1st International Conference on Renewable Energies Offshore

RENEW 2014

PROGRAMME

24 - 26 November 2014
IST Congress Centre
LISBON, PORTUGAL
ORGANISATION

Conference Chairman

Carlos Guedes Soares, IST, Universidade de Lisboa, Portugal

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- Anthony Lewis, Ireland
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- Iñigo J. Losada, Spain
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- John D. Sørensen, Denmark
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- John Sørensen, Denmark
- Jose-Luis Villate, Spain
- Kim Branner, Denmark
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- Lance Manuel, USA
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- Marc Vantorre, Belgium
- Mats Leijon, Sweden
- Matt Folley, United Kingdom
- Michael Hartnett, Ireland
- Peter Stansby, United Kingdom
- Puyang Zhang, China
- Rachel Nicholls-Lee, United Kingdom
- Rodrigo Carballo, Spain
- Roger Falconer, United Kingdom
- Simon Neill, United Kingdom
- Spyros Mavrakos, Greece
- Tomoki Ikoma, Japan
- Torgeir Moan, Norway
- Vallam Sundar, India
- Vengatesan Venugopal, United Kingdom
- Wanan Sheng, Ireland
- Wojciech Popko, Germany
- Ye Li, China
- Zhen Gao, Norway

Technical Programme & Conference Secretariat

Andreia Fernandes, IST, Universidade de Lisboa, Portugal
Maria de Fátima Pina, IST, Universidade de Lisboa, Portugal
Sandra Ponce, IST, Universidade de Lisboa, Portugal
**SCHEDULE AT A GLANCE**

**Monday, 24 November 2014**

**Registration** (Hall 01 – from 8h00 onwards)

**Instituto Superior Técnico – Congress Centre**

**Opening Session** (9h00-10h45) - Auditorium

**Keynote Lectures 1**

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<tr>
<th>Room 01.1 (11h15-12h45)</th>
<th>Room 02.1 (11h15-12h45)</th>
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<th>Room 02.3 (11h15-12h45)</th>
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<tbody>
<tr>
<td>Resource Assessment 1</td>
<td>Wave Energy 1</td>
<td>Wind Energy 1 -</td>
<td>Tidal Energy 1</td>
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<tr>
<td>– Wind 1</td>
<td>Dynamics &amp; Design</td>
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**Coffee-break (10h45-11h15)**

**Lunch (12h45-14h15)**

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<td>Wave Energy 2 – OWC 1</td>
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<td>Tidal Energy 2</td>
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<td>– Wind 2</td>
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**Coffee-break (15h45-16h15)**

**Room 01.1 (16h15-17h45) | Room 02.1 (16h15-17h45) | Room 02.2 (16h15-17h45) | Room 02.3 (16h15-17h45) |
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<td>Resource Assessment 3</td>
<td>Wave Energy 3 – OWC 2</td>
<td>Wind Energy 3</td>
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<tr>
<td>– Wave 1</td>
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18:00h – 19:30h – Social Get Together

**Tuesday, 25 November 2014**

**Registration** (Hall 01 – from 8h00 onwards)

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<td>Resource Assessment 4</td>
<td>Wave Energy 4</td>
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<td>Mooring Systems</td>
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<tr>
<td>– Wave 2</td>
<td>Structures</td>
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**Coffee-break (10h30-11h00)**

**Lunch (12h30-14h00)**

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<td>Resource Assessment 5</td>
<td>Wave Energy 5</td>
<td>Wind Energy 5 –</td>
<td>Economic Assessment</td>
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<tr>
<td>– Wave and Current</td>
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<td>Semisubmersible</td>
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**Coffee-break (15h30-16h00)**

**Room 01.1 (16h00-17h30) | Room 02.1 (16h00-17h30) | Room 02.2 (16h00-17h30) | Room 02.3 (16h00-17h30) |
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<td>Resource Assessment 6</td>
<td>Wave Energy 6 – Surge</td>
<td>Wind Energy 6 –</td>
<td>Maintenance Planning</td>
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<tr>
<td>– Tidal 1</td>
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<td>Hydrodynamic Fields</td>
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20:00 h - Conference Dinner

**Wednesday, 26 November 2014**

**Registration** (Hall 01 – from 8h00 onwards)

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<td>Resource Assessment 7</td>
<td>Wave Energy 7 - Point</td>
<td>Wind Energy 7 –</td>
<td>Risk and Reliability</td>
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<tr>
<td>– Tidal 2</td>
<td>Absorbers</td>
<td>Aerodynamics</td>
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**Coffee-break (10h30-11h00)**

