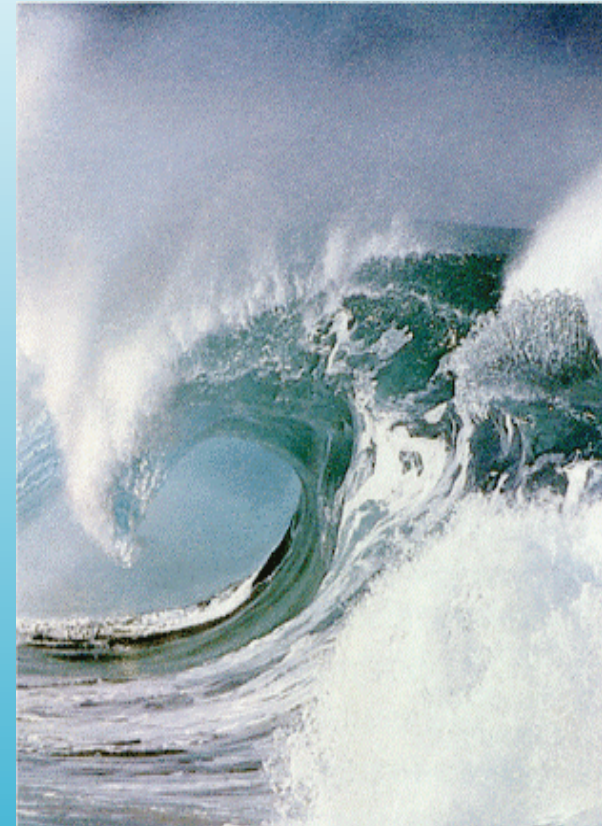




UK to NZ Mission on Renewable and Clean Energy

**AWATEA Meeting
Meridian Energy' Offices,
Wellington**

2 February 2009





Solent Ocean Energy Centre (SOEC)

An evaluation and research centre for
ocean energy technologies on the Isle
of Wight

Presentation to New Zealand Trade Mission

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Mission of the SOEC

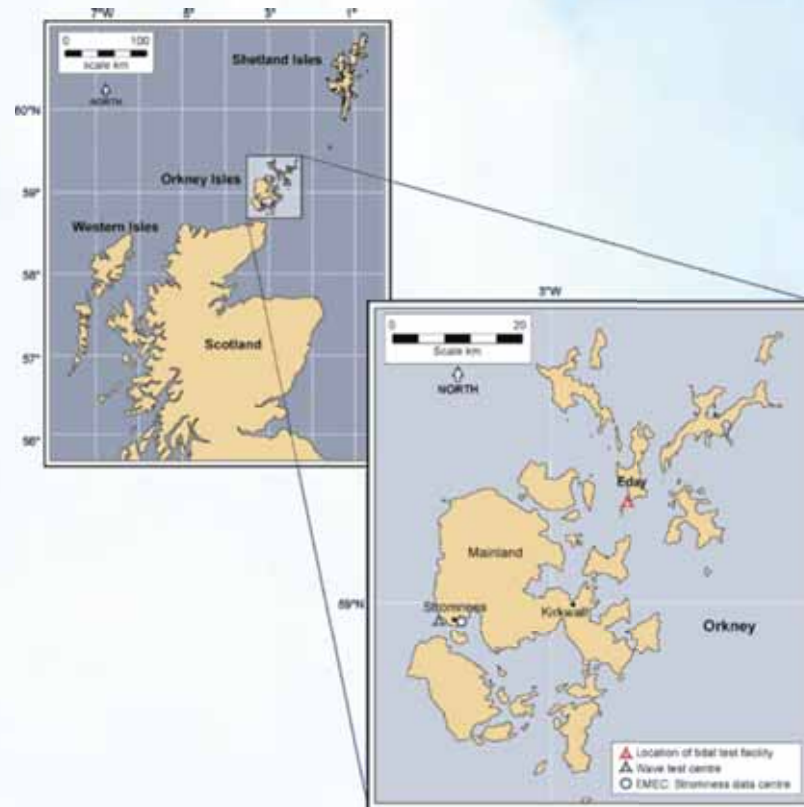


- Provide world class test and evaluation facilities for marine energy devices
- Promote tidal stream micro-generation
- Support local industry involvement in tidal stream energy technologies
- Encourage innovative concepts for marine energy generation

