

Into the Blue: Marine Renewables in the UK



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OREG Fall Symposium, Halifax
30th November 2006

BWEA Marine

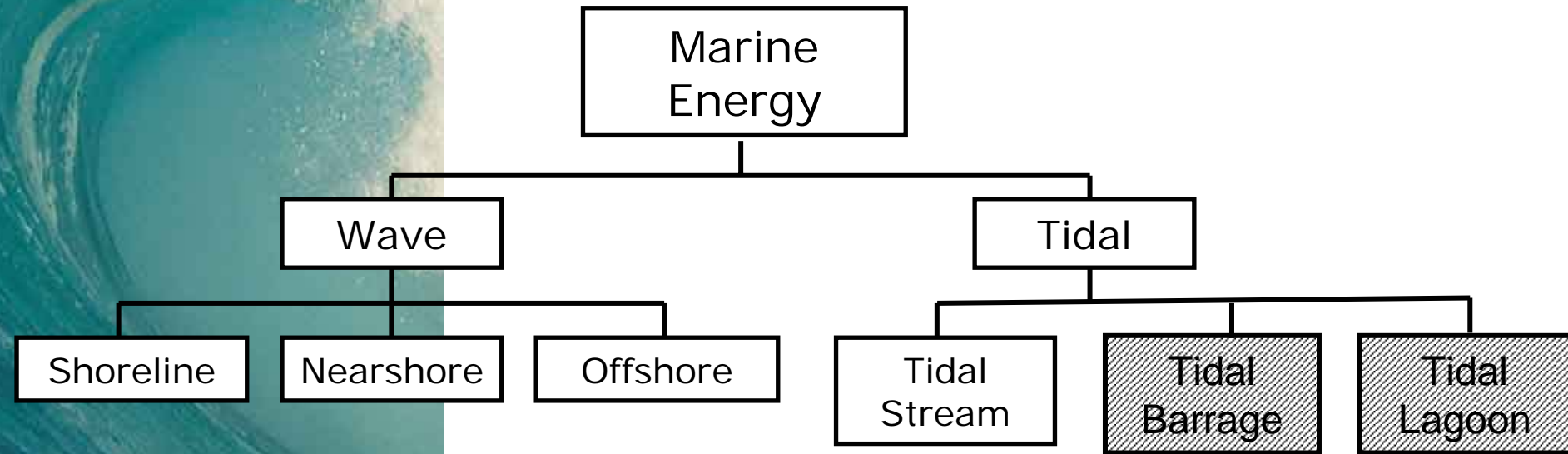
- UK's leading renewable energy trade association
- 330 Company members
- 117 company members in Marine Focus Group
- 14 on Marine Steering Group
- Have other relevant offshore working groups
- Co-ordinate industry and present consensus voice
- Guide Government towards industry requirements
- Liaise with other offshore stakeholders
- Raise Profile and increase confidence

www.bwea.com/marine

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Overview

- UK Energy Policy
- The Potential for Marine Renewable Energy
- The industrial opportunity
- Where are we now?
- BWEA: Working on the barriers
- Communication
- Conclusion

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UK Energy Policy

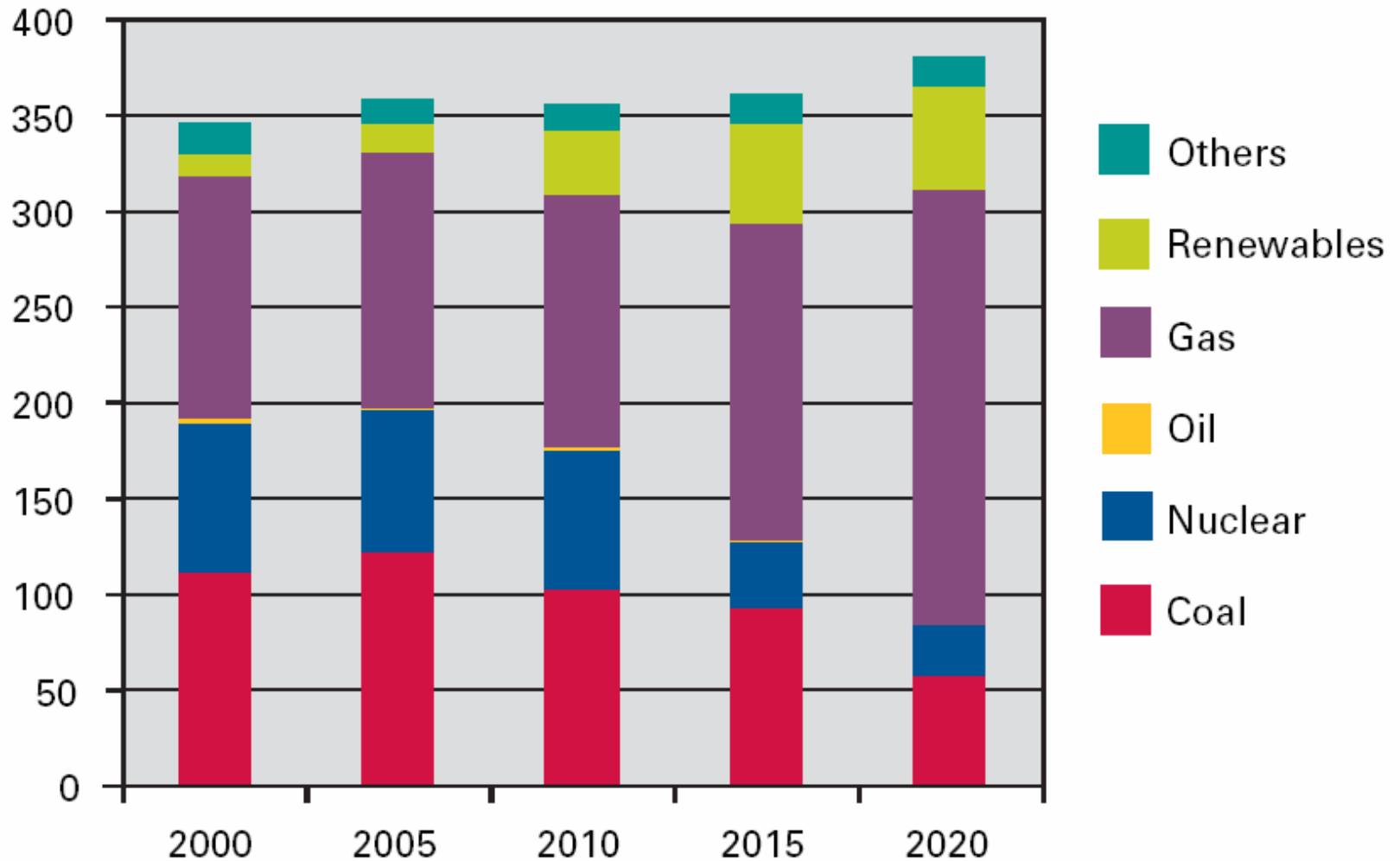
- 3 key drivers:
 - Climate change
 - Energy security
 - Cost to the consumer
- ‘Renewables Obligation’ on suppliers
- Rises year on year towards target:
 - 10% by 2010,
 - 20% in the future (no target date yet)