**Lunch (12h30-14h00)**

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<th>Room 02.3 (14h00-15h30)</th>
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<tr>
<td>Wave Energy 8</td>
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<td>Multiuse Platforms</td>
<td>Ocean Energy Devices 1</td>
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</table>

**Coffee-break (15h30-16h00)**

**Room 02.1 (16h00-17h30) | Room 02.3 (16h00-17h30) |
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<td>Wave Energy 9</td>
<td>Ocean Energy Devices 2</td>
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INORE Networking Event
SESSIONS INDEX – alphabetical order

- Economic Assessment – Room 02.3
  Tuesday, 25th November 2014 – 14:00h – 15:30h

- Keynote lectures 1 - Auditorium
  Monday, 24th November 2014 – 9:00h - 10h45h

- Keynote Lectures 2 – Auditorium
  Tuesday, 25th November 2014 – 11:00h – 12:30h

- Keynote Lectures 3 – Auditorium
  Wednesday, 26th November 2014 – 11:00h -12:30h

- Maintenance Planning – Room 02.3
  Tuesday, 25th November 2014  – 16:00h -17:30h

- Mooring Systems – Room 02.3
  Tuesday, 25th November 2014 – 9:00h – 10:30h

- Multiuse Platforms – Room 02.2
  Wednesday, 26th November 2014 – 14:00h -15:30h

- Ocean Energy Devices 1 – Room 02.3
  Wednesday, 26th November 2014 – 16:00h – 17:30h

- Ocean Energy Devices 2 – Room 02.3
  Wednesday, 26th November 2014 – 9:00h -10:30h

- Resource Assessment 1 - Wind 1 - Room 01.1
  Monday, 24th November 2014 – 11:15h – 12:45h

- Resource Assessment 2 - Wind 2 – Room 01.1
  Monday, 24th November 2014 – 14:15h – 15:45h

- Resource Assessment 3 – Wave 1 – Room 01.1
  Monday, 24th November 2014 – 16:15h – 17:45h

- Resource Assessment 4 – Wave 2 – Room 01.1
  Tuesday, 25th November 2014 – 9:00h – 10:30h

- Resource Assessment 5 - Wave & Current – Room 01.1
  Tuesday, 25th November 2014 – 14:00h – 15:30h

- Resource Assessment 6 – Tidal 1 – Room 01.1
  Tuesday, 25th November 2014 – 16:00h – 17:30h

- Resource Assessment 7 – Tidal 2 – Room 01.1
  Wednesday, 26th November 2014 – 9:00h -10:30h

- Risk & Reliability – Room 02.3
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- Tidal Energy 1 – Room 02.3
  Monday, 24th November 2014 – 11:15h – 12:45h

- Tidal Energy 2 – Room 02.3
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- Tidal Energy 3 – Farms – Room 02.3
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- Wave Energy 1 – Room 02.1
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- Wave Energy 2 – OWC 1 – Room 02.1
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- Wave Energy 3 – OWC 2 – Room 02.1
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- Wave Energy 4 – Room 02.1
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- Wave Energy 5 – Room 02.1
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- Wave Energy 6 – Surge – Room 02.1
  Tuesday, 25th November 2014 – 16:00h – 17:30h

- Wave Energy 7 – Point Absorbers – Room 02.1
  Wednesday, 26th November 2014 – 9:00h -10:30h

- Wave Energy 8 – Room 02.1
  Wednesday, 26th November 2014 – 14:00h -15:30h

- Wave Energy 9 – Room 02.1
  Wednesday, 26th November 2014 – 16:00h -17:30h

- Wind Energy 1 – Dynamics & Design – Room 02.2
  Monday, 24th November 2014 – 11:15h – 12:45h

- Wind Energy 2 – Spar – Room 02.2
  Monday, 24th November 2014 – 14:15h – 15:45h

- Wind Energy 3 – Room 02.2
  Monday, 24th November 2014 – 16:15h – 17:45h

- Wind Energy 4 – Structures – Room 02.2
  Tuesday, 25th November 2014 – 9:00h – 10:30h

- Wind Energy 5 – Semisubmersible – Room 02.2
  Tuesday, 25th November 2014 – 14:00h – 15:30h

- Wind Energy 6 – Hydrodynamic Fields – Room 02.2
  Tuesday, 25th November 2014 – 16:00h – 17:30h

