

## The All-Energy 2016 Conference Programme

### WEDNESDAY 4 MAY

**09:00-10:30**

#### OPENING PLENARY SESSION

Lomond Auditorium

**Chair: Nina Skorupska CBE FEI, Chief Executive, Renewable Energy Association**

- **Cllr Frank McAveety**, Leader, Glasgow City Council
- **Keith Anderson**, Chief Corporate Officer, ScottishPower and CEO, ScottishPower Renewables
- **Julian Leslie**, Electricity Network Development Manager, National Grid
- **Jasper Rigter**, Associate Programme Officer - REmap 2030, International Renewable Energy Agency (IRENA) speaking on REmap 2030, IRENA's global renewable energy roadmap
- **Professor Sir Jim McDonald**, Principal and Vice Chancellor, University of Strathclyde

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**11:00-12:30**

#### Offshore Wind 1: Road map for 2020

##### The current state of play, and looking forward

Offshore Wind Theatre (Exhibition floor)

*Sponsored by Shepherd and Wedderburn*

**Chair: Patricia Hawthorn, Partner, Shepherd and Wedderburn LLP**

- **Keynote address: The roadmap to 2020 and beyond: Is offshore wind on track to drive costs down, local content up and cut carbon? Benj Sykes**, Co-Chair of the Offshore Wind Industry Council and Head of Asset Management, DONG Energy Wind Power

With opinions from speakers:

- **Jonathan Cole**, Managing Director, Offshore Wind, ScottishPower Renewables
- **Huib den Rooijen**, Director – Energy, Minerals & Infrastructure, The Crown Estate
- **Matthew Knight**, Director of Energy Strategy and Government Affairs, GB & Ireland, Siemens
- **Andrew Jamieson**, Chief Executive, Offshore Renewable Energy Catapult
- **Julian Leslie**, Electricity Network Development Manager, National Grid
- Q&A and discussion

**11:00-12:30**

#### Wave and tidal 1: Status 2016

Lomond Auditorium

**Chair: Professor John Sharp, Chairman of the Society for Underwater Technology's Marine Renewable Energies Committee; and Visiting Professor, Cranfield University**

- **Keynote address: The rise and rise of tidal energy in the UK, Tim Cornelius**, Chief Executive Officer, Atlantis Resources Limited & Chairman of the MeyGen Project
- Pathway to delivering a commercial CETO technology - **Tim Sawyer**, CEO, CWE UK
- Activity in the South West of England - **Johnny Gowdy**, RegenSW
- Wave Energy Scotland: A new approach in Scotland - **Tim Hurst**, Managing Director, Wave Energy Scotland
- International and niche markets – **Neil Ferguson**, Senior Executive - Energy & Low Carbon Technologies, Scottish Enterprise
- Q&A and discussion

**Presentation of the Lennard Senior Award**

**11:00-12:30**

**Sustainable cities 1: A year on from All-Energy 2015... How green are we?**

**The private sector**

**Sustainable and Smart Cities Theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

**Chair: Clare Foster, Partner, Shepherd and Wedderburn**

- Energy efficiency market evolution - **Iain Watson**, Director – Energy Efficiency , Green Investment Bank
- Energy efficiency regulations north and south of the border in context of buildings - **Scott Ritchie**, Partner, Shepherd and Wedderburn
- Buildings and low carbon/energy efficiency - **Michael Gribben**, Director - National Engineering Services, CBRE
- The transition to sustainable transport solutions - transporting people and energy - **Andrew Aldridge**, Senior Adviser, Green Angel Syndicate
- Q&A and discussion

**11:00-12:30**

**Nuclear: The nuclear life cycle**

**Alsh 2**

**Chair: Adrian Bull, Director of External Relations, National Nuclear Laboratory**

- **Keynote: Tom Greatrex**, Chief Executive, Nuclear Industry Association
- Nuclear energy: Scenarios for the deployment of new nuclear power stations - **Mike Middleton**, Strategy Manager for Nuclear, Energy Technologies Institute
- Beyond current new build plans: R&D to underpin the long-term future of the nuclear industry - **Adrian Bull**, Director of External Relations, National Nuclear Laboratory
- Developing the skills needed to enter and succeed in the nuclear industry - **Peter Faccenda**, Operations Manager - Scotland, National Skills Academy for Nuclear
- Why we need a Centre of Nuclear Excellence, **Annajoy David**, Programme Director, Centre of Nuclear Excellence
- Q&A and discussion

**11:00-12:30**

**Hydropower: A world of variety**

*Organised with the British Hydropower Association*

**Boisdale 2**

**Chair and introduction: Simon Hamlyn, CEO, British Hydropower Association**

- Quality matters: **Kieron Hanson**, Founder & Director Hydroplan UK; Board Member of British Hydropower Association
- The construction of Cia Aig hydro scheme - **Duncan Morrison**, Senior Hydro Project Manager, RWE Innogy UK
- Turbiwatt, an innovative solution for previously unprofitable low head schemes - **Harry Terry**, Sales Manager, Turbiwatt
- Funding for hydropower - **Andrew Hughes**, Head of Renewables, Deepbridge Capital
- The water engine technologies' story - **Stan Johnston**, Managing Director, Water Engine Technologies
- Q&A and discussion

