

# ORKNEY WAVE-FARM PROJECT



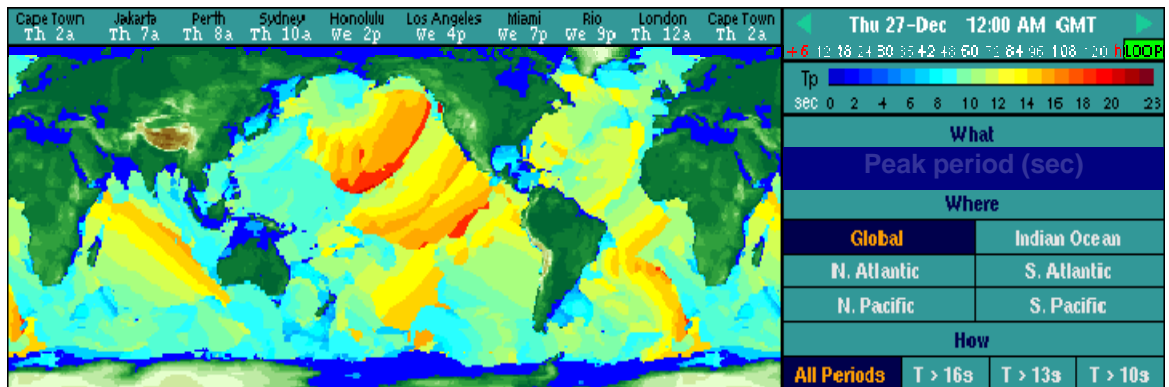
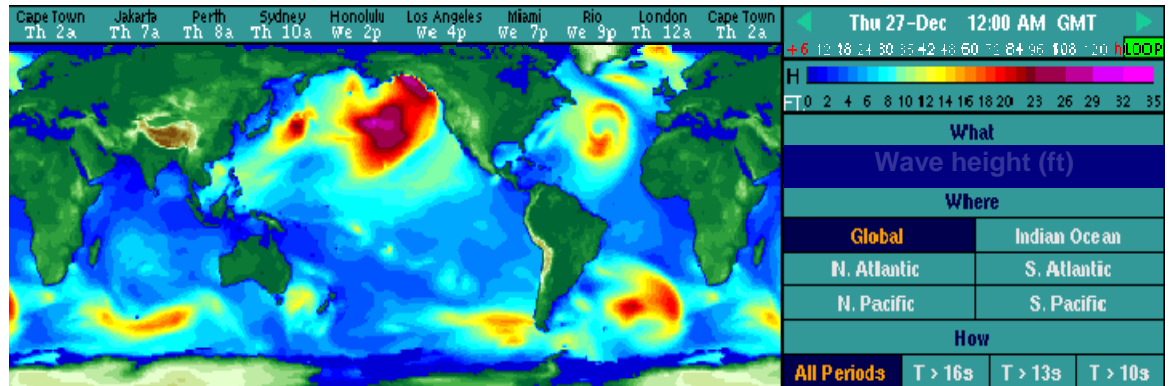
# OVERVIEW

1. Marine renewables – general
2. OPD & Pelamis
3. Commercialisation
4. ScottishPower Orkney Wave-Farm Project

# Wave Energy around the Globe

## Characteristics:

- Huge resource, ~ 700GW
- Technology deployment underway
- Highly forecastable using existing services
- Effective interaction with wind resource



# Marine Energy in the UK

- Large resource: 3,000MW by 2020
- Wave power: off N.Isles, Lewis, Cornwall
- Tidal Stream: N.Isles, W.Isles, English Channel
- UK has World-leading companies incl.:
  - OPD, Wavegen, AWS etc
  - MCT, SMD, Lunar etc
- EMEC Test Centre has cemented our position
- WaveHub making good progress
- Very strong political support

