

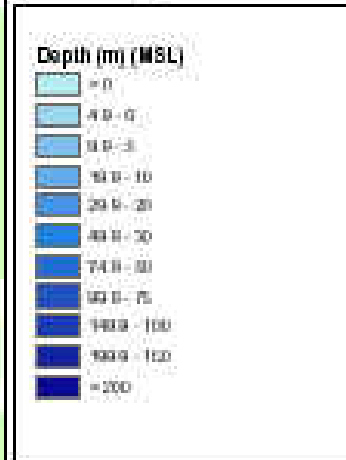
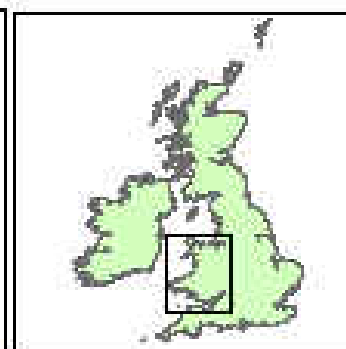
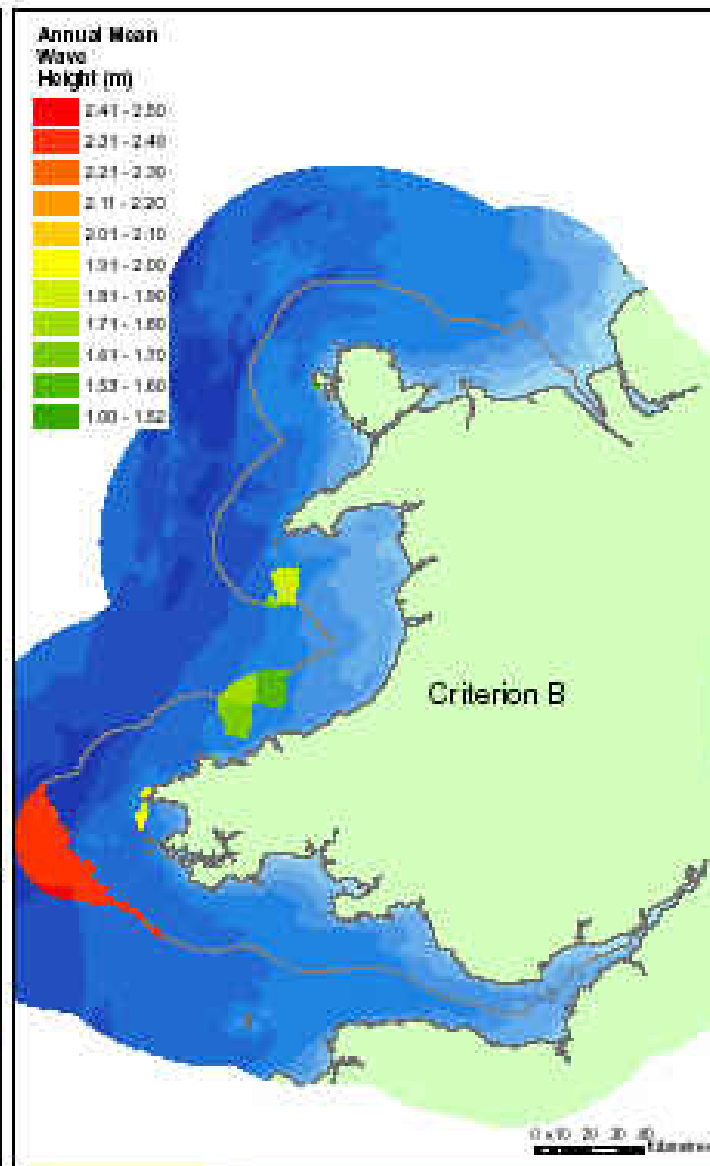
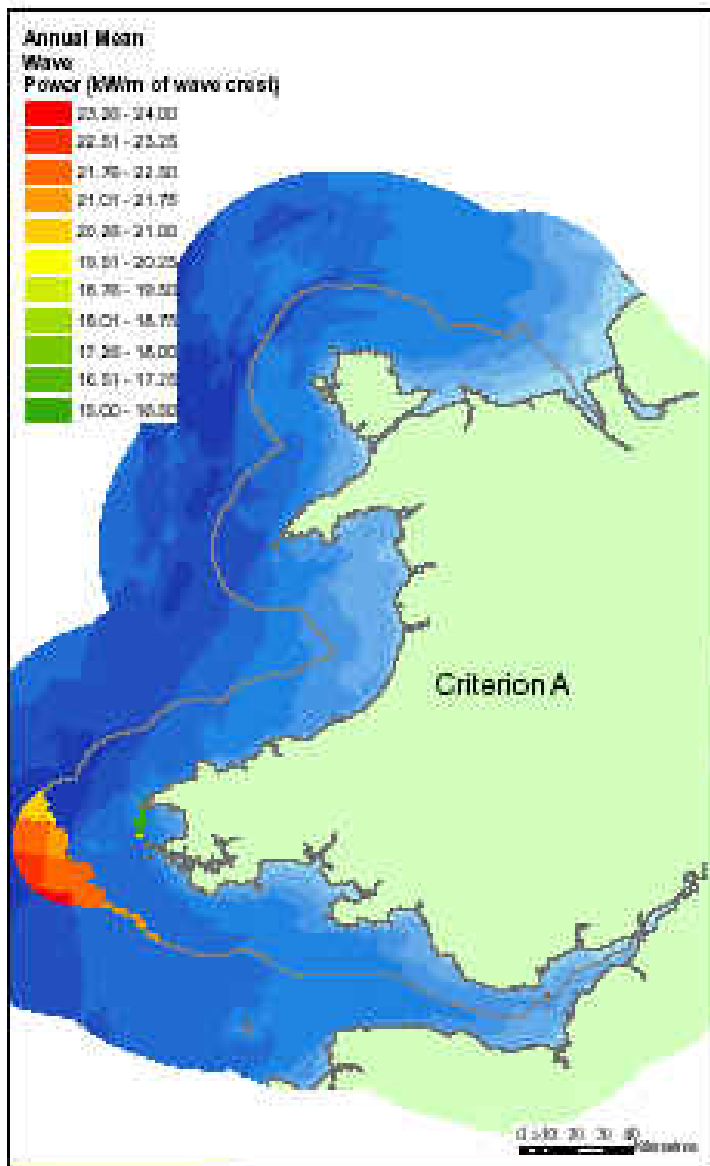
Wave Dragon Pre-Commercial Demonstrator Project