**11:00-15:30 (including networking lunch break)**

**Innovate UK and DECC innovation showcase: Collaboration**

**Hall 1**

Innovation from within and outside the energy sector is key to addressing global challenges of sustainable, affordable, and secure energy for all. Innovate UK and the Department of Energy and Climate Change work closely with each other to connect and fund new ideas, technologies, products and services to help companies in their first steps along the innovation journey

towards commercialisation. We connect and fund hundreds of companies through our innovation programmes that address the challenges our energy systems face whilst also providing significant commercial opportunity to UK plc.

We hope to link up innovative companies with potential customers, partners and follow on investment, through an exciting and fast paced pitching and networking sessions. By attending you will hear about the market opportunities that have been identified, how the companies are delivering value, what they are looking for as a next step and have the chance to meet with those pitching.

This is a snapshot of companies we have supported over the last six years, and if you would like to know about our wider programmes please come along to the conference session and speak to one of the team. We look forward to seeing you there! We have published a directory of the projects that were pitching as well as a number of others that were unable to make the day. This is available on the day of the event.

- Welcome – **Christian Inglis**, Energy Systems Programme Lead, Innovate UK
- Introduction to energy innovation at Innovate UK and DECC - **Rob Saunders**, Head of Energy, Innovate UK & **Ian Ellerington**, Head of Innovation Delivery, DECC
- Series of 5-minute pitches from the following companies:
  - Bellrock Technology; Ceres Power; Chimney Sheep; Clicks and Links; DuckDuck Innovations; High Voltage Partial Discharge; ICAX;; Powerline Technologies; Samad Power; SOLARIS PHOTONICS; Soltropy; SPECIFIC – Swansea University; TetraFloat; VerdErg Renewable Energy
- Innovate UK family – Catapult Centres, Knowledge Transfer Network, Enterprise Europe Network

*Following this session there will be a lunch and unique networking chance to meet the innovators who are seeking collaborators, pilot customers, access to expertise, and follow-on investment. Come and also meet the capability providers, public sector energy innovation leads, and those with an interest in energy innovation in this informal networking session. The second session, on Investment, will begin at 14:00 after the networking lunch.*

**11:00-12:30**

### **Future of renewables and energy management in the rural sector**

**Carron**

**Chair: Thomas McMillan, Director - Energy Rural, Savills**

- Farming and energy: Setting the scene - **Jim Campbell**, Renewable Energy Team Leader, SAC Consulting: Environment & Design
- An overview of gasification/biomass CHP: What is the opportunity and what are the risks? - **Adam Baxendine**, Renewable Energy Consultant – Energy, Savills
- One MEGAWATT of new hydropower for Scotland? One KILOWATT at a time! - **Gordon Black**, Director, babyHydro Ltd
- iWESH: Integrated whole energy system using hydrogen for farms - **Amanda Lyne**, Managing Director, ULEMCo Ltd
- Energy storage and the benefits - **Keith Hounsell**, Managing Director, Green Acorn Energy Solutions
- Q&A and discussion

**11:00-12:30**

### **Onshore wind 1: Setting the scene**

**Dochart**

**Chair: Colin Morgan, Founder, Everoze Partners**

- A country in flux: Future delivery of onshore wind in Scotland - **Peter Ward**, Senior Associate, Burness Paull LLP
- The opportunity for small wind in a low or zero subsidy world - **Alex Alliston**, Head of Sales and Business Development, Britwind
- Optimising projects within changing permit and tariff regimes – **Charles Haworth**, Risk and Operations Leader EMEA, India and Asia, GE Wind
- Managing onshore wind construction - **Andy Brown**, Head of Onshore Projects, RWE Innogy UK Limited

- Yes but, first minister - **Marc van Grieken**, Director, MVGLA
- Panellist: **Sue Milton**, Director, Structured Finance, RBS
- Q&A and discussion

**11:00-12:30**

### Energy systems

#### Gala

#### Chair and introduction: Assessing the need for low-carbon technologies using an energy systems approach - Dr Paul Dodds, Lecturer in Energy Systems, University College London

- UK decarbonisation strategies to meet the 2050 target via the 5th carbon budget – Dr David Joffe, Head of Modelling, Committee on Climate Change
- Transitions to a low-carbon energy system, from energy modelling, and the need for new technologies - **Mike Colechin**, Partnerships Manager, Energy Technologies Institute
- Energy system innovation: Not too big to fail, but too big to succeed? Innovation in new technologies - **Keith Bell**, ScottishPower Professor of Smart Grids, University of Strathclyde
- The Energy Union and the implications for UK: A broad view in political, economic and infrastructure issues- **Yodaly Sierra-Rubio**, Energy Manager, CBRE
- Has the global energy industry reached a “historic turning point”? Forecasts for the next 15 years - **Tara Schmidt**, Senior Research Manager - Global Energy Trends, Wood Mackenzie
- Q&A and discussion