- Wind Energy 7 – Aerodynamics – Room 02.2
  Wednesday, 26th November 2014 – 9:00h -10:30h
## Detailed Programme

### Monday, 24th November 2014

#### Monday, from 9:00 to 10:45 h

**KEYNOTE LECTURES 1**

*Chair: Carlos Guedes Soares*

- **Auditorium**
  - **Keynote Lectures 1**
    - **Chair:** Carlos Guedes Soares
    - **Topics:**
      1. Developments in oscillating water column wave energy converters and air turbines
         - *António Falcão, Instituto Superior Técnico, Portugal*
      2. Recent developments of analysis and design of offshore wind turbines for deep water
         - *Torgeir Moan, NTNU, Norway*

#### Monday, from 11:15 h to 12:45 h

**RESOURCES ASSESSMENT 1 - WIND 1**

*Chair: Ana Estanqueiro*

- **Room 01.1**
  - **Keynotes:**
    - Spatial and Temporal Characteristics of Wind and Wind Power off the Coasts of Brittany
      - *A. Bentamy and D. Croize-Fillon*
    - Preliminary offshore wind resource assessment in the Strait of Gibraltar region from ASCAT data
      - *A. Agüera-Pérez, J.C. Palomares-Salas, J.J. Gonzalez de la Rosa and J.M. Sierra-Fernandez*
    - An operational wind forecast system for the Portuguese pilot area of Aguçadoura
      - *N. Salvação and C. Guedes Soares*
    - Preliminary Study on an Offshore Wind Energy Resource Monitoring System
      - *S. Petersen, A. Sarmento and C. Godreau*

#### Monday, from 11:15 h to 12:45 h

**WAVE ENERGY 1**

*Chair: António Falcão*

- **Room 02.1**
  - **Keynotes:**
    - Broad band wave energy conversion with high capture width by the three-float line absorber M4 with multimode resonance and surge
      - *P. Stansby, E. Carpintero Moreno, T. Stallard, A. Maggi and R. Eatock Taylor*
    - Finite order approximations to hydrodynamic parameters for wave energy applications
      - *A. Roessling and J. Ringwood*
    - Harnessing the kinetic and potential wave energy: design and development of a new wave energy converter
      - *P. Rosa-Santos, F. Taveira-Pinto and J. Ribeiro*
    - Use of Concrete as the Primary Construction Material for the Pelamis Wave Energy Convertor
      - *N. Salvação and C. Guedes Soares*

#### Monday, from 11:15 h to 12:45 h

**WIND ENERGY 1 - DYNAMICS & DESIGN**

*Chair: Torgeir Moan*

- **Room 02.2**
  - **Keynotes:**
    - Study on the effect of ice-structure interaction on the dynamic response of offshore wind turbine
      - *W. Shi, X. Tan, Z. Gao and T. Moan*
    - Design analysis and installation of a large-scale composite bucket foundation for offshore wind turbine
      - *P. Zhang, H. Ding and C. Le*
    - Quick time-domain simulation of the dynamics and power production of a floating offshore wind turbine within a farm
      - *Y. Debruyne, M. Alves and A. Sarmento*
    - Wind farm control by dynamic power set-point adjustment to maximise power production and redistribute fatigue loads
      - *S. Poushpas and W.E. Leithead*

#### Monday, from 14:15 h to 15:45 h

**TIDAL ENERGY 1**

*Chair: Luis Nuñez Rivas*

- **Room 02.3**
  - **Keynotes:**
    - Experimental investigation of the wake of an horizontal axis tidal current turbine
      - *B. Morandi, G.P. Romano, D. Dhomé, J.C. Allo, M. Costanzo and F. Di Felice*
    - The Effect of Axial Flow Misalignment on Tidal Turbine Performance
      - *C.H. Frost, P.S. Evans, T. O'Doherty and D.M. O'Doherty*
    - Development of An Optimal Approach from hydrofoil to Blade for A Horizontal Axis Marine Current Turbine