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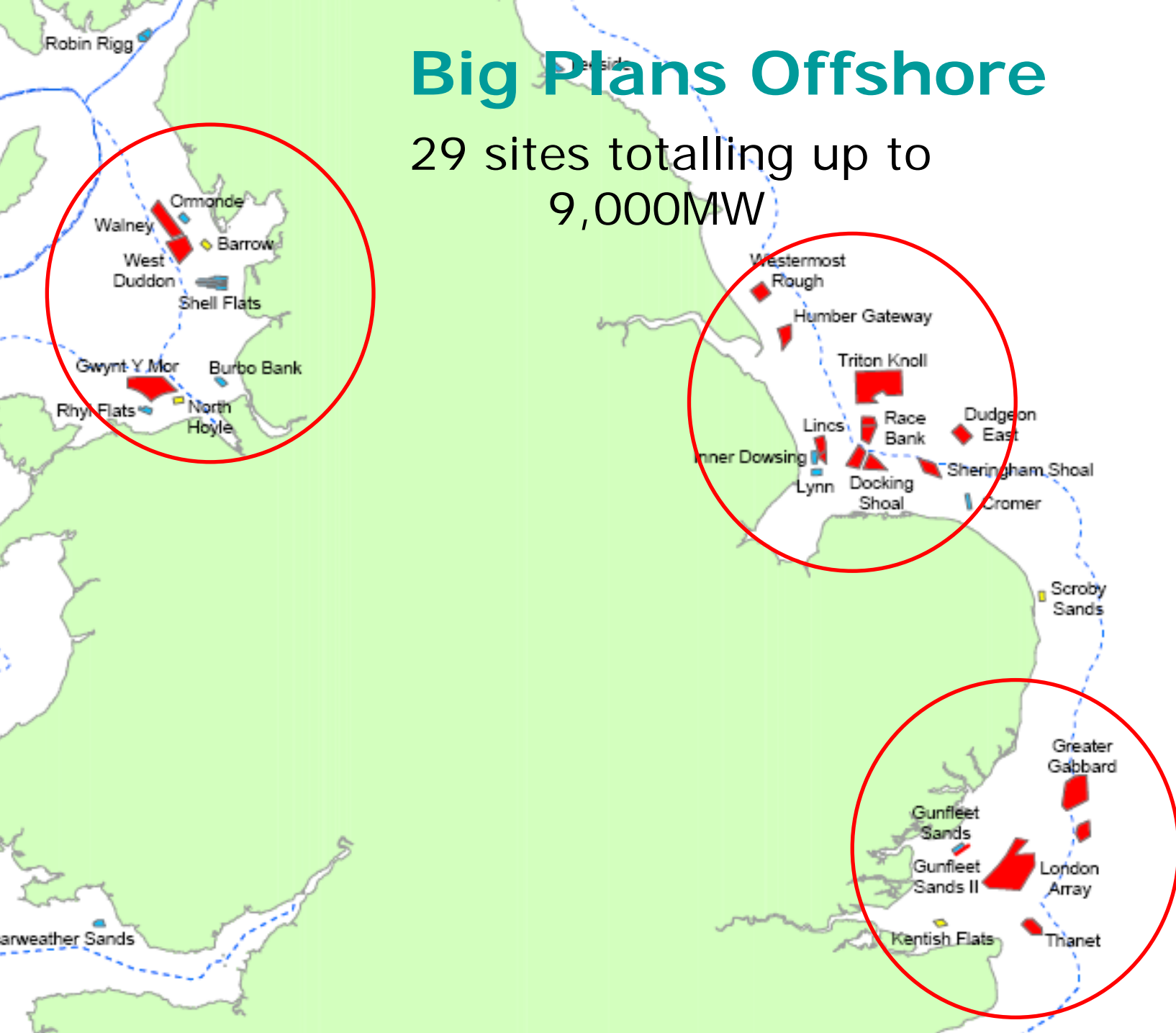
UK Energy Policy