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# OPD – key strengths

## Board of Directors

**Management, Finance, Admin (6)**

Health & Safety and QA



**Effective strategic planning**

**Sales and Marketing (5)**



**Efficient management, H&S, QA**

**Engineering (29)**

R&D, Design & Testing



**Global sales & marketing**

**Production (24)**

Joint Module Manufacture

Pelamis Assembly



**World-class engineering**

**Offshore Operations (6)**

Installation

Operation & Maintenance



**“Lean production” philosophy**



**Established installation procedures**

***Resources to deliver - dedicated team of 70 staff, committed shareholder base***

**ScottishPower**

renewables

BWEA28 – 2006 Glasgow

**OCEAN POWER  
DELIVERY LTD**

[www.oceanpd.com](http://www.oceanpd.com)

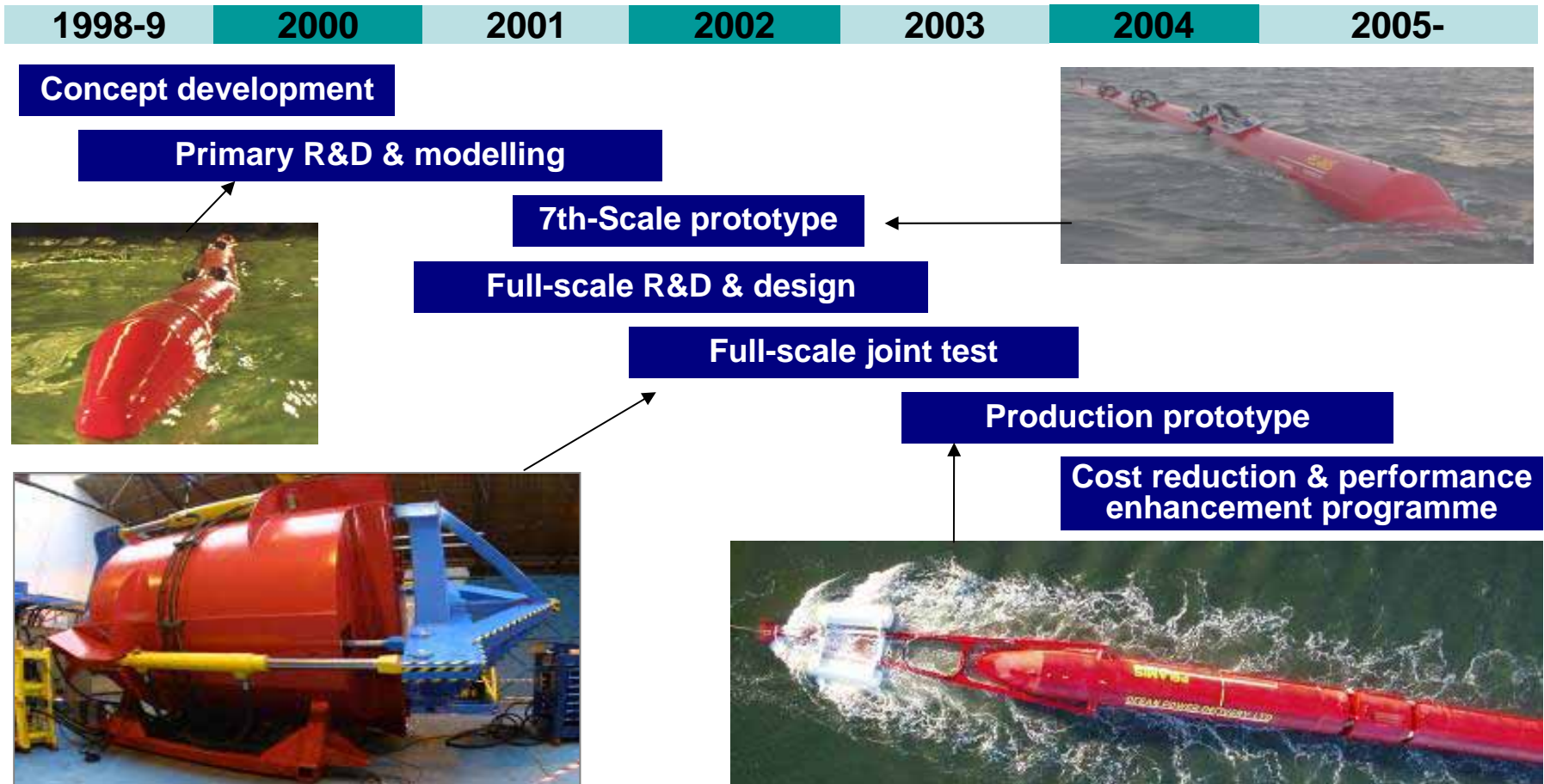
# Pelamis WEC – market leader

- Flexible design
- Survivable
- Independently verified
- Available technology
- 160m long, 3.5m diameter
- 750kw rating
- Low environmental impact
- Simple installation
- Off-site maintenance