#### Monday, from 14:15 h to 15:45 h

**RESOURCES ASSESSMENT 2 – WIND 2**

*Chair: Abderrahim Bentamy*

- **Room 01.1**
  - **Keynotes:**
    - Offshore Wind energy assessment for the Iberian coast
      - *N. Salvação and C. Guedes Soares*
    - High resolution reanalysis data and floating met-mast measurements at deep water locations influenced by coastal topography
      - *F. del Jesus, R. Guanche and I.J. Losada*
    - Motion effects on lidar wind measurement data of the EOLOS buoy
      - *O. Bischoff, I. Wuerth, J.Tiana Alsina, M. Gutierrez and P. W. Cheng*
    - Motion effects on lidar wind measurement data of the EOLOS buoy
      - *O. Bischoff, I. Wuerth, J.Tiana Alsina, M. Gutierrez and P. W. Cheng*
    - Evaluation of offshore wind potential for Western coast of India: a preliminary study
      - *G. Nagababu, D. Bavishi, S.S. Kachhwaha and V. Savsani*
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<th>Time</th>
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<th>Room</th>
<th>Chair(s)</th>
<th>Presentations</th>
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| Monday, from 14:15 h to 15:45 h | **WAVE ENERGY 2 – OWC 1** | Room 02.1 | Peter Stansby                                                             | An Experimental and Numerical Analysis of an I-Beam Attenuator-Type, Oscillating Water Column Wave Energy Converter  
H.B. Bingham, K. Nielsen and D. Ducasse  
Performance assessment of an oscillating water column spar-buoy for oceanographic purposes  
Hydrodynamics of OWC wave energy converters  
W. Sheng, R. Alcorn and T. Lewis  
The First Full-Scale Rewec3 Break Waters for Wave Energy Harvesting in the Mediterranean Sea  
F. Arena, G. Malara and A. Romolo |
| Monday, from 14:15 h to 15:45 h | **WAVE ENERGY 3 – OWC 2** | Room 02.1 | Harry Bingham                                                             | A Small scale field experiment to analyse a U-OWC wave energy converter in real seas  
F. Arena, G. Malara, A. Romolo, V. Fiamma, V. Laface, F. Strati and G. Barbaro  
Experimentally calibrated simplified time-domain model for a multi-chamber OWC  
A. Iturrioz, J. Sarmiento, J.A. Armesto, R. Guanche, C. Vidal and I.J. Losada  
A head driven model of turbine fence performance  
R. H. J. Wilden and T. Nishino |
| Monday, from 16:15 h to 17:45 h | **WIND ENERGY 2 - SPAR**                       | Room 02.2 | Vincenzo Nava                                                             | On the arrangement of a small scale field experiment of a spar-type support for offshore wind turbine  
F. Arena, V. Nava, C. Ruzzo and F. Strati  
Evaluating Corrections to Linear Boundary Element Method Hydrodynamics to Account for Second Order Forces on Spar Buoy Wind Turbine Support Structures  
R.E. Harries and A. Alexandre  
Time and Frequency Domain Analysis of Self Installing Mono Column Wind Float during Operational Phase  
U. Ramayan, R. Panneer Selvam and N. Srinivasan |
| Monday, from 16:15 h to 17:45 h | **WIND ENERGY 3**                               | Room 02.2 | Zhen Gao                                                                  | The GICON-TLP for wind turbines – The path of development  
F. Adam, T. Myland, F. Dahlhaus and J. Grossmann  
Conceptual Design and advanced hydro-aero-elastic modelling of a TLP concept for Floating Wind Turbine applications  
T. Mazarakos, D. Manolas, T. Grapsas, S. Mavrakos, V. Riziotis and S. Voutsinas  
Towing tests for the GICON®-TLP for offshore wind turbines  
T. Myland, F. Adam, F. Dahlhaus and J. Großmann  
Windfloat Design for Different Turbine Sizes  
J. George, A. Sarmento and C. Godreau |
| Monday, from 16:15 h to 17:45 h | **TIDAL ENERGY 2**                              | Room 02.3 | Reza Ahmadian                                                             | Methodologies for Tidal Energies Converters evaluation on early project phases  
L.R. Nuñez Rivas, A. Lopez Pinero, J.A. Somolios Sanchez, F. Robledo de Miguel and M. Espin Garcia  
Hamessing tidal currents in an estuary: a comparative impact assessment between different turbine configurations  
M. Sanchez, R. Carballo, V. Ramos and G. Iglesias  
A head driven model of turbine fence performance  
R. H. J. Wilden and T. Nishino |
| Monday, from 16:15 h to 17:45 h | **TIDAL ENERGY 3 - FARMS**                      | Room 02.3 | Simon Neill                                                               | Modelling the hydro-environmental impacts of tidal farms with the use of a two-way nested model  
N. O'Brien, S. Nash, and M. Hartnett  
Impact of Tidal turbine support structures on tidal farm power  
S. Muchala and R.H.J. Wilden  
An Experimental Investigation of Blockage in a Short Fence Array of Tidal Turbines  
S. Cooke, R.H.J. Wilden, B.W. Byrne, T. Stallard and T. Feng  
Evaluation of Wake Models for Predicting Load on Tidal Stream Turbines within Arrays  
T. Stallard, T. Feng and P. Stansby |
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<th>Chair</th>
<th>Location</th>
<th>Title</th>
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<td><strong>RESOURCE ASSESSMENT 4 – WAVE 2</strong></td>
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<td></td>
<td>Room 01.1</td>
<td>German R. Rodriguez</td>
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<td>Wave resource characterisation for energy production computations of WECs</td>