TeraWatt hour



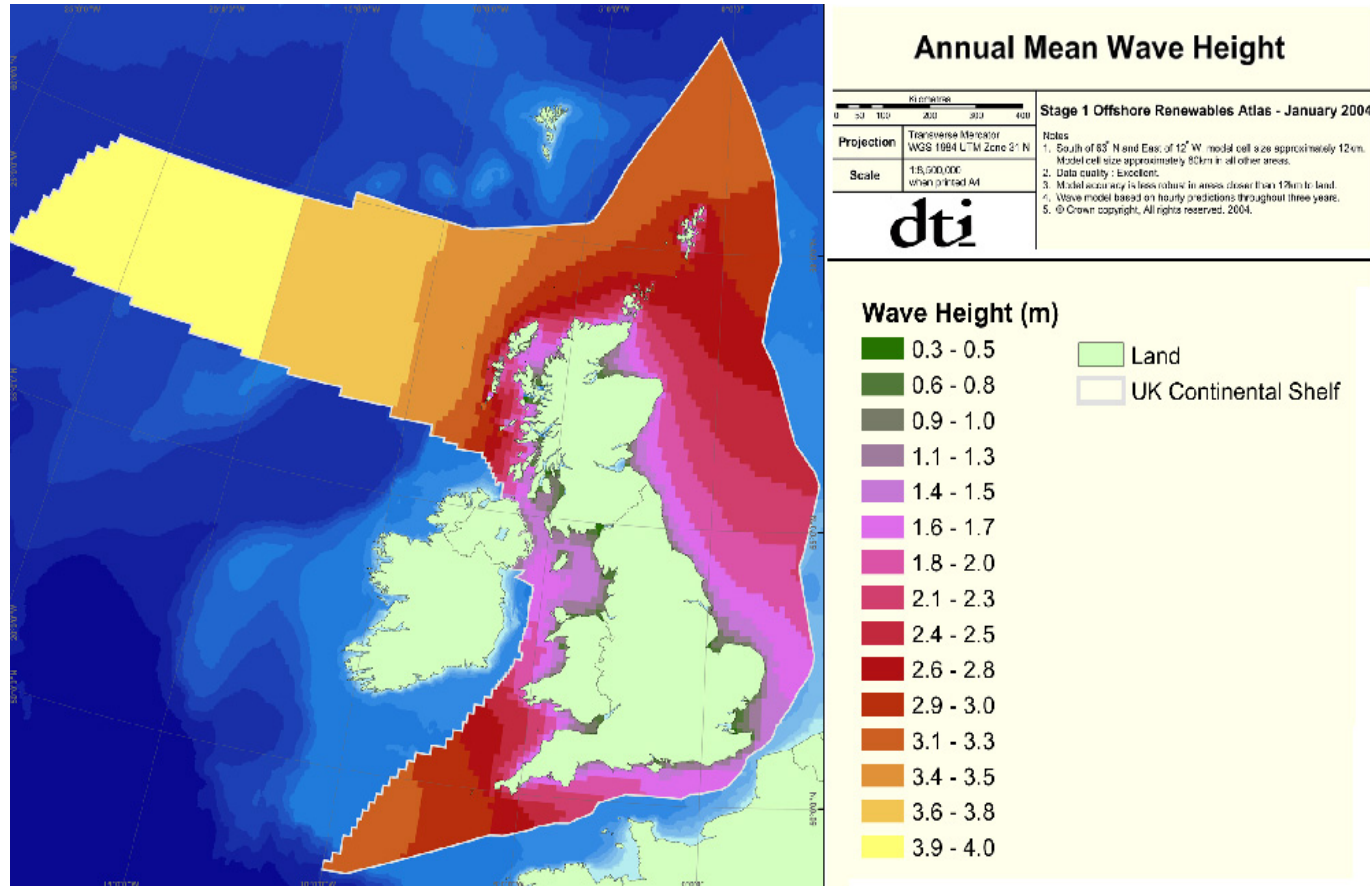
Big Plans Offshore

29 sites totalling up to 9,000MW



Potential for Marine

- **Wave:**

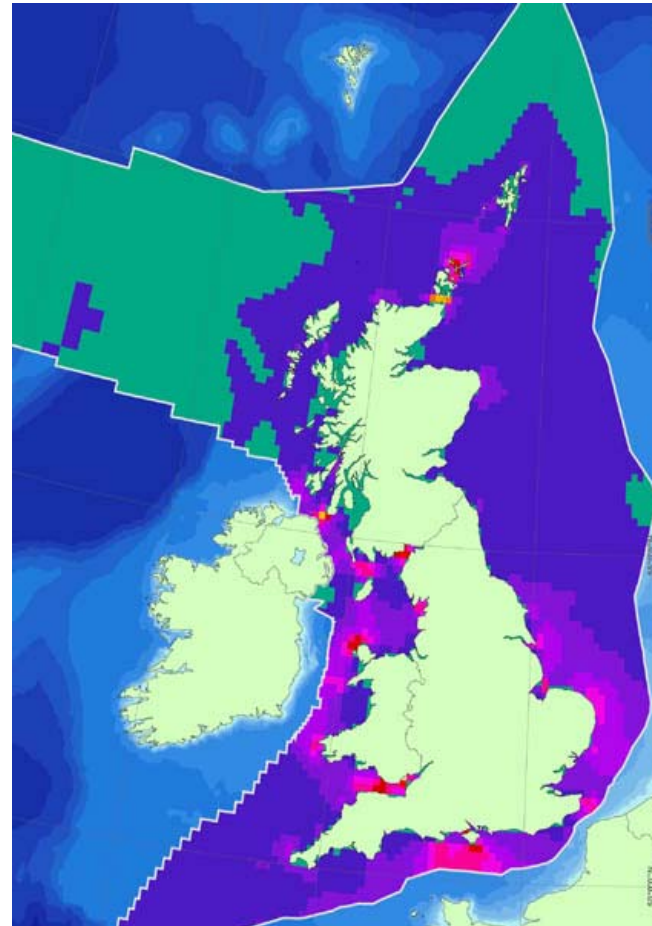


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Potential for Marine

- Tidal stream:



