Introductory Course on Ocean Renewable Energy: A Training Workshop for New Entrants into the Southeast Asia Marine and Offshore Energy Market

Organizer: Sustainable Energy Association of Singapore
Date: Thursday 7 June
Time: 9.00 am – 5.00 pm
Location: Pasig Room 14/F Lopez Bldg, Meralco Ortigas Center, Pasig City, Philippines

Objective: To equip the participants with adequate knowledge about ocean renewable energy, specifically tidal and wave energy. At the end of the training workshop, the participants are expected to:
1. Understand the principles and concepts related to ocean renewable energy, specifically tidal and wave energy
2. Describe resource assessment, environment impact assessment, conversion technologies, and economics of ocean renewable energy.
3. Be well-oriented with ocean renewable energy industry including the supply chain involved in project planning, commissioning, operations and maintenance and decommissioning
4. Appreciate the opportunities of ocean renewable energy in Southeast Asia
5. Identify market entry challenges and potential risks of ocean renewable energy in Southeast Asia

Target audience: Finance community, utilities, project developers, renewable energy engineers, renewable energy researchers

Programme Outline: The 1 day workshop will consist of 5 sessions covering various aspects of marine renewable energy that may be of interest to the target audience.
Session 1: Introduction to Ocean Renewable Energy (ORE) & the ORE Industry
Session 2: Market Opportunities & Challenges of Ocean Renewable Energy in Southeast Asia
Session 3: Experiences in Tidal Energy and Wave Energy Project Development
Session 4: Assessments for ORE: Resource, Environment, and Techno-Economics
Session 5: Investing on Ocean Renewable Energy Technologies & Projects
The Southeast Asian (SEA) region has an ambitious target of tripling its renewable energy power generation by 2025. Marine renewable energy, as an emerging energy source, has not been as widely known as other renewable technologies such as hydro, geothermal, solar and wind.

Marine renewable energy is a classification of renewable energies whose sources originate from the marine environment. It includes tidal energy, wave energy, salinity gradient and ocean thermal energy conversion. Each kind has its own characteristics and require specific devices to harness the different types of energy. It is well suited to the SEA region due to the proximity of many countries to large bodies of ocean.

Given the growth in demand for power, marine renewable energy represents an attractive investment opportunity. Collaboration amongst industry, government, academe and supply chain stakeholders will be critical to more widespread adoption.

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**Session 4:** Assessments for ORE: Resource, Environment, and Techno-Economics

**Session 5:** Investing on Ocean Renewable Energy Technologies & Projects
About SEAS
Launched in July 2006, the Sustainable Energy Association of Singapore (SEAS) is a non-profit organisation which represents the interests of companies involved in Renewable Energy, Carbon Trading, Energy Efficiency, Clean Development Mechanism, and Finance. Sustainable Energy Centre of Excellence (SECOE) serves as a hub for the region and a focal point for policy makers, technology providers, project developers, and financiers to discuss, collaborate and establish appropriate policies for each country. This will ensure the ease of implementing RE in the various countries by bringing thought leaders as well as implementers in renewable energy and energy efficiency together for structured programs, trainings, roundtables as well as high level policy and technology dialogues.

About OceanPixel
OceanPixel Pte Ltd (OP) is a Singapore start-up company spun off from the Energy Research Institute at Nanyang Technological University (ERI@N) incorporated in September 2014.

Offering technical services, data catalogues and report products, we have various global involvements and currently handle projects in Singapore, Indonesia, and the Philippines with potential projects in other parts of Asia. Strategically partnering and collaborating with experts from the UK and, with access to marine renewable energy thought leaders in the USA, and with access to marine renewable energy thought leaders in the South East Asia (SEA) region, OP has positioned itself to be the pioneer company dedicated to ocean renewable energy planning and development in SEA and beyond.

Registration Form
☐ Yes! I would like to register for this programme.
☐ I am unable to attend but please put me on your mailing list.

<table>
<thead>
<tr>
<th>Early Bird (Registration with payment made on/before 4 May 2018)</th>
<th>Normal Fee</th>
<th>Group Fee</th>
<th>No. of Delegates</th>
<th>Fee Payable</th>
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<tr>
<td>USD 350</td>
<td>USD 450</td>
<td>USD 400</td>
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* Fees include refreshments, lunch and programme collateral.
* Enjoy group discount for 4 or more delegates registered at the same time from the same organization and same billing source.
* Please print and complete additional sheets where necessary.

Participant’s Details
1. Name (*Dr/Mr/Mrs/Ms): ___________________________ NRIC: ___________________________
   Designation: ___________________________ HP No: ___________________________ Email: ___________________________
2. Name (*Dr/Mr/Mrs/Ms): ___________________________ NRIC: ___________________________
   Designation: ___________________________ HP No: ___________________________ Email: ___________________________
3. Name (*Dr/Mr/Mrs/Ms): ___________________________ NRIC: ___________________________
   Designation: ___________________________ HP No: ___________________________ Email: ___________________________
4. Name (*Dr/Mr/Mrs/Ms): ___________________________ NRIC: ___________________________
   Designation: ___________________________ HP No: ___________________________ Email: ___________________________

Organization’s Details
Company Name: ___________________________________________
Company Address: ___________________________________________ Postal: ___________________________

Contact Person’s Name (*Dr/Mr/Mrs/Ms): ___________________________
Tel: ___________________________ Fax: ___________________________
Email: ___________________________

About the Trainers
Dr. Ralf Starzmann
Sales Director and Head of Hydrodynamics
Ralf Starzmann graduated as a mechanical engineer of the University of Stuttgart, Germany, in 2007. Until 2008 he worked with VOITH Hydro in their ocean energy department on wave and tidal energy devices. In 2008 he started as a Ph.D. student at the University of Siegen, Germany, specializing on the aero-acoustic analysis of the Wells turbine for ocean wave energy conversion. After completing his Ph.D. in 2012, he joined SCHOTTEL and is working on tidal energy related issues. Since 2015 Ralf is the Sales Director and Head of Hydrodynamics of SCHOTTEL HYDRO. Ralf is also a member of the German mirror committee for IEC TC 114.

Dr. Michael Abundo
Managing Director, OceanPixel
Dr. Michael Abundo is a green techno-preneur who specializes in marine renewable energy sector. Michael is actively helping increase the uptake of marine renewable energy in South East Asia and he has been involved in pilot projects in the region for both wave and tidal energy ‘localized’ for tropical conditions. He has served as a faculty member and research laboratory head for the Instrumentation, Robotics, and Controls Laboratory at EEE Institute, University of the Philippines.

Administrative Information
Registration and Payment
Please complete the enclosed registration form and forward it together with your cheque at least 7 days before the commencement of the programme to
Sustainable Energy Association of Singapore
180 Kitchener Road
Singapore Sustainability Academy, City Square Mall, #06-10, ingapore 208539
Crossed cheque should be made payable to “Sustainable Energy Association of Singapore”

Cancellation
SEAS reserves the right to change programme venue, cancel or reschedule the programme if necessary or warranted by circumstances beyond our control.

There will be no refund of fees for withdrawal. However, if the registration participant is unable to attend, a representative may be allowed to attend at no extra cost. Please inform us of the changes via email 7 days before the commencement of the programme.

Confirmation of Registration
Registration is confirmed only upon receipt of registration form and payment.

For more enquiries, please contact:
Ms. Jowene Chan at:
Tel: 6338 8578
Email: jowene@seas.org.sg

Sustainable Energy Association of Singapore (SEAS)
180 Kitchener Rd, Singapore Sustainability Academy, City Square Mall, #06-10, Singapore 208539