<td>R. Carballo, M. Sanchez, V. Ramos, A. Castro, F. Taveira and G. Iglesias</td>
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<td>Assessing offshore renewable energy technologies based on natural conditions and site characteristics</td>
<td>C. Wimmler, G. Hejazi, E. de Oliveira Fernandes, C. Moreira and S. Connors</td>
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<td>Wave power resources at Portuguese test sites from 11-year hindcast data</td>
<td>D. Silva, P. Martinho and C. Guedes Soares</td>
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<td>Assessment of extreme wave height events in Galway Bay using high frequency radar (CODAR) data</td>
<td>R. Atan, J. Goggins and S. Nash</td>
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<td><strong>Tuesday, from 9:00h to 10:30 h</strong></td>
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<td><strong>WAVE ENERGY 4</strong></td>
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<td>Room 02.1</td>
<td>Wanan Sheng</td>
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<td>Numerical Wave Tank Identification of Nonlinear Discrete Time Hydrodynamic Models</td>
<td>J. Davidson, S. Giorgi and J.V. Ringwood</td>
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<td>An implicit model of a submerged horizontal cylinder oscillating about an off-centered axis as a wave energy converter</td>
<td>A. Abbasnia, M. Ghiasi, J. Barandiaran and C. Guedes Soares</td>
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<td>Wave forces on a floating structure based on Boussinesq formulation in shallow water</td>
<td>S.C. Mohapatra and C. Guedes Soares</td>
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<td><strong>Tuesday, from 9:00h to 10:30 h</strong></td>
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<td><strong>WIND ENERGY 4 - STRUCTURES</strong></td>
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<td>Room 02.2</td>
<td>John D. Sørensen</td>
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<td>A study of fatigue crack growth of offshore wind turbine monopile steel in air and seawater</td>
<td>O. Adedipe and F. Brennan</td>
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<td>Assessment of the retardation of in-service cracks in offshore welded structures subjected to variable amplitude load</td>
<td>B. Yeter, Y. Garbatov and C. Guedes Soares</td>
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<td>Joint Earthquake and Ocean Wave Action on the Monopile Wind Turbine Foundation: An Experimental Study</td>
<td>H. Li, W. Rong, X. Zheng and W. Li</td>
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<td><strong>MOORING SYSTEMS</strong></td>
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<td>Room 02.3</td>
<td>Vincenzo Nava</td>
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<td>CFD study of a moored floating cylinder: Comparison with experimental data</td>
<td>J. Palm, C. Eskilsson, G. Moura Paredes and L. Bergdahl</td>
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<td>Applicability of offshore mooring and foundation technologies for marine renewable energy (MRE) device arrays</td>
<td>M. Karimirad, S. Weller, L. Johanning and K. Koushan</td>
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<td>Performance improvements of mooring systems for wave energy converters</td>
<td>P. Casaubielh, F. Thiebaut, C. Retzlal, M. Shaw and W. Sheng</td>
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<td>Assessment of mooring configurations on the performance of a floating oscillating water column energy converter</td>
<td>H. Gol Zaroudi, K. Rezanejad and C. Guedes Soares</td>
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<td>Characterisation of the wave resource: the crucial points</td>
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<td>Gregorio Iglesias, Plymouth University, UK</td>
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<td>Reliability and Maintenance for offshore wind turbines and wave energy devices</td>
<td>John D. Sørensen, Aalborg University, Denmark</td>
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<td>Rodrigo Carballo</td>
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<td>Recent developments in wave-current interaction and sediment impact studies at a planned tidal-stream array at the Skerries, UK</td>
<td>M. Reza Hashemi, S.P. Neill, P.E. Robins, M. Lewis, S.L. Ward and A.G. Davies</td>
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<td>An operational wave forecast system for the Galway bay</td>
<td>A.R. Bento, P. Martinho, N. Salvação and C. Guedes Soares</td>
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<td><strong>WAVE ENERGY 5</strong></td>
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<td>The extensive R&amp;D behind the Weptos WEC</td>
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<td>A. Pecher, J.P. Kofoed and T. Larsen</td>
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<td>Experimental study on operation performance of wave pressure pump</td>
<td>C. Yang and Y. Zhang</td>
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Application of sub-optimal techniques to a gyroscopic Wave Energy Converter
G. Bracco, E. Giorcelli, M. Martini, G. Mattiazzo, B. Passione, M. Raffero and G. Vissio
Pump and gas accumulator based phase control of wave energy converters
J.F. Gaspar, M.P. Calvario and C. Guedes Soares