**11:00-12:30**

### Finance and funding: New models for financing energy

*Organised with Cleantech Investor*

#### Forth

#### Chair: Anne McIvor, CEO, Cleantech Investor Ltd

- Financing energy performance contracts: Bridging the gap between ESCOs and consumers - **Peter Hobson**, Director, Europe, Middle East and Africa, Sustainable Development Capital LLP
- Financing renewable assets in a time of uncertainty - **John Mullins**, CEO, Amarenco
- New models for financing energy - **Louise Wilson**, Co-founder & Director, Abundance
- Finance and the energy transition - **Andrew Buglass**, Founder, Buglass Energy Advisory
- Investor confidence project - **Dr Steven Fawkes**, Founder and Principal, EnergyPro Ltd
- Merit order effect of solar and wind - **Mark Meyrick**, Trading & Origination Director, Good Energy
- Q&A and discussion

**12:35-14:00**

### Innovate UK and DECC innovation showcase: Networking session

#### Hall 1

A unique chance to meet the innovators who are seeking collaborators, pilot customers, access to expertise, and follow on investment. Come and also meet the capability providers, public sector energy innovation leads, and those with an interest in energy innovation in this informal networking session.

Tables will be allocated to: Oaktec; Connected Energy; Upside Energy; Soltropy; Moixa technology; SPECIFIC IKC; Powerline Technologies Limited; ACT Blade; Wind Farm Analytics; Bellrock Technology; High Voltage Partial Discharge; and OE Systems

**12:45-13:45**

**Quick fire: Industry direction and project overviews**

**Offshore Wind Theatre (Exhibition floor)**

*Sponsored by Shepherd and Wedderburn*

- Taking the pulse of cost reduction – **Andrew Macdonald**, Senior Innovation Manager, Offshore Renewable Energy Catapult
- Development of the National Offshore Wind Turbine Test Facility at Hunterston - **Dave Scott**, Environmental and Planning Coordinator - Generation Development, SSE
- Lessons from offshore wind losses and utilizing insurers for mitigating risks - **Jonas Dalsgaard**, International Offshore Wind Underwriter, Codan
- Powering the Powerhouse: Offshore wind can prove to be a key sector in driving the success of the Northern Powerhouse – **Andrew Symms**, Partner, Head of Energy and Industrials Sector Group, DWF LLP
- Assistance from the National Subsea Research Initiative (NSRI) - **Gordon Drummond**, Project Director, National Subsea Research Initiative (NSRI)

**12:45-13:45**

**Quick fire: Technology updates**

**Sustainable and smart cities theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

- Fuel cell bus pilots' facilitate future deployment – **Flip Bamelis**, R&D Project Coordinator, Van Hool nv
- London's spare gigawatt of power – **Lucy Symons**, Open Energi
- Towards the development of a virtual 3D city model: Dundalk, Ireland – **Aiden Melia**, Project Manager, IES
- ThermCERT - Space applications in support of Future Cities - **Sabine Lazuhina**, Project Manager, Stevenson Astrosat

**14:00-15:30**

**Offshore wind 2: Developers and the supply chain**

**Offshore Wind Theatre (Exhibition floor)**

*Sponsored by Shepherd and Wedderburn*

**Chair: Simon Gray, Chief Executive, East of England Energy Group (EEGR)**

- Appetite for disruption: The journey to subsidy free for offshore wind - **Bruce Valpy**, Managing Director, BVG Associates
- The East Anglian experience – **Simon Gray**, Chief Executive, EEGR
- \*East Anglia ONE – **Mark Timmons**, Senior Manager - Supply Chain Strategy, Offshore Business, ScottishPower Renewables
- \*Neart na Gaoithe – **David Sweeney**, Offshore Manager – Scotland, Mainstream Renewable Power
- \*Beatrice Offshore Wind Farm – SSE's **Steven Wilson**, Senior Project Manager, Beatrice Offshore Wind Farm
- Q&A and discussion

Starred members of the panel will hold 1-2-1 meetings in the Meet the Buyers area, following this session.

