

# Testing Testing Testing

23<sup>rd</sup> May 2007

All Energy



Andrew Mill, Chief Executive  
NaREC New and Renewable Energy Centre

# NaREC Market Position



**Innovation**



Market Development  
Technical Development  
Testing Services  
Specific local projects  
Cluster activities  
Funding



**Realisation**



# NaREC Marine Industry

- Test facilities
  - Wave 1/10<sup>th</sup> scale 7 devices
  - Tidal 1/10<sup>th</sup> scale Tees Barrage
- Power offtake system development
- Contract design and development
- Linear test rig & university collaboration
- RAB Marine Group
- Site assessment
- Investments



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## The EnergyLINK Laboratory

- The Laboratory is a selection of electrical components which can be integrated to model a real distribution system or subsystem
- Virtual Power System
- Its main components are:
  - **Micro Generation components**
  - **Model Generation components**
  - **Model Distribution elements**
  - **Loads**
  - **Infrastructure**
  - **Prime Movers**



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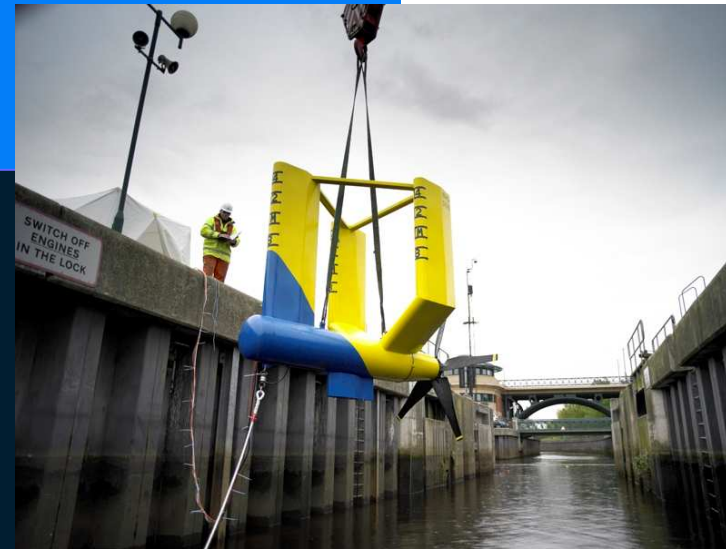
## Tidal Energy Testing 1

- TiDEL
  - 1/10<sup>th</sup> scale 2005
  - Combined wave and tidal stream testing
  - Power capture
  - Materials
  - Handling
  - Mooring
  - Structural Integrity



# NaREC Tidal Energy Testing

- EVOPOD
  - 1/10<sup>th</sup> scale
  - Power capture
  - Sensitivity to turbulence
  - Electrical characteristics
  - Potential for grid connection
  - Mooring studies



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## Wave Testing 1

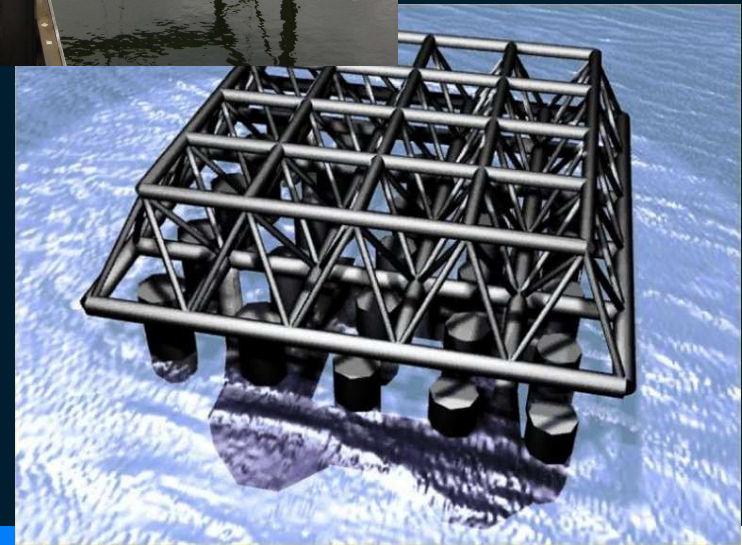
- Trident
  - 2 series of tests completed third planned
  - 1/10<sup>th</sup> scale device
  - Multiple device studies planned for next phase of testing
  - Power capture
  - Structural
  - Electrical characteristics
  - New float concepts



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## Wave Testing 2

- Manchester Bobber
  - 1/10<sup>th</sup> scale
  - Power capture
  - Materials
  - Handling logistics





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