Compliments other Centres



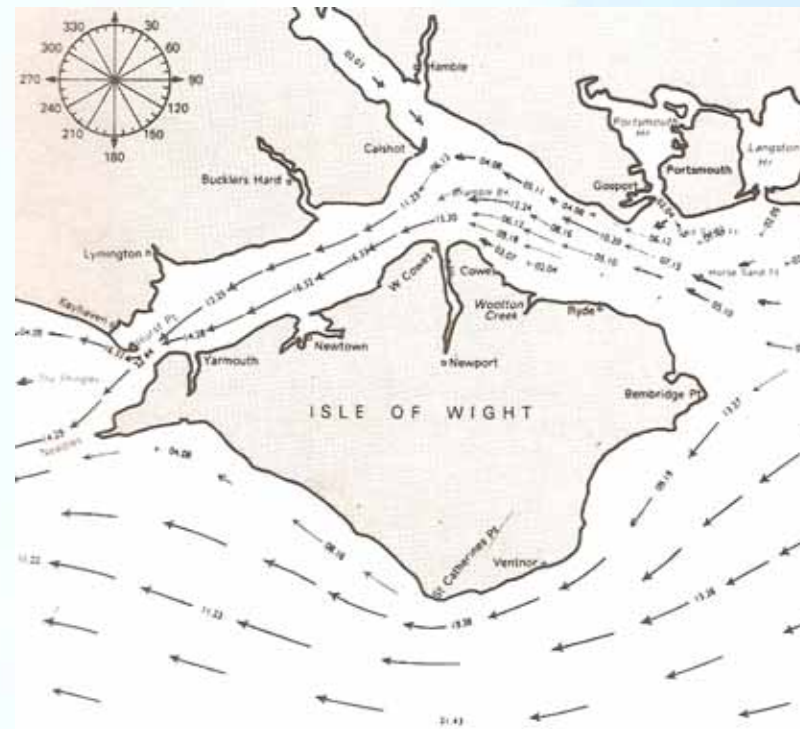
- One-stop shop for development and testing tidal devices
- “Nursery slope” for EMEC
- Tidal equivalent to Wavehub
- NaREC has no marine tidal test site



Why on the Isle of Wight?



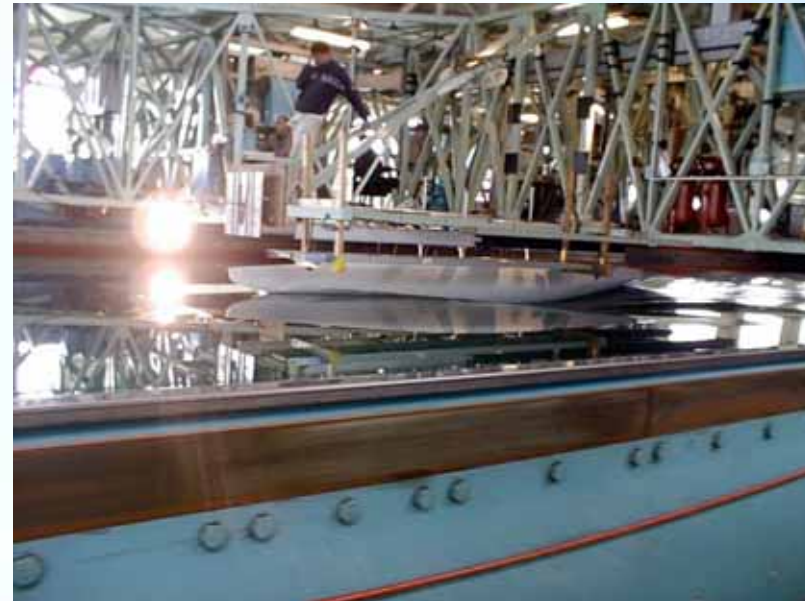
- Unique tidal flow regime
- Infrastructure of local marine companies
- Regional centres of associated expertise
- Data and knowledge at Centre for the Coastal Environment



SOEC Facilities



- Towing Tank
- Circulating Water Channel
- Deep tank
- Inshore marine test site
- Offshore marine test site



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Need for an inshore test site