**14:00-15:30**

**Wave and tidal 2: The essentials**

**Consenting, finance, legal, environmental**

**Lomond Auditorium**

**Chair: Dr Stephanie Merry, Sector Advisor in Marine Renewables, Renewable Energy Association; and Director, Focus Offshore**

- **Keynote address:** Thro' pathways rough and muddy - **Ronnie Quinn**, General Manager for the Scotland Portfolio, The Crown Estate
- The Insurance-Debt nexus: Can risk policy make tidal power bankable? - **Joe Hulm**, Director, Ocean Energy Advisors
- Emerging future legal and MBM obstacles to investment in offshore renewables - **Glen Plant**, Independent Legal Consultant
- Tidal arrays: Progress towards proportionate EIA based on lessons learnt from the consenting and monitoring of early arrays - **Liz Foubister**, Specialist, Xodus Group Limited
- Integrated monitoring for tidal energy - **Stuart Baird**, Operations Director, European Marine Energy Centre (EMEC)
- Q&A and discussion

#### 14:00-15:30

#### Sustainable cities 2: A year on from All-Energy 2015... How green are we?

##### The public sector

#### Sustainable and smart cities theatre (Alsh 1)

*Sponsored by Shepherd and Wedderburn*

#### Chair: Clare Foster, Partner, Shepherd and Wedderburn

- Energy efficiency market evolution in public sector - **Iain Watson**, Director, Green Investment Bank and **Brian Devlin**, Executive Director of Land & Environmental Services, Glasgow City Council
- Financing the public sector and including the Green Loan - **Andrew Wilkinson**, Vice President - Energy Efficiency, Green Investment Bank
- Challenges and the barriers/Top tips for getting the deal done - **Craig Nicolson**, Solicitor, Shepherd and Wedderburn
- Crystallising the benefits of low carbon and energy efficiency: Green Loan case study - **Jeremy Martin**, Energy & Sustainability Manager, Southend-on-Sea Borough Council
- Improving energy efficiency through open data and standardisation - **Dr Steven Fawkes**, Founder and Principal, EnergyPro
- Energy and social mobility – How social housing is challenging the energy industry - **Colin Reid**, Energy & Sustainability Manager, Wheatley Group
- Panellist: **Chris Stark**, Head of Energy Division, Scottish Government
- Q&A and discussion

#### 14:00-15:30

#### Glasgow's low carbon economy – looking ahead at market opportunities

##### Alsh 2

This session will provide an overview of the growing low carbon economy in Scotland's biggest city. It will set out the key priorities for the city's innovative Sustainable Glasgow partnership and therefore provide forward guidance to the market on the areas where investment would be particularly welcomed. Glasgow is a city which is open for green business and this session will therefore offer an opportunity for an ongoing dialogue about sustainable growth between public and private sectors.

**Chair: Alastair Brown, Head of Sustainability and the Environment, Glasgow City Council; and Chief Resilience Officer, City of Glasgow, Scotland**

- Gavin Slater, City Energy and Carbon Manager, Glasgow City Council
- Anne Murray, Inward Investment Manager, Glasgow City Council
- Kevin Kane, Executive Director, Glasgow Economic Leadership
- Adam Liddle, Project Manager, Jacobs

**14:00-15:30**

**Skills and training: The role of CDTs on training future leaders for the energy industry**

*Organised by Cranfield University*

**Boisdale 2**

**Chair: Professor Feargal Brennan, Director of Energy, Cranfield University**

- EPSRC Centre for Doctoral Training in Renewable Energy Marine Structures - **Dr Ali Mehmanparast**, Cranfield University
- EPSRC Centre for Doctoral Training in Wind and Marine Energy Systems - **Professor Bill Leithead**, University of Strathclyde
- EPSRC Centre for Doctoral Training in Future Power Networks & Smart Grids – **Professor Graeme Burt**, University of Strathclyde
- EPSRC Industrial Doctoral Centre for Offshore Renewable Energy (IDCORE) - **Professor David Ingram**, University of Edinburgh

**14:00-15:30**

**Innovate UK and DECC innovation showcase: Investment**

**Hall 1**

- Welcome back – Christian Inglis, Energy Systems Programme Lead, Innovate UK
- Series of 5-minute presentations from:
  - ACT Blade; Connected Energy; Kite Power Solutions; Millennium Natural Resources; Moixa technology; Oaktec; OE Systems; Origen Power; Recycling Technologies; Ricardo; Upside Energy; Wind Farm Analytics; WITT
- UK energy innovation crowd feedback session –to be facilitated by **Christian Inglis**, Integrated Energy Programme Leader, Innovate UK
- Close

**14:00-15:30**

**Bioenergy 1: Biomass**

*Organised with Renewable Energy Association*

**Carron**

**Chair: Hamish McPherson , Partner, Aurium Capital Markets**

- Biomass: Designing to maximise efficiency and payback for your business - **Tom Milne**, Senior Engineer, Black & Veatch
- From big to small
  - Biomass conversions – a way to utilise existing assets and secure a low carbon stable system, **Jens Wolf**, Regulation and Markets Director, Drax Power
  - Wood chips to heat and power: Spanner RE<sup>2</sup> Biomass CHP - **Matthias von Senfft**, Senior Sales & Marketing Executive, Spanner RE<sup>2</sup> GmbH
- Sustainable straw: Combustion of agricultural residue for combined heat and power - **Andy Yuill**, Senior Biomass Manager, Natural Power Consultants
- Avoiding the food-fuel-water-land nexus: Can we reuse vacant and derelict brownfield land or former landfill sites for land-based renewables instead? - **Dr Richard Lord**, Senior Lecturer in Engineering Geoscience and Director of Knowledge Exchange, Department of Civil & Environmental Engineering, University of Strathclyde
- Renewable Heat Incentive (RHI): Update - **Dr Edmund Ward**, Head of Technical & Compliance, NDRHI, Ofgem E-Serve
- Q&A and discussion

