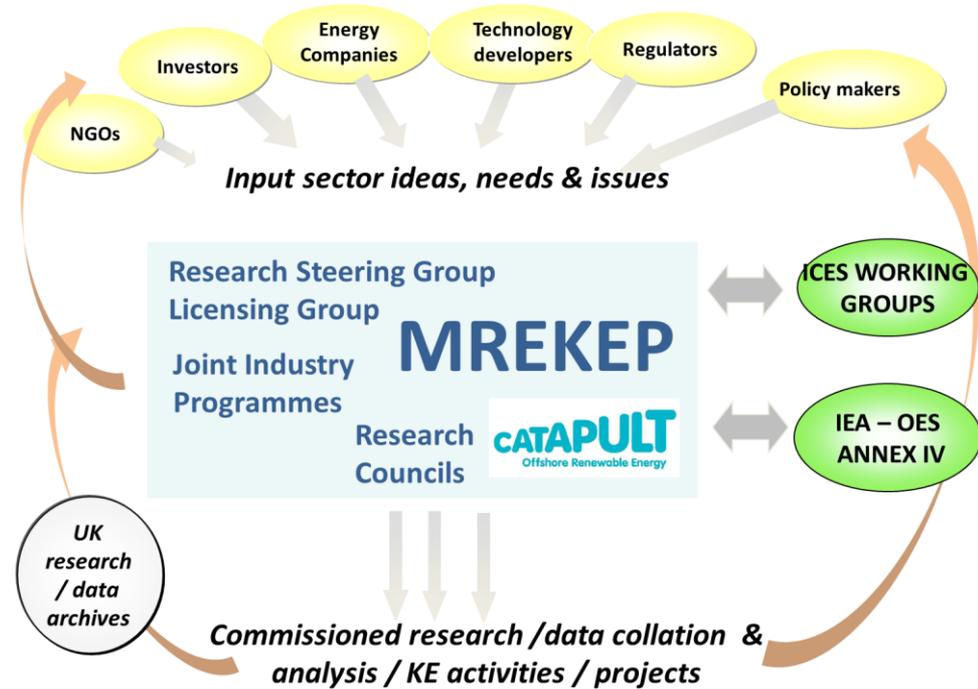


Knowledge Networks Moving Forward

- Proactively address upcoming industry challenges
- KE Opportunities & funding for industry-research collaborations are gaining momentum
 - *industry-led OR science-led*
- Internationalisation!
 - What works across borders?
 - What doesn't?
 - What are the gaps?



An international knowledge network for renewable energy



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