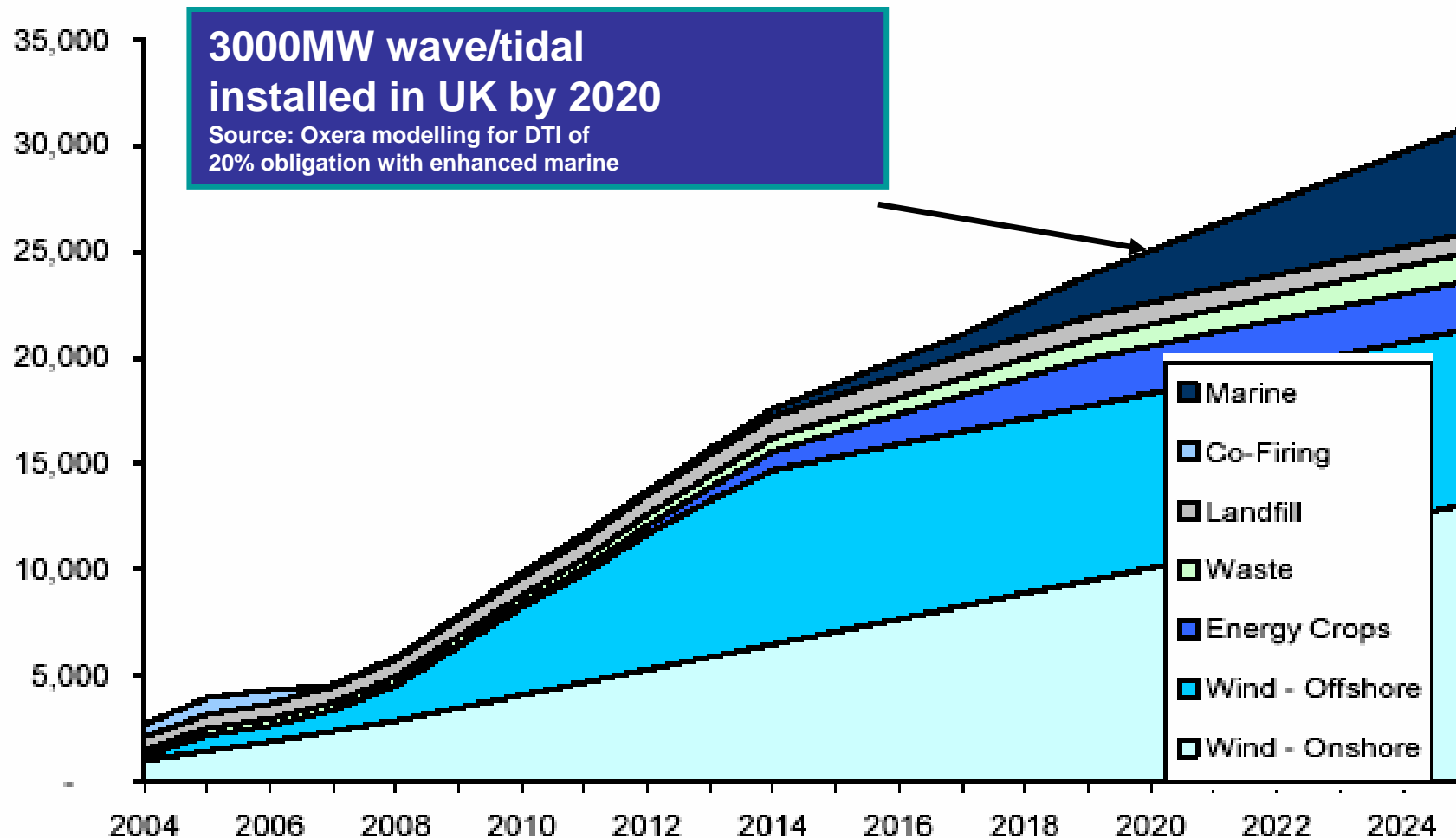
Average Tidal Power (kW / m² of vertical water column)