**14:00-15:30**

**Onshore wind 2: Growing old gracefully**

**Life extension, repower and decommissioning UK onshore wind**

*Organised with Everoze Partners*

**Dochart**

Currently, there is only 210MW of operating onshore wind capacity that is older than 15 years. But by 2020 that number will have increase to nearly 1GW. Ageing onshore wind assets present an opportunity for their owners to improve returns by changing the plant or the way in which it is operated. A myriad of options exist; from sweating beyond design life through to full redevelopment and indeed the introduction of other technologies such as solar PV and battery storage. This session explores these options for a range of relevant perspectives with the objective of identifying the key opportunities and threats which emerge in late life operation.

**Chair and scene setter: Joe Phillips, Partner, Everoze Partners**

- Legal and consenting perspective: **Colin Innes**, Partner and Head of Planning & **Colin Robertson**, Partner, Shepherd and Wedderburn LLP
- Design and environmental impacts: **Mary Fisher**, Board Director, LDA Design
- View from a WTG manufacturer: **Andrea Riccardi**, Gamesa
- Technical and commercial path to extended life for onshore wind projects - **Colin Morgan**, Founder, Everoze Partners
- Panellist: **Brendan Turvey**, Policy and Advice Manager – Renewables, Planning and Placemaking, Scottish Natural Heritage
- Q&A and discussion

**14:00-15:30**

**Grid 1: Action on Smart Grid supply chain**

*Organised by The IET*

**Gala**

The IET is pleased to host presentations and a panel discussion on the first year findings from the work of DECC/Ofgem Smart Grid Forum Work Stream 9 (WS9) – Technological Innovation and Growth.

SGF – WS9 held a session at All-Energy 2015 in which it presented its ambition to identify the challenges for the Smart Grid supply chain, especially the SME community, and to propose recommendations on how to engage more SMEs in innovation deployment activity.

This year we report on the outcomes achieved to date. These outcomes address use of the Smart Grid Architecture Model (SGAM) to build a common lexicon to enable effective communication between stakeholders. The outcomes also consider the nature and behaviours of key aspects of the supply chain from market, technical, commercial and societal perspectives. Horizon scanning plays a role in substantiating these outcomes.

The work is now entering its second stage and we will present our current thinking on upcoming project activities. In addition, we will seek comments that may help shape this work and invite participation as it moves forward.

**Chair: Eric Brown, Interim Head of Strategy and Innovation, Energy Systems Catapult**

- Introduction and Background – **Eric Brown**, Interim Head of Strategy and Innovation, Energy Systems Catapult
- Presentations to follow on:
  - The Role of SGAM
  - Supply Chain: Challenges and Opportunities
  - Learning from Other Sectors
- Panel discussion and Q&A
- Closing summary



**14:00-15:30**

**Sustainable transport**

**Forth**

**Chair: Archie Stoddart, Head of Sustainable Transport Unit, Transport Scotland**

- Ultra low emission hydrogen vehicles TODAY - **Amanda Lyne**, Managing Director, ULEMCo Ltd & **David Hogg**, Technical Manager, Bright Green Hydrogen Ltd
  - Fuel cell vehicles are coming... Good or bad for BEVs? – **Jo Howes**, Principal Consultant, E4tech
  - It is the motor industry that is driving the technology of lithium ion batteries and cost reduction - **Ray Noble**, Advisor on Solar, Storage and Electric Vehicles, Renewable Energy Association
  - Reducing rebound without sacrificing macroeconomic benefits of increased energy efficiency in public transport provision - **Karen Turner**, Director, Centre for Energy Policy, University of Strathclyde
  - Maritime renewables: The flagships of the future - **Diane Gilpin**, Founder & CEO, Smart Green Shipping Alliance
  - Q&A and discussion
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**15:35-15:55**

**Quick fire: Global perspectives**

**Offshore Wind Theatre (Exhibition floor)**

*Sponsored by Shepherd and Wedderburn*

- The sun is shining on Indian wind on and offshore – **Charles Yates**, Managing Director, CmY Consultants Ltd and **Dr Mark Leybourne**, Senior Engineer, IT Power Consulting Ltd
  - Policy drivers shaping up the Northeast US offshore wind market – **Stephanie McClellan**, Director, Special Initiative on Offshore Wind
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**16:00-17:30**

**Offshore wind 3: Health, safety and training**

**Offshore Wind Theatre (Exhibition floor)**

*Sponsored by Shepherd and Wedderburn*

Keeping offshore wind workers safe is of paramount importance. What needs to be done to aim for the 'holy grail' of zero incidents? The key organisations involved in safety matters in UK offshore waters gather in this session to consider what is already in place, and to discuss steps that can be taken to discuss the guidance documentation and safety procedures that need to be developed.