Wave Dragon Prototype

- 1 : 4.5 scale prototype, in inland Danish sea (RAMSAR site)
- In operation since May 2003
- Redeployed April 2006





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 Source: Atlas of UK Marine Renewable Energy Resources

Criterion A
 Wave Energy > 19MW/m of wave crest
 Water Depth 40 - 200 m
 Tidal Current Speed < 1 m/s

Criterion B
 Wave Height > 1m
 Water Depth 40 - 200m
 Tidal Current Speed < 1m/s

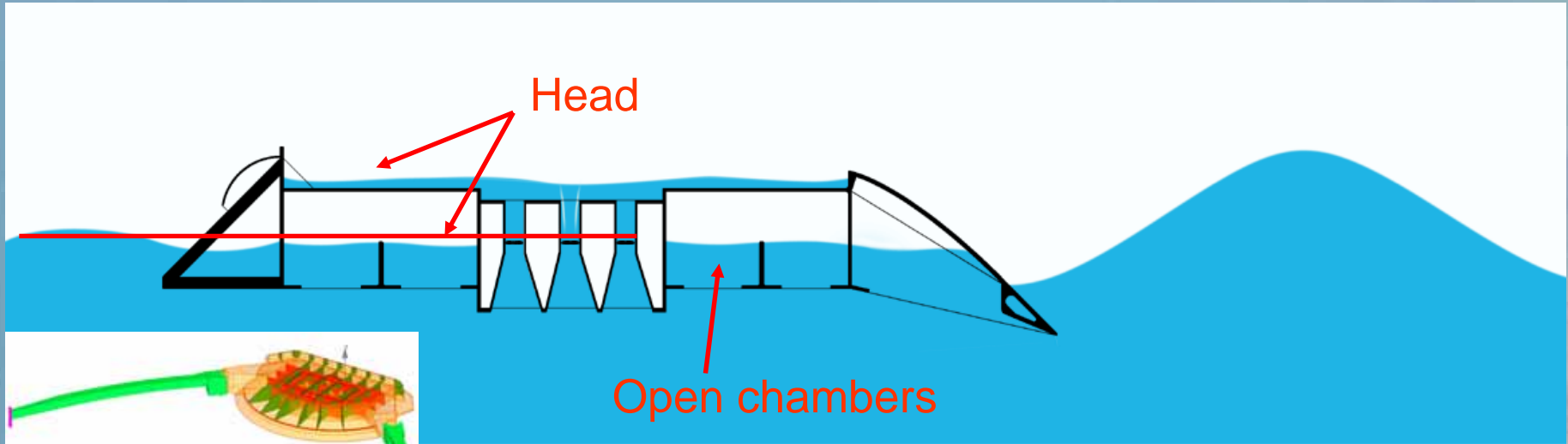
Model Cell Size = 12 km
 Scale 1:250,000