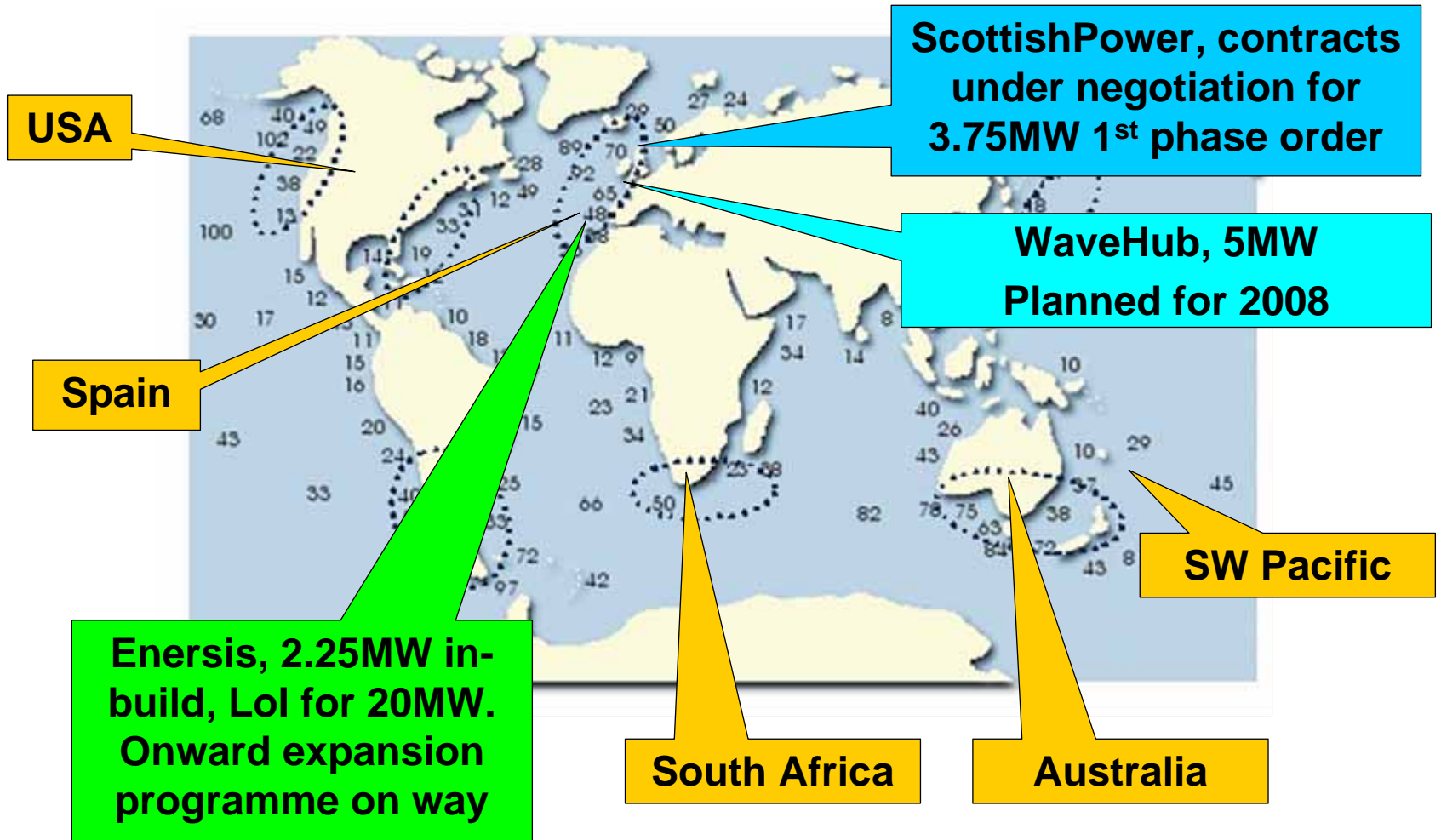


# Rigorous, staged R&D programme

**FIRST SALES**



# Projects under development



# Economic Benefits

## Example: Enersis Contract

- 3 off P-1A, 750kW machines
- Maximised UK content
- Camcal, Ross Deeptech, Goodwins, etc.
- 95% by value
- 200 jobs supported through build
- £6m into UK economy from this order alone