**Chair: Alan MacLeay, Engineering Director – Renewable Energy, Seaway Heavy Lifting**

- Offshore wind – Health and safety – The regulator's expectations - **Trevor Johnson**, HM Principal Inspector of Health and Safety, Health and Safety Executive (HSE)
- SAR challenges with offshore renewables - **Peter Lawson**, Offshore Energy Liaison Officer, HM Coastguard, Maritime and Coastguard Agency
- The G9 Offshore Wind Health and Safety Association - **Stephen Rose**, Head of Wind Generation, SSE and G9 Focal Group Leader
- IMCA's contribution to offshore wind safety, **John Bradshaw**, Technical Adviser, International Marine Contractors Association (IMCA)
- The value of qualification - **John Howard**, Chairman, International Jack Up Barge Operators Association (IJUBOA)
- **Panellist: Keith MacRae**, Partner, Mackinnons
- Q&A and discussion

**16:00-17:30**

**UK Marine Enabling Technology Programmes 1: The results  
(Wave and tidal 3)**

*Organised by The Carbon Trust and Scottish Enterprise*

**Lomond Auditorium**

The UK Marine Enabling Technology Programmes sessions will showcase the combined outputs of the UK's leading marine energy sector support bodies, The Carbon Trust, Scottish Enterprise, Innovate UK and the ORE Catapult. The programmes to be covered from the last couple of years of activity include the Marine Renewables Commercialisation Fund (MRCF); the Tidal Array Cabling; Marine Energy: Supporting Array Technologies (MESAT); and the ORE Catapult's Component Failure Analysis on both Wednesday and Thursday afternoon.

- 16:00: Welcome and introduction - **Neil Ferguson**, Senior Energy Executive, Scottish Enterprise
- 16:05: Moored barge, SE Tidal Array Cabling - **Daniel Wise**, Head of Offshore Technology, Aquatera
- 16:20: U-Tube, SE Tidal Array Cabling – **Jim Buston**, Jee Ltd
- 16:35: DP barge, MESAT – **Ned Minns**, IT Power
- 16:50: HighFlow4 vessel, MESAT – **Steve Jermy**, Chartered Marine Renewable Energy Technologist, Mojo Maritime
- 17:05: TIPTORS/Component Failure Analysis – **Simon Cheeseman**, Wave & Tidal Energy Specialist, ORE Catapult
- 17:20: Q&A

**16:00-17:30**

**Smart cities**

**Sustainable and Smart Cities Theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

**Chair and introduction: Alan Howard FCIM, Sector Head for Thought Leadership, The Institution of Engineering and Technology (IET)**

- System integration in cities and infrastructure – **Dr Mike Pitts**, Head of Urban Living and Built Environment, Innovate UK
- Glasgow's smart, sustainable and resilient ambitions: Future city Glasgow demonstrator and beyond - **Gary Walker**, Future City Glasgow Programme Director, Glasgow City Council
- Hydrogen for sustainable and clean cities – **Simona Webb**, Hydrogen Programme Manager, Hydrogen for Innovative Vehicles (HyFIVE) Coordinator, Greater London Authority
- Scotland's Low Carbon Infrastructure Transition programme – **Veronica Noone**, Senior Manager Energy Strategy, Scottish Enterprise
- Energy issues and opportunities for smart cities - **Richard Bellingham**, Director, Institute for Future Cities, University of Strathclyde
- Q&A and discussion

**16:00-17:30**

**Geothermal**

**Alsh 2**

**Chair: David Townsend, Founder and Managing Director, TownRock Energy**

- Geothermal hot saline aquifer heat in Scotland: Potential and hurdles – **Dr Ruth Robinson**, Department of Earth & Environmental Sciences, University of St Andrews
- The Hill of Banchory Geothermal Energy Project – **Dr Michael Feliks**, UK Operations Manager, Cluff Geothermal
- Deep geothermal heat at the new Aberdeen Exhibition and Conference Centre – **Dr Ryan Law**, Managing Director, Geothermal Engineering Ltd

- Fortissat Minewater Geothermal Project – **Dr Jelte Harnmeijer**, Fellow - Renewable Energy, The James Hutton Institute
- Benefits of geothermal district heating networks (district heating vs isolation) and the current strategy in the Netherlands for developing geothermal projects - **Drs. ing. M. (Maurice) Hanegraaf**, Business Director , Geo Energy
- How can we build a sustainable future for our geothermal resources? - **Kirsten Pasturel**, Senior Completion Engineer, Ross Engineering A/S
- Q&A and discussion

**16:00-17:30**

### Offshore renewable energy in Scottish waters – Policy, planning and licensing for the present and future

#### Boisdale 2

*Organised by Marine Scotland*

This session will be chaired by David Palmer, Deputy Director and Head of the Marine Planning and Policy Division at Marine Scotland (Scottish Government). It will explore recent developments in marine planning, science and licensing in relation to offshore renewable energy in Scottish Waters. Presentations will be provided by Marine Scotland Officials including James McKie, Head of the Licensing Operations Team, and Phil Gilmour, Head of Offshore Renewables Planning, who will cover topics such as post-consenting monitoring and Marine Scotland's involvement in the European Commission's Ocean Energy Forum.