Tuesday, from 14:00h to 15:30 h
WIND ENERGY 5 - SEMISUBMERSIBLE
Room 02.2
Chair: Felice Arena
Comparison of Numerical and Experimental Data for a Semi-Submersible Type Floating Offshore Wind Turbine
E. Uzunoglu and C. Guedes Soares
Investigation of wind speed effect on dynamics of a typical offshore floating wind turbine.
M. Asghari and C. Guedes Soares
Experimental Studies on the Hydrodynamic Behavior of a Semi-Submersible Offshore Wind Platform
The influence of bracings on the hydrodynamic modelling of a semi-submersible offshore wind turbine platform
E. Uzunoglu and C. Guedes Soares

Tuesday, from 14:00h to 15:30 h
ECONOMIC ASSESSMENT
Room 02.3
Chair: Anthony Lewis
Quantification of the influence of climate on predicted and observed cost of energy for offshore wind
I. Dinwoodie, D. McMillan, Y. Dalgic, I. Lazakis and M. Revie
Calculation of the Levelized Cost of Energy (LCOE) of a wave energy converter
L. Castro-Santos, E. Martins and C. Guedes Soares
Safeguarding the Pathway to Cost Competitive Tidal Energy
M. Papaelias, V. Dimlaye, J. Jimenez, G. Ye and L. Constantinou

Tuesday, from 16:00h to 17:30 h
RESOURCE ASSESSMENT 6 – TIDAL 1
Room 01.1
Chair: Reza Ahmadian
Sensitivity Study of Modelling of Severn Barrage Performance
S. Bray, R. Ahmadian and R. Falconer
Optimal phasing of the European tidal stream resource using the greedy algorithm with penalty function
S.P. Neill, M. Reza Hashemi and M.J. Lewis
Data Assimilation with High-Frequency (HF) Radar Surface Currents at a Marine Renewable Energy Test Site
L. Ren, S. Nash and M. Hartnett
ADCP measurements of Ocean Currents near Miyake Island for a Kuroshio Energy Converter Development Project
K. Kiyomatsu, T. Waseda, K. Takagi, S.M. Varlamov and Y. Miyazawa

Tuesday, from 16:00h to 17:30 h
WAVE ENERGY 6 - SURGE
Room 02.1
Chair: Claes Eskilsson
Development and validation of Fluid Structure Interaction Methods for an Oscillating Wave Surge Converter
C. Windt, P. Schmitt and J. Nicholson
Validating numerically generated wave excitation force vectors through the physical testing of a 40th scale oscillating wave surge converter
D. Crooks, J. van’t Hoff, C. Cummins and T. Whittaker
Determination of non-linear damping coefficients of flap-type wave energy converters using free decay tests
H. Asmuth, P. Schmitt and A. Henry
Numerical investigation of submerged surging plate wave energy converter
N.T. Bozo, D. Karmakar and C. Guedes Soares
CFD analysis of a rigid bottom fixed submerged structure
J. Gadelho, D. Karmakar, A. Lavrov and C. Guedes Soares

Tuesday, from 16:00h to 17:30 h
WIND ENERGY 6 – HYDRODYNAMIC FIELDS
Room 02.2
Chair: Gregorio Iglesias
Regional numerical modelling of offshore wind turbines impact on hydrodynamics and sediment transport
A. Rivier, A.C. Bennis, V. Magar, G. Pinon & M. Gross
The Hydrodynamics of Monopile Foundations - Experimental Measurements of Near Bed and Free Stream Turbulence
C. Rogan, J. Miles, D. Simmonds and G. Iglesias
Laboratory simulation of resonance amplification of the hydrodynamic fields in the vicinity of wind farm masts
H. Gunnoo, N. Abcha, D. Mouzat and A. Ezersky
Experimental characterisation of wave induced flow fields due to an offshore wind farm mast