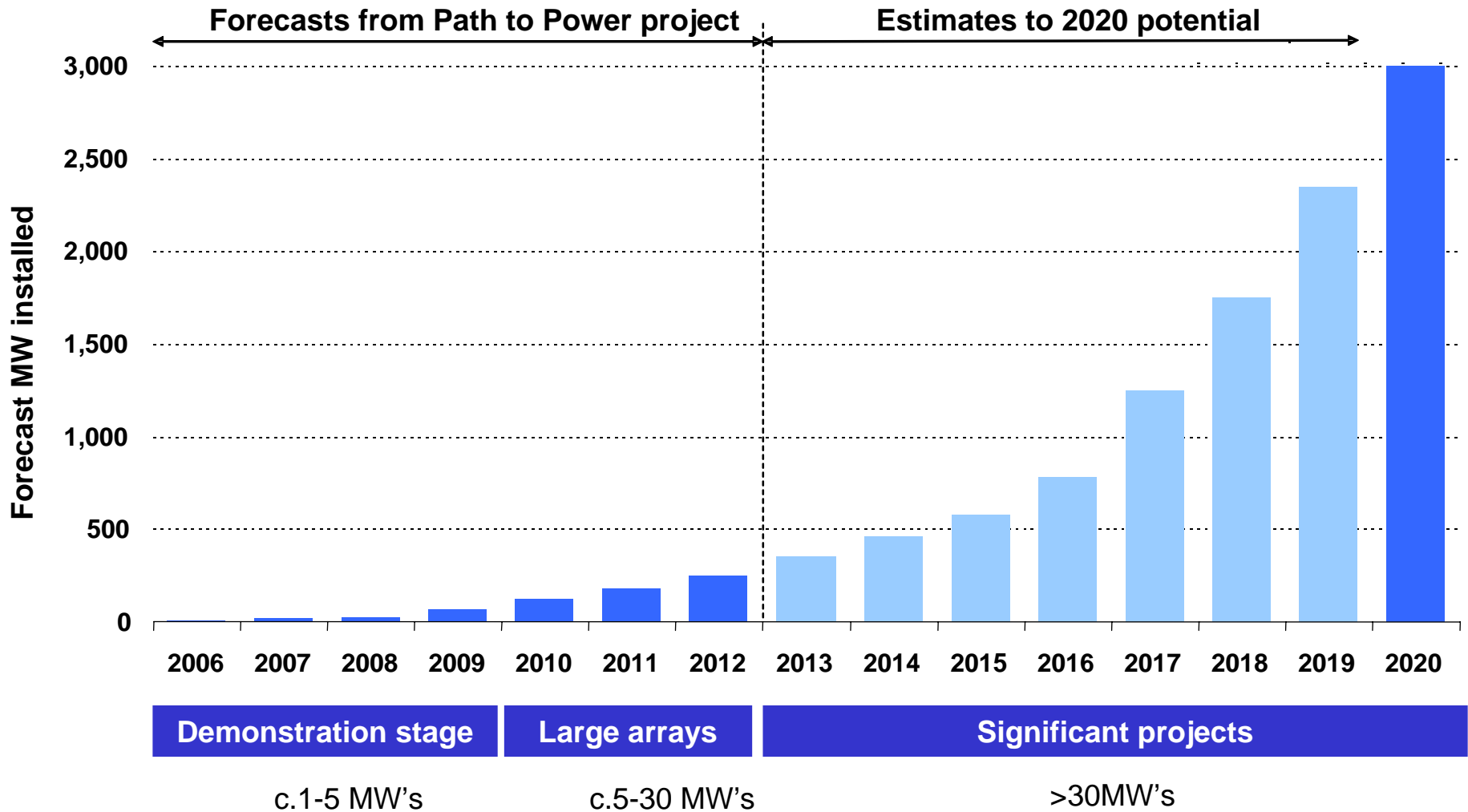
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Potential for Marine



Deployment Scenario towards 2020



The UK industrial opportunity

- Attractive cost reduction potential for investors
- Huge potential domestic and export market
- Revenues for UK of up to £4.2bn by 2050
- Growing offshore renewables supply chain
- Huge existing offshore skills base

The UK industrial opportunity

- Opportunities for leadership in:
 - offshore design and engineering
 - manufacturing
 - understanding of wave and tidal stream energy
 - site assessment
 - deployment
 - monitoring
 - maintenance
 - decommissioning
 - etc.....

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Where are we now?

Wave:



**Pelamis,
Ocean Power Delivery**



LIMPET, Wavegen

Tidal Stream:



**Seaflow Project,
Marine Current Turbines**



**TidEL,
SMD Hydrovision**

Where are we now?

- UK Government Support:
 - £25m R&D Programme
 - Funding innovative infrastructure support
 - £42m available for pre-commercial demo projects
 - Renewables Obligation consultation ongoing
 - Consenting Guidelines available
 - £2m for generic environmental research
- Scottish Executive support:
 - Funded infrastructure support
 - Will implement generous market support 2007
 - Conducting Strategic Environmental Assessment

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Where are we now?

- Crown Estate:
 - Leases are available and negotiable
 - Supporting early environmental studies
- The Carbon Trust:
 - Completed Marine Energy Challenge
 - Launched Marine Energy Accelerator
- Innovation and infrastructure:
 - SUPERGEN Marine Consortium
 - New and Renewable Energy Centre
 - EMEC
 - Wave Hub

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BWEA: Working on the barriers

- **Market support**
- **Grid access**
- **Planning and permitting**

BWEA: Working on the barriers

- **Market support**
 - UK-wide, long term support required
 - Must provide bridge into renewables market price
 - Current gap for leaders looking at large arrays
 - Private investors need clarity beyond £42m
 - This affects the cost of capital today!
 - Present RO consultation is a great opportunity