**16:00-17:30**

### Energy efficiency

#### Hall 1

#### Chair: Audrey Gallagher, Director of Energy Supply, Energy UK

- A brave new world for the energy efficiency market - **Lesley Rudd**, Director of Policy, Sustainable Energy Association
- Energy efficiency: Why don't more businesses act? – **Jamie Pitcairn**, Director- Scotland, Ricardo Energy & Environment
- Going beyond ESOS regulations: Next steps and new support for energy efficiency in business – **Rory Shanahan**, Energy Consultant, The Carbon Trust
- Energy performance contracting in NHS Scotland - **Thomas Pye**, Energy Manager - Health Facilities Scotland (HFS), NHS National Services Scotland
- Support available to Scottish businesses operating in the low carbon market – **Ian Cuthbert**, Programme Manager – Supply Chain, Energy Saving Trust, Scotland
- Panellist: **Rishi Madlani**, Director - Sustainable Energy, Royal Bank of Scotland
- Q&A and discussion

**16:00-17:30**

### Bioenergy 2: Biomass, biogas, AD and biofuel

*Organised with Renewable Energy Association*

#### Carron

#### Chair: Nina Skorupska CBE FEI, Chief Executive, Renewable Energy Association

- Maximising the value of your exported power: two sides of the same coin
  - Are you optimising the income you generate from your power - **Russell Reading**, Structured Contracts Director, Engie
  - How to maximise the value of your exported power - **Stuart Stephens**, Commercial Director, e-Power
- Improving the global viability of biomass gasification - **Ian Watson**, Reader in Applied Energy, University of Glasgow

- Process configuration study on a biomass gasification CHP plant with carbon capture - **Hyungwoong Ahn**, Scottish Carbon Capture and Storage Centre, School of Engineering, University of Edinburgh
- The importance of risk management and insurance for AD and biogas plants - **Carl Gurney**, Renewable Energy Director, Jelf Clarke Roxburgh
- The role of advanced liquid biofuels for transport post 2020 - **Dr Michael Goldsworthy**, Senior Consultant, NNFFC
- Q&A and discussion

**16:00-17:30**

### **Onshore wind 3: Innovations in operations**

**Dochart**

**Chair: Robbie Gibson, Group Director, SgurrEnergy**

- 3rd generation wind measurement tools and techniques - **Peter Clive**, Senior Scientist, SgurrEnergy Ltd
- How to fast-track commissioning for ROC and FIT approval with grid connection simulation technology - **Alf Scambler**, Renewables Sector Manager for Northern Europe, Aggreko
- How remotely operated aerial vehicles (ROAV) & asset management software has revolutionised wind turbine blade inspection - **Michael McQueenie**, Business Development Manager, Cyberhawk
- The future of environmental compliance monitoring: Presenting findings from the world's first shadow flicker monitoring campaign and the latest in affordable, long term noise monitoring technology - **Peter Longbottom**, Operations Director, Visualwind & **Moise Coulon**, Senior Technical Consultant, TNEI Services
- Effective usage of wind measurements to improve onshore and offshore mesoscale model products - **Gil Lizcano**, R&D Director, Vortex
- Q&A and discussion

**16:00-17:30**

### **Grid 2: Constraint managed zones workshop**

*Organised by Scottish and Southern Energy Power Distribution*

**Gala**

Flexibility – examining how a portfolio of controllable demand, energy storage technologies and commercial strategies will be key for future network operations that can enable a more distributed energy system, also involving an interactive session which allows attendees to step into the shoes of a DNO.

**Agenda:**

- Introduction
- Our flexibility journey as a DNO
- Putting it into practise – CMZ – managing network capacity
- How would you optimise the distribution network? - Participation workshop
- Presentation of group solutions
- Wrap up and Q&A

**Chair: Maria Liendo, Head of Regulatory Investment and Reporting**

**Facilitators:**

- **David MacLeman**, Innovation Strategy Manager
- **Fraser Macintyre**, Knowledge Management Analyst
- **Andrew Urquhart**, Active Solutions Manager
- **Colin Mathieson**, Innovation Programme Delivery Manager
- **Sorcha Schnittger**, Commercial Analyst

**16:00-17:30****Hydrogen and fuel cells****Forth****Chair: John Lidderdale, Chairman, Scottish Hydrogen and Fuel Cell Association (SHFCA)**

- **Keynote address: Ian Chisholm**, Director – Green Power Solutions, Doosan Babcock
  - PEM electrolyzers in the MW-range for various applications - **Markus Boehm**, Sales Manager, Siemens AG
  - Development of a green hydrogen standard for the UK - **Paul Dodds**, Lecturer in Energy Systems, University College London
  - Fuel cell buses in London - A success story: **Ben Madden**, Director, Element Energy
  - Leeds Citygate - **Dan Sadler**, H21 Project Manager, Northern Gas Networks
  - Q&A and discussion
- 

**17:30-17:35****Welcome to Glasgow from the City****Lomond Auditorium**

A greeting from a representative of the Lord Provost.