Tuesday, from 16:00h to 17:30 h
MAINTENANCE PLANNING
Room 02.3
Chair: Ângelo P. Teixeira
Characterization of the logistic requirements for the marine renewable energy sector
B. Tellant, A. Raventos, P. Chairo, M. Alves and A. Sarmento
Development and evaluation of an integrated condition monitoring system for the tidal energy harvesting devices
A. Romero, J. Jimenez, S. Soua, J.L. Ferrando Chacon and T.-H. Gan
Dynamic Monitoring of wind turbines: case studies on- and off-shore
G. Oliveira, W. Weijtjens, G. de Sitter, F. Magalhães, I. Cunha, E. Caetano and C. Devriendt
Modelling and simulation of the operation and maintenance of offshore wind turbines
F.P. Santos, A.P. Teixeira and C. Guedes Soares
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<td><strong>RESOURCE ASSESSMENT 7 – TIDAL 2</strong>  Room 01.1</td>
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| Chair: Simon Neill | The direct effect of waves on the tidal stream energy resource  
M. Lewis, R. Hashemi, S. Neill and P. Robins  
Numerical Modelling of a Tidal Lagoon along the North Wales Coast  
A. Angeloudis, R. Ahmadian, B. Bockelmann-Evans and R.A. Falconer  
Tidal current energy resource assessment technique and procedure applied in western coastal region, South Korea  
Numerical investigation of the tidal energy potential in the Portuguese shelf  
M. Marta-Almeida and C. Guedes Soares |
| Wednesday, 9:00h to 10:30 h | **WAVE ENERGY 7 – POINT ABSORBERS**  Room 02.1 |
| Chair: Wanan Sheng | Effect of change in floater shapes for hydraulic power take-off point absorber WEC  
A. Sinha, D. Karmakar and C. Guedes Soares  
Finite element analysis of a spherical buoy for a point absorber wave energy converter  
C. Malça, R. Felismina and P. Beirão  
Numerical modelling of array of heaving point absorbers  
A. Sinha, D. Karmakar and C. Guedes Soares |
| Wednesday, 9:00h to 10:30 h | **WIND ENERGY 7 - AERODYNAMICS**  Room 02.2 |
| Chair: Frank Adam | Sensitivity to Aerodynamic Forces for the Accurate Modelling of Floating Offshore Wind Turbines  
G. Fernandes, M. Make, S. Gueydon and G. Vaz  
Aerodynamic Investigation of the Flow over a Multi-Megawatt Slender Bladed Horizontal-Axis Wind Turbine  
M. Sayed, T. Lutz and E. Krämer  
Numerical simulation of aerodynamic performance for three dimensional wind turbine  
S. Tarbit and C. Guedes Soares  
3D Numerical Study on the Aerodynamics of Micro-tabs of HAWTs  
H. Chen and N. Qin |
| Wednesday, 9:00h to 10:30 h | **RISK AND RELIABILITY**  Room 02.3 |
| Chair: Ângelo P. Teixeira | Risk assessment of wave energy project feasibility  
E. Martins, A.P. Teixeira and C. Guedes Soares  
A numerical method to transfer an onshore wind turbine FMEA to offshore operational conditions  
X. Yu, D. Infield, S. Barbouchi and R. Seraoui  
Review of wind turbine accident and failure data  
F. P. Santos, A. P. Teixeira and C. Guedes Soares  
Demonstration of Methods and Tools for the Optimisation of Operational Reliability of Large-Scale Industrial Wind Turbines  
| Wednesday, 11:00h to 12:30 h | **KEYNOTE LECTURES 3**  Auditorium |
| Chair: Carlos Guedes Soares | Informing the spatial planning of marine currents tidal turbine arrays  
**AbuBakr S. Bahaj, Univ. of Southampton, UK**  
Barriers to bringing down the costs of ocean energy  
**Anthony Lewis, University of Cork, Ireland** |
| Wednesday, 14:00h to 15:30 h | **WAVE ENERGY 8**  Room 02.1 |
| Chair: António Falcão | Experimental loss analysis on a model-scale radial bidirectional air-turbine for wave energy conversion  
C. Moisel and T.H. Carolus  
Application of Linear Model Predictive Control to the ISWEC  
G. Bracco, E. Giorgeli, G. Mattiazzo, B. Passione, M. Raffero and G. Vissio  
Comparative study of lever mechanisms connected to oil-hydraulic power take-off systems  
M.P. Calvário, J.F. Gaspar and C. Guedes Soares  
Comparative analysis of two offshore wave energy conversion devices: Cape Verde vs. Flexible Drive Line designs  
J.V. Taboada, H.G. Lemu and J.A. Perez |
**Wednesday, from 14:00h to 15:30 h**
**MULTIUSE PLATFORMS**
Room 02.2