Location: R:\projects\GIS_34711
 Wave_deep_water.mxd

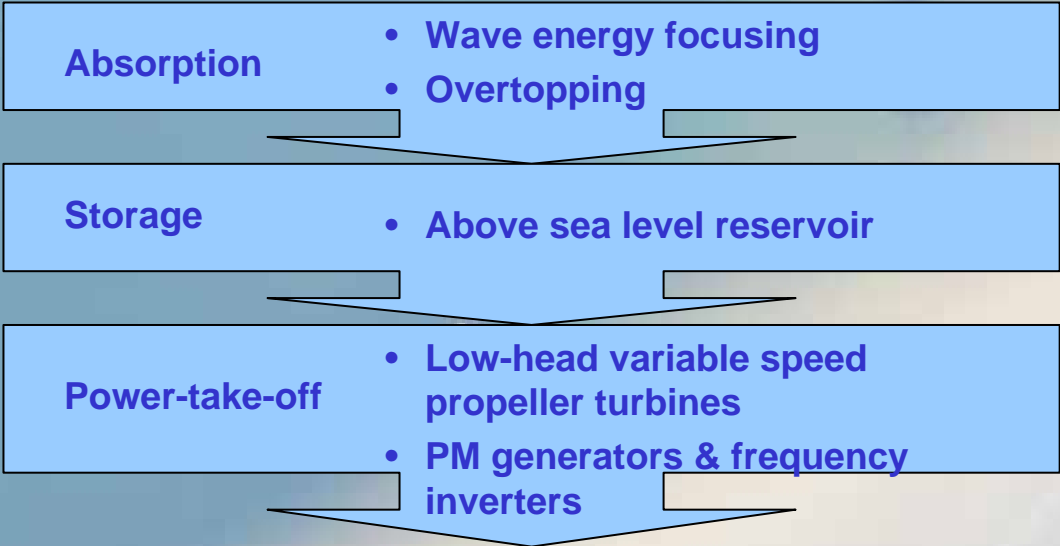


Potential Location of Offshore Wave Devices

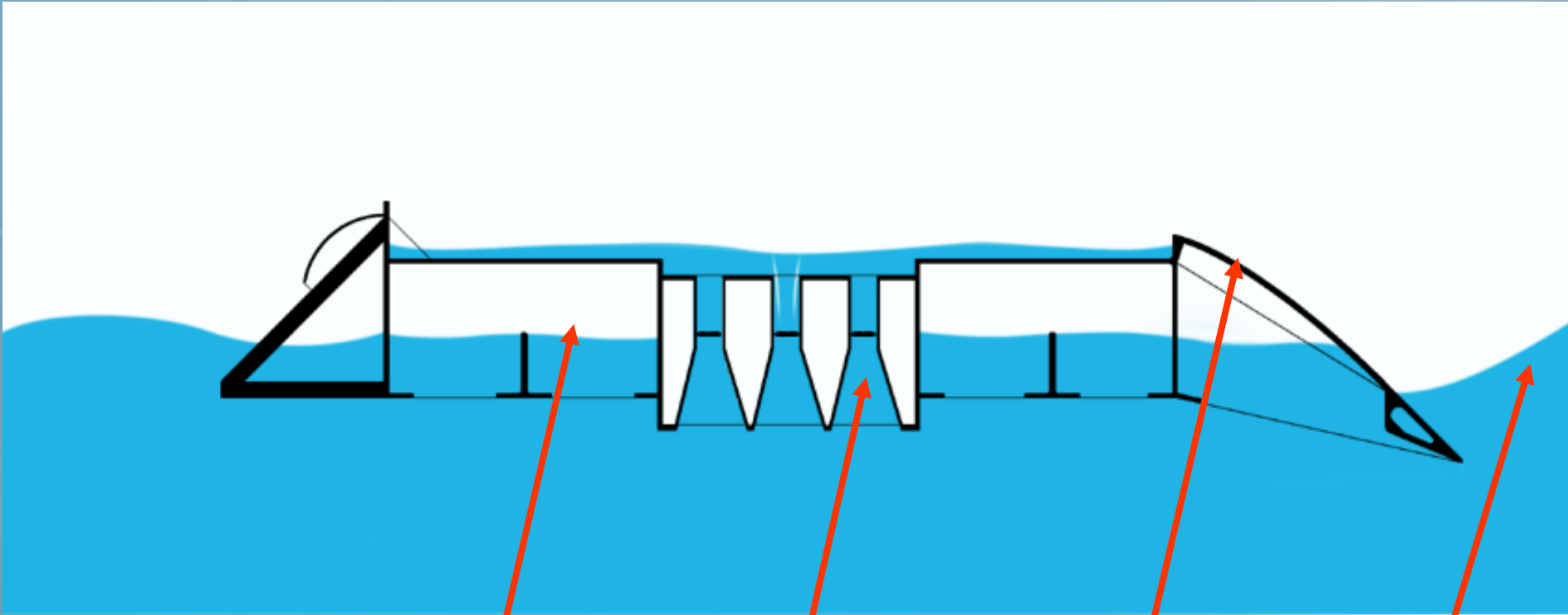
Figure 2



- Floating
- Adjustable floating level
- Overtopping
- Above sea level reservoir
- Hydro turbine P-T-O