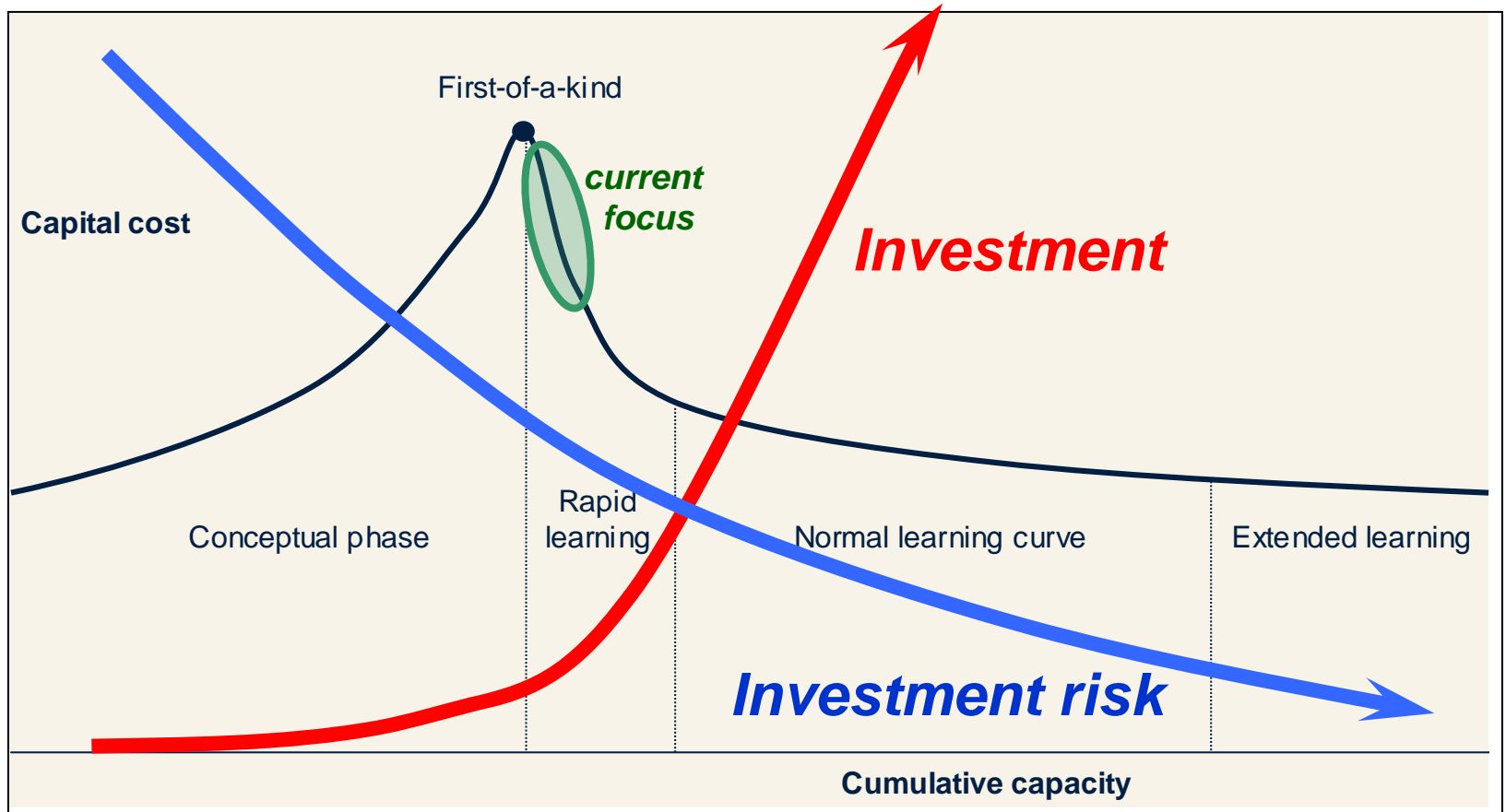




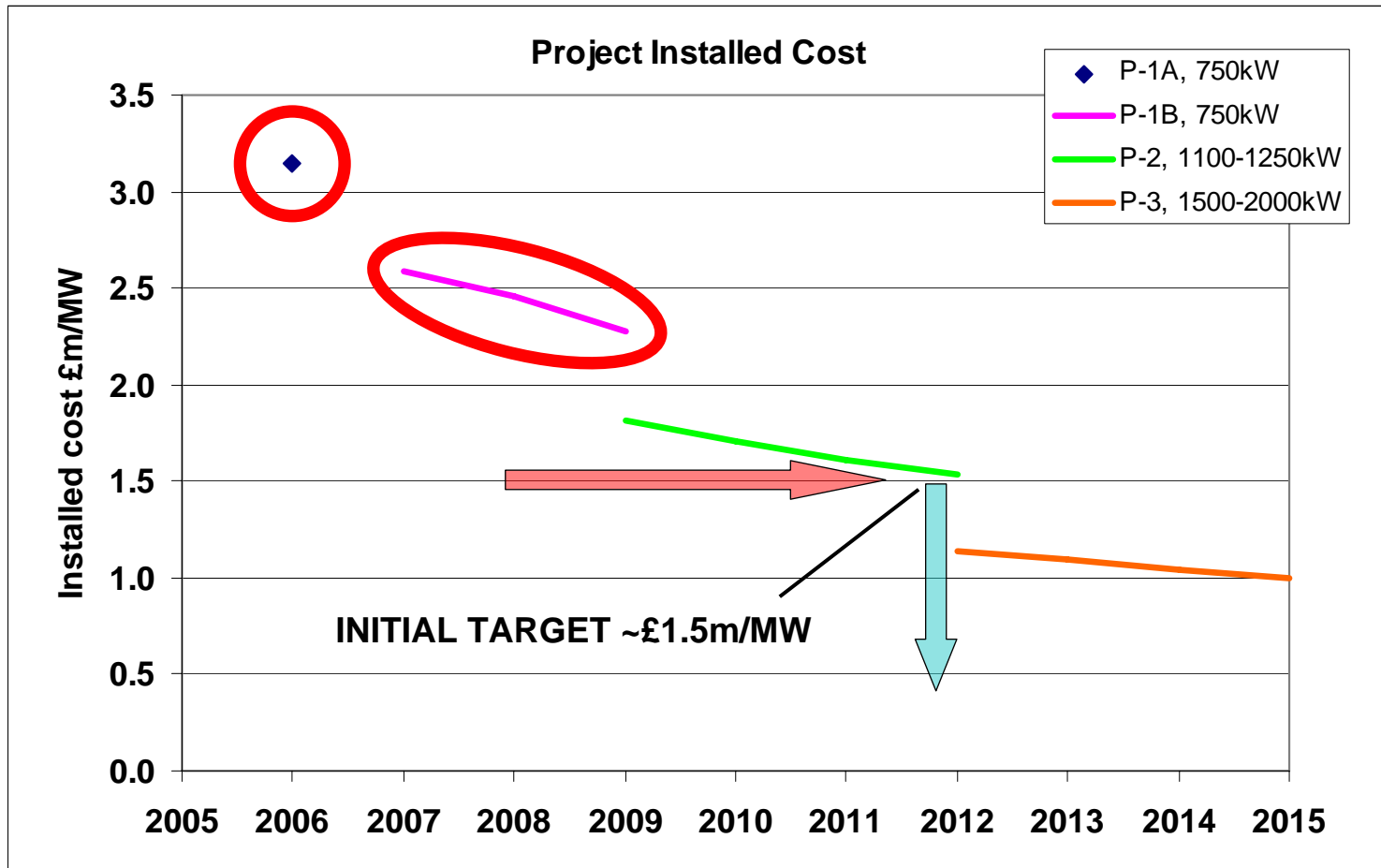
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- **Commercialisation**
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# Generic technology development cycle