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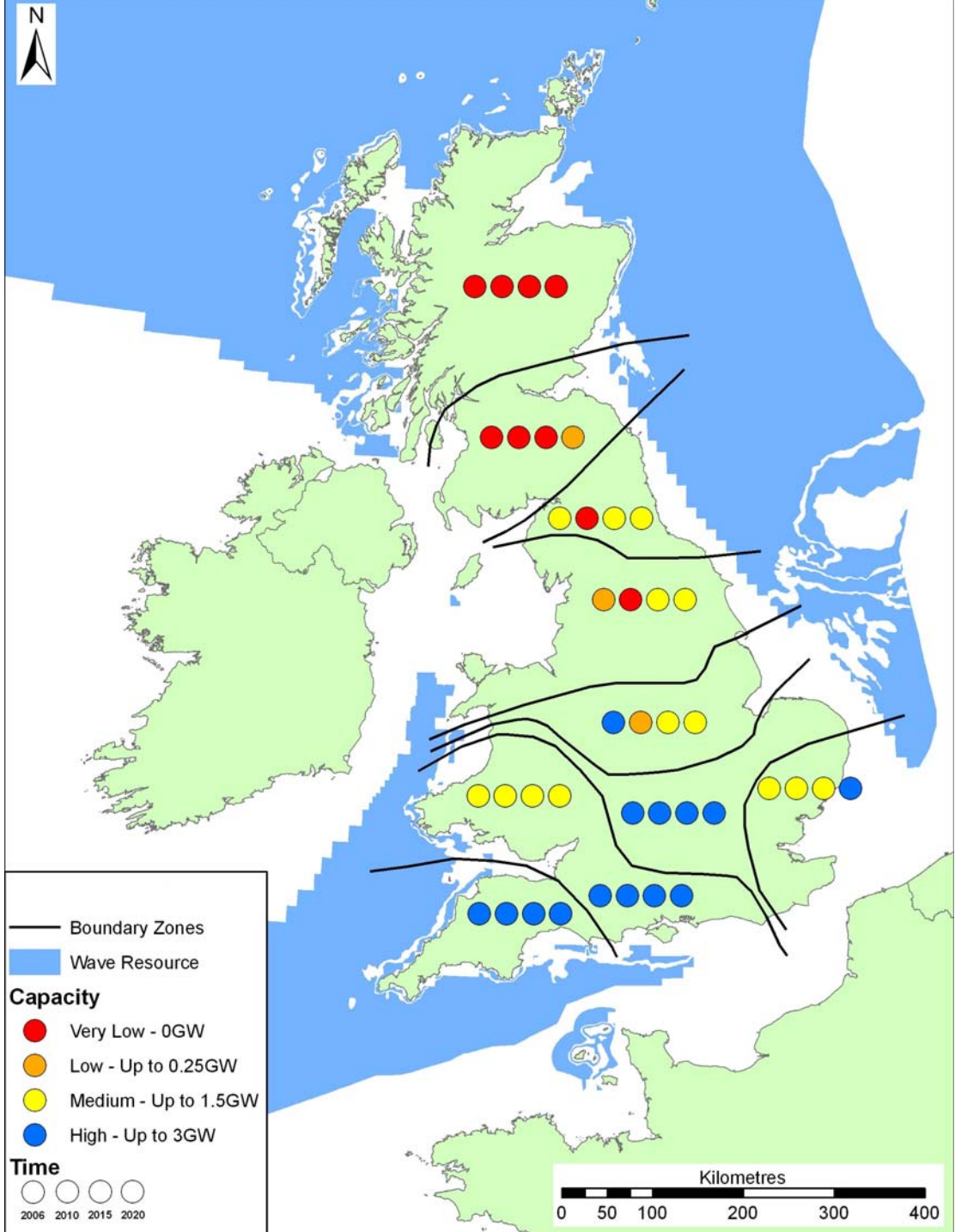
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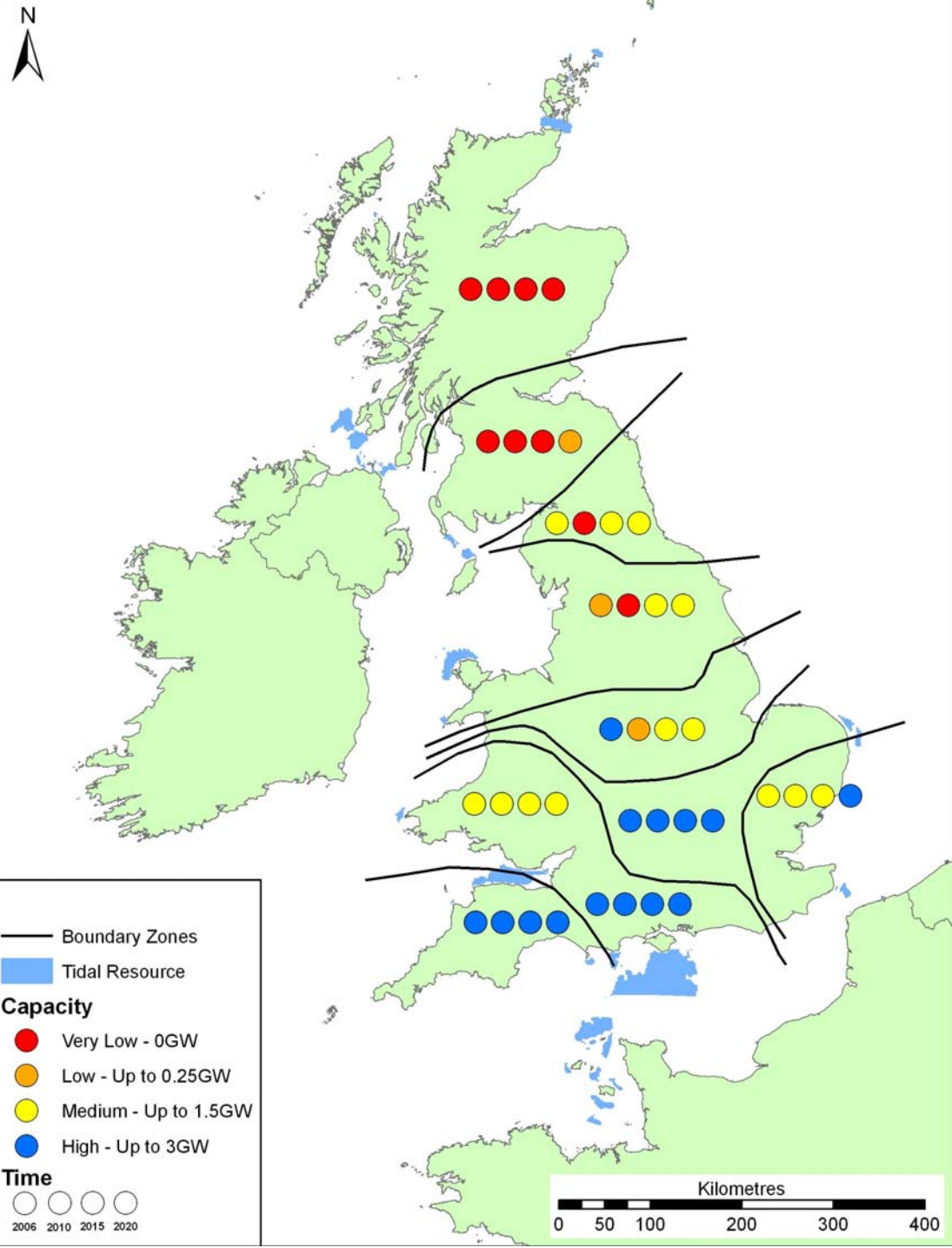
BWEA: Working on the barriers