Chair: Carlos Guedes Soares

**Numerical and experimental study of selected combined concepts of floating wind turbines and wave energy converters in the MARINA Platform Project**
Z. Gao, L. Wan, C. Michailides, T. Moan, T. Soulard and S. Bourdier

**Review on the design criteria and scope of multi-use offshore platforms**
D. Karmakar and C. Guedes Soares

**Response Analysis of the Combined Wind/Wave Energy Concept SFC in Harsh Environmental Conditions**
C. Michailides, Z. Gao and T. Moan

**Optimization of a combined wind and wave concept with the focus on power and motions**
L. Wan, Z. Gao and T. Moan

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**Wednesday, from 14:00h to 15:30 h**
**OCEAN ENERGY DEVICES 1**
Room 02.3

Chair: Luis Gato

**Powering an Autonomous Offshore Monitoring Buoy**
D.B.S. Lopes and H. Sarmento

**Vortex Induced Vibration – Feasibility of Energy Extraction**
K. Narendran, K.V.K. Varma, D. Amit, K. Murali and V. Sundar

**Tip Leakage Effect on Wells Turbine**
P. Halder and A. Samad

**Numerical simulation of the motions of one deep-sea DP3 MPV in oblique waves using the PID algorithm**
P. Xie and H. Luo

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**Wednesday, from 16:00h to 17:30 h**
**WAVE ENERGY 9**
Room 02.1

Chair: Carlos Guedes Soares

**CFD Study of the Overtopping Discharge of the Wave Dragon Wave Energy Device**
C. Eskilsson, J. Palm, J.P. Kofoed and E. Friis-Madsen

**3D Numerical modelling of Oscillating Water Column wave energy conversion devices: current knowledge and OpenFOAM® implementation**
I. Simonetti, L. Cappietti, H. El Safti and H. Oumeraci

**Theoretical and experimental investigation on causal latching and rotational speed control of an OWC spar-buoy wave energy converter**

**Effect of spectral shape uncertainty in short term performance of a Oscillating Water Column device**
K. Rezanejad and C. Guedes Soares

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**Wednesday, from 16:00h to 17:30 h**
**OCEAN ENERGY DEVICES 2**
Room 02.3

Chair: Vallam Sundar

**Development of overtopping-type wave power generate equipment**
M. Minami and H. Tanaka

**Experiment of 20kW Ocean Thermal Energy Conversion in Korea**

**Performance Analysis of OTEC cycle on Working Fluid**
WIFI:
Free WIFI access at IST Campus during RENEW 2014 will be available to all participants:

Network: Eudoram-guest
- Username: RENEW
- Password: v2KFRs

LUNCHES
During the RENEW2014 Conference, lunches for the participants will be served in the “Vasco da Gama” Restaurant at the Hotel Holiday Inn, which is within a 2-minute walk from the Conference location (please see the map on the last page to find the location of the hotel).

Adresse:
Hotel Holiday Inn
Av. Antonio Jose de Almeida, 28-A
1000-044 Lisboa
Tel: +351 21 004 4000
Fax: +351-21 793 8374
Web: http://www.holiday-inn.com/lisbonprt

LOCATION OF THE CONFERENCE DINNER:
ESPAÇO TEJO
CENTRO DE CONGRESSOS DE LISBOA
Praça das Indústrias,
1300-307 LISBOA
T. (+351) 21 3605610
The 1st International Conference on Renewable Energies Offshore will be held at the Congress Centre of Instituto Superior Técnico at the Alameda Campus.

MAP with the location of the Congress Centre of IST:

The congress centre ⭐ has one auditorium and 4 meeting rooms that will be used during RENEW2014 for the parallel sessions.

📍 Location of Holiday Inn Hotel (Lunches for the participants)

Important Contacts

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<th>Congress Centre</th>
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<th>Other CONTACTS</th>
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<tr>
<td>Centro de Congressos Instituto Superior Técnico Avenida Rovisco Pais Lisboa 1049 – 001 Tel: +351 218 418 069</td>
<td>Centre for Marine Technology and Engineering Instituto Superior Técnico Avenida Rovisco Pais Lisboa 1049 – 001 Tel: +351 218 417 468</td>
<td>EMERGENCY NUMBER – 112</td>
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