# Pelamis – cost reduction targets



**Target cost: < £1,500/kW by 2011-12**

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# Project Overview

- ScottishPower & OPD working together
- Establish demonstration project
- Accelerate commercialisation
- Working in parallel with prototype trials
- First project of 5 units at EMEC
- Funding support crucial to viability

# Benefits of Project

## ScottishPower:

- Early understanding of new sector
- Minimise investment risk

## OPD:

- Allow P-1B device to prove aspects of P-2A
- Maintain increasing production volume
- Capture economies of scale

## Industry:

- Maintain UK's global lead
- Secure EMEC as “Centre for Excellence”

# Key issues

- Financial support package
- Consents
- Resource evaluation
- Lease terms
- Testing and monitoring

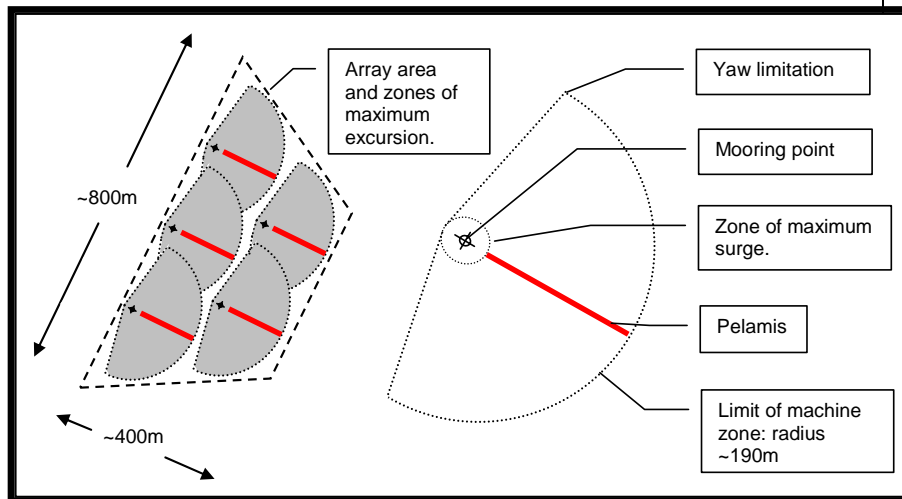
# Support Mechanisms

- DTI MRDF: good scheme but not optimum for us
- S.Exec propose a marine band within ROS
- Industry recommendations incorporated
- Buyout of £175/MWh
- Guaranteed 30% headroom
- Total capacity limited to 75MW
- Support continues to 2027
- Will provide a major boost to sector

# Project site

## Advantages of using EMEC:

- Excellent wave resource
- Facilities for testing
- Grid connection
- Simplified consenting



# Wildlife impacts



- Increased fish numbers
- Bird interest increased
- Collisions unlikely
- Disturbance unexpected
- Camera monitoring
- Seals will navigate round
- Noise monitoring

# SUMMARY

- Orkney project making good progress
- Government financial support is materialising
- Partnership is working well
- Project will be located at EMEC
- Continuing to work hard to complete the project
- **Helping kick-start the UK's marine industry**