- **Grid access**
 - Resource distribution and grid capacity

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BWEA: Working on the barriers

- **Grid access**
 - Resource distribution and transmission capacity
 - Connection problems around high resource areas
 - Cost of connection and network charges
 - Restricts growth potential
 - This affects the cost of capital today!

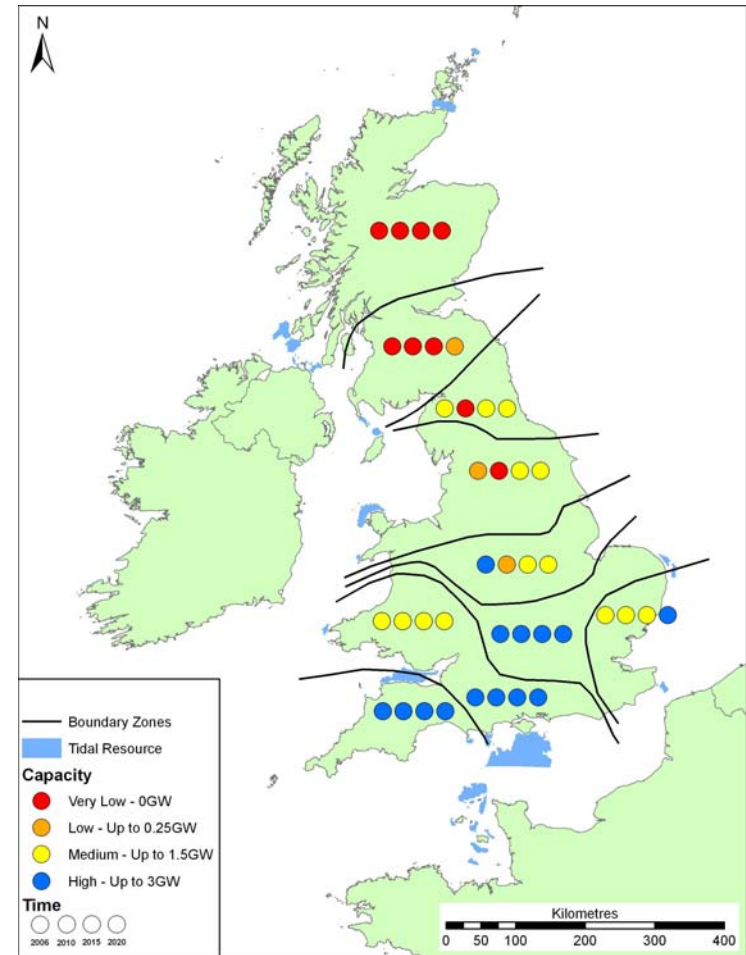
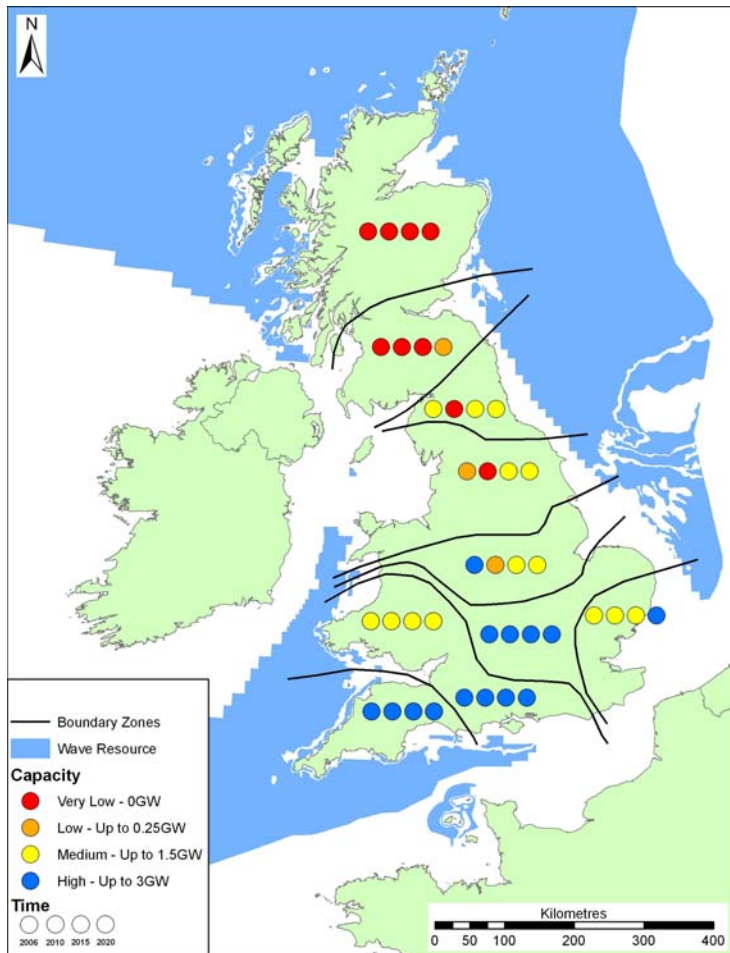
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BWEA: Working on the barriers