To Be Studied: Regulation Strategy

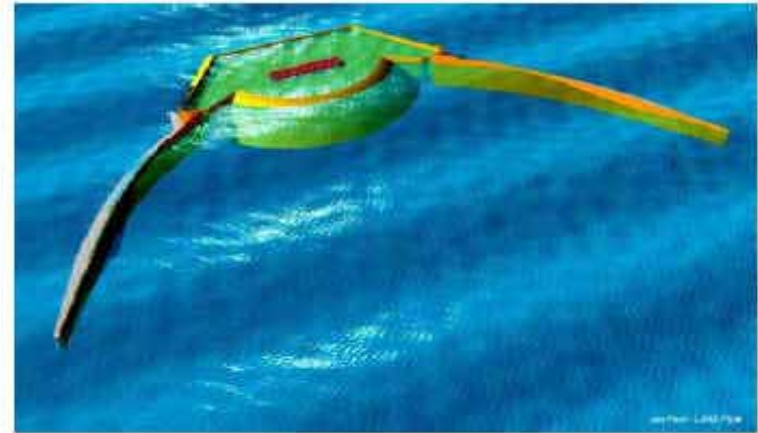
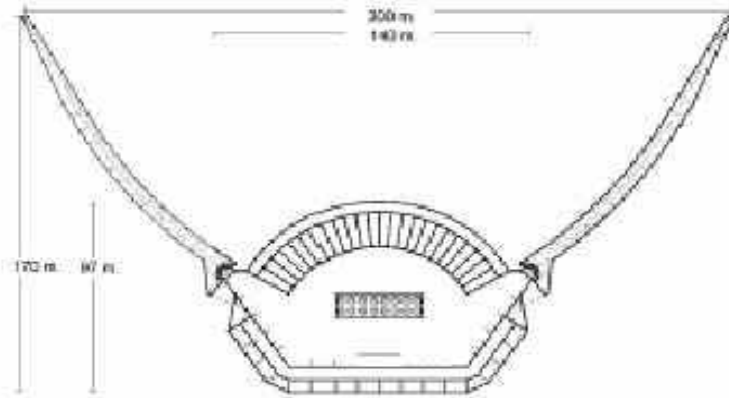


- How much air in the chambers i.e. crest height
- How much water to take out before next wave is coming

Demonstrator Project

- Device can generate up to 7MW - export capacity is grid limited
- Proposed site is off Pembrokeshire Coast
- Funding from WAG under Objective 1
- Device in-situ for 3-5 years only
- After that, device towed to deeper water site, either off Wales or elsewhere
- Site decommissioned

Wave Dragon



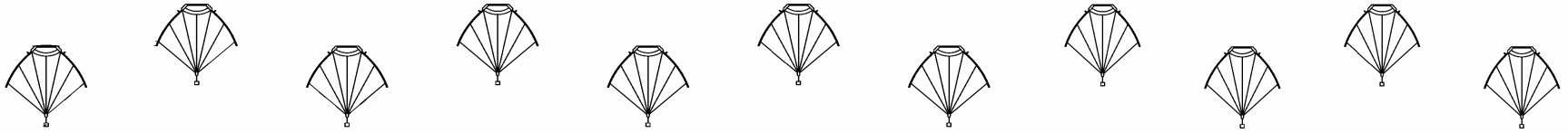
General Arrangement Drawing and Artists Impression

Distance between tips of arms	300m
Arm length	145m
Length (tip of arm to rear of central housing)	170m
Maximum height above sea level	6 – 3m
Draught	11-14m

Preliminary Dimensions

- Device is approximately the size of Thorn Island (at low tide)
- Or 1/20th the area of Skokholm

Wave Dragon - Power Plant Size



6.25 km

Electricity for 60,000 homes from:

- 11 units in a 6.25 km line resulting in a power plant, size: 77 MW
- A size of 5.5 km², which is 75% of the space needed for offshore wind farms at the same power
- At deep water (more than 25 meter) almost without visual impact

Ongoing Work

- EIA Scoping Report Issued
- Geophysical Survey (offshore) - complete
- Fisheries consultations initiated
- Landscape work initiated (ZVI's received)
- Navigation survey initiated January 06
 - **Repeated August**
- Benthic Survey initiated January 06
 - **Repeated August**

Outline Programme

- Environmental Impact Assessment to Winter 2006
- Submissions for Consents Winter 2006
- Potential receipt of Consents August 2007
- Start of Construction Q3 2007
- Deployment Q2 2008
- Environmental Monitoring up to 2011

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