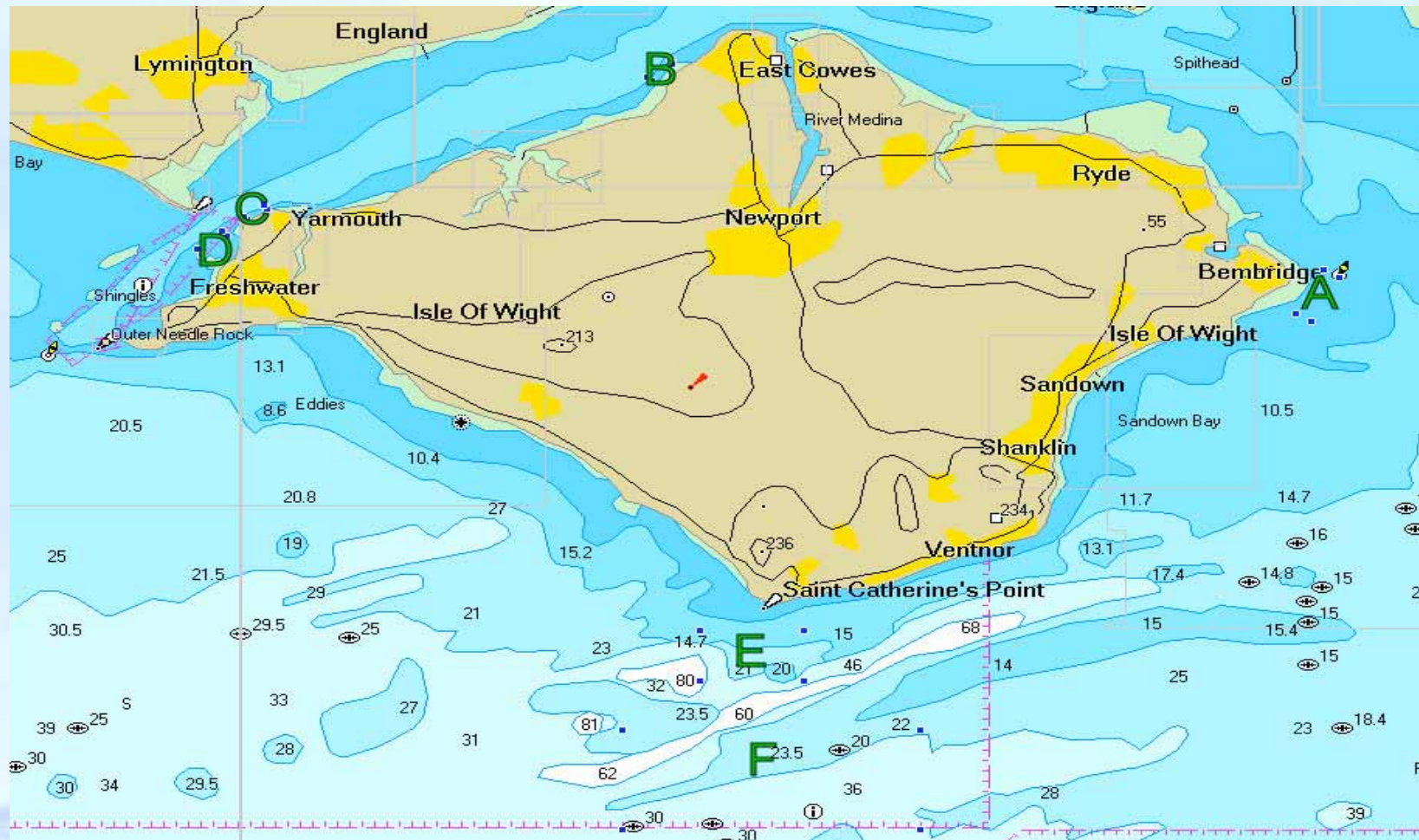
- Short term deployment of marine energy devices and scale models, in a high tidal stream environment sheltered from waves
- Practise installation, maintenance and decommissioning procedures
- Gain confidence in survivability of devices and practicality of procedures
- Within easy reach of harbour and onshore engineering backup

Inshore Site Selection



- Primary criteria
 - Tidal flow 1.25 m/s
 - Depth 10–30 m
 - Avoid commercial shipping channels
- Secondary criteria
 - Shelter from wind and waves
 - Harbour facilities
 - Area for shore base
 - Structure for cable
 - Avoid activities by other marine stakeholders
 - Avoid SACs etc

Marine Test Sites



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Recommendations



- Ranking of sites:
 - Fort Victoria
 - Fort Albert
 - Bembridge
 - Gurnard
- Fort Victoria has advantage of the Planetarium
- For final selection:
 - Conduct detailed tidal stream profiles
 - Engage with stakeholders
 - Research existing infrastructures on land

Inshore Site Cost Estimate



Item	Estimate (£k)
Scoping study and EIA	25
Geological assessment	5
Tidal velocity profile	5
Permits and consents	4
Seabed rental (pa)	0.1
Buoyage and lights	10
Shoreside station	3.5
TOTAL	52.6

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SOEC income



- Site rental by developers
- Funding from the public and private sectors for special projects such as:
 - Assessment of environmental impacts of tidal stream devices
 - Micro-generation at waterside developments
 - Interreg call for cross-Channel projects in the Arc Manche region

Objective in New Zealand



- Seek collaborative partners with interest in developing a shallow water test site for the optimisation of marine renewable energy devices
- Particular areas of interest:
 - Multi-functional moorings
 - Foundations
 - Options for power take-off and power utilisation