- **Planning and Permitting**
 - SEA required for any Government led strategy

BWEA: Working on the barriers



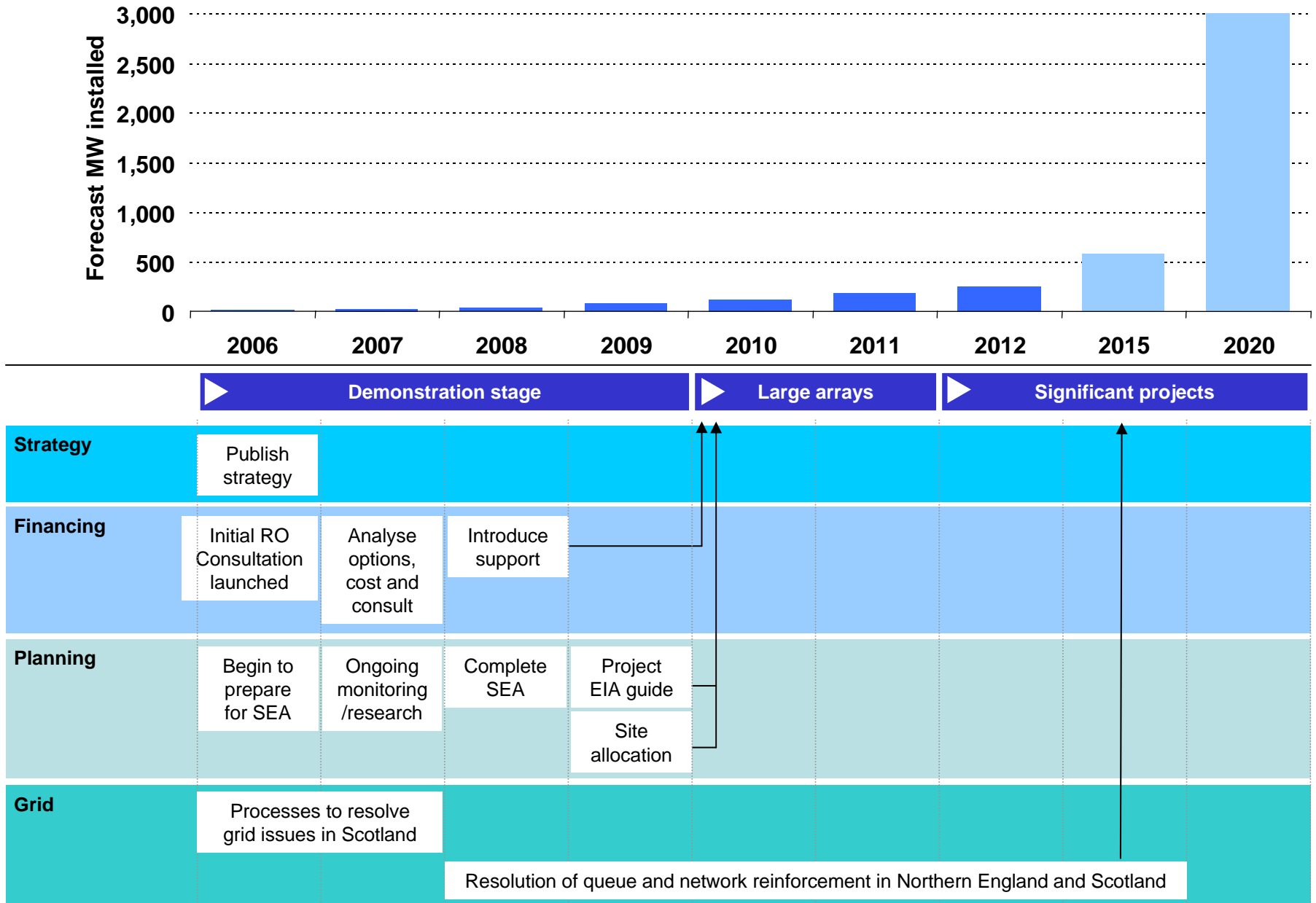
BWEA: Working on the barriers

- **Planning and Permitting**
 - SEA required for any Government led strategy
 - Must be done well UK-wide
 - Time to conduct may cause delay
 - Restricts growth potential
 - This affects the cost of capital today!

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Strategic Vision: Delivering the Potential



Communication

- Never underestimate the importance of early communication!
- BWEA undertakes this on four levels:
 - Industry
 - Government
 - Stakeholders
 - Public
- Early confidence is vital for buy-in
- Loss of confidence is difficult to regain
- Sharing experiences with other countries will be important

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Conclusions

- UK Political support for renewable energy is strong
- The UK offshore renewables industry is burgeoning
- Major utilities are looking seriously at marine as the next wave of technology
- Government must be steered clearly towards support requirements to make this a reality
- A strong, well supported vision is important
- Understanding both political and investor risk profiles is key to a strong message
- The industrial potential for marine has political capital
- Build confidence with all through early engagement
- BWEA's experiences in the UK should help everyone

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Let's Talk!!

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