**18:00-20:30****All-Energy Giant Networking Evening****Glasgow Science Centre****THURSDAY 5 MAY 2016****09:45-11:30****Offshore wind 4: Floating wind turbines***Held in association with DNV GL***Offshore Wind Theatre (Exhibition floor)***Sponsored by Shepherd and Wedderburn***Chair: Marte Riiber de Picciotto, Head of Renewables Advisory, Nordic and Baltic Region, DNV GL – Energy**

- Japan: steps towards market maturity and cost reduction – **Magnus Ebbesen**, Senior Consultant, DNV GL
- Floating turbines: Scotland/UK market – **Cian Conroy**, Sector Lead, Wind, ORE Catapult
- Hywind Scotland Pilot Park Project - The world's first floating wind farm – **Leif Delp**, Project Director - Hywind Scotland Project, Statoil ASA
- WindFloat Atlantic project: an update – **Joshua Weinstein**, Business Development & Operations, Principle Power
- Development and commercialisation of a floating wind and wave hybrid – **Chris McConville**, UK Business Developer, Floating Power Plant
- Innovative foundation design in developing offshore wind – **Una Brosnan**, Growth Manager – Offshore Wind, Atkins
- Developing SATH© the concrete floating platform for offshore wind market - **David Carrascosa**, Head of Offshore Wind & **Luis González-Pinto**, Head of Renewable Energy, Saitec Engineering
- The verification path – **Alexandra de Marichalar**, Consultant, Renewables Advisory, Norway, DNV GL - Energy
- SeaTwirl video
- Q&A and discussion

**09:45-11:30**

**Wave and tidal 4: A snapshot of EU and global progress**

**Lomond Theatre**

**Chairman: Jacopo Moccia, Policy Director, Ocean Energy Europe**

- An OEE overview – **Jacopo Moccia**, Policy Director, Ocean Energy Europe
- French activity – **Hakim Mouslim**, Managing Director, Innosea
- Ireland: Open for business on ocean energy - **Dr. Brendan Cahill**, Programme Manager - Ocean Energy R&D, Sustainable Energy Authority of Ireland (SEAI)
- Installation at Oosterschelde and ongoing plans, **Hans van Breugel**, CEO, Tocado Tidal Turbines
- Ocean Energy – an international perspective - **Henry Jeffrey**, Senior Research Fellow: Institute for Energy Systems, University of Edinburgh
- Marine energy opportunities in Indonesia - **Dr Gareth Davies**, Managing Director, Aquatera
- Q&A and discussion

**09:45-11:30**

**Sustainability and energy efficiency in the food & drink sector**

**Sustainable and Smart Cities Theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

**Chair: Stuart Patrick, Chief Executive, Glasgow Chamber of Commerce**

- The Circular Economy approach – **Willie Fergusson**, Zero Waste Scotland
- Glasgow’s approach to the Circular Economy in the food and drink sector – **Rebecca Ricketts**, Senior Projects Manager, Glasgow Chamber of Commerce
- Sustainable Scotch - **Julie Hesketh-Laird**, Deputy CEO and Director of Operational & Technical Affairs, Scotch Whisky Association
  - Company case study - **Iain Lochhead**, Operations Director, Bacardi, UK Operations Centre
- Low carbon opportunities for food and drink businesses - **Fiona Chan**, Sustainability Manager, Scotland Food & Drink
  - Member company case study: **Alastair Macphie**, Chairman & CEO, Macphie of Glenbervie Ltd
- How academia can help businesses improve their sustainability and energy efficiency and how you can access this support - **Suzanne Dawson**, Head of Sector Relationships, Interface
  - Academic Case Study - **Professor John Currie**, Head of the Scottish Energy Centre, Edinburgh Napier University
- Q&A and discussion

**09:45-11:30**

**Policy changes then technology answers**

*Organised by Scottish Energy Association (SEA)*

**Alsh 2**

Over the course of the last year, from the date of the General Election, 6/5/2015, coincidentally the second day of All-Energy 2015, the energy industry has seen a raft of policy changes.

In fact a major new report (3/3/2016) from the Energy and Climate Change Committee (ECCC) reveals that the continued ‘chop and change’ approach to policies is threatening the UK’s ability to meet its energy security and climate objectives.

The sudden policy announcements are the main cause for concern, while a lack of transparent decision making, a disregard of investor impacts, contradictory approaches, absent long-term thinking and a 2020 policy ‘cliff-edge’ have all added to the melting pot.

Will these challenges bring out the best in our energy industry? Will we see organisations looking outside the box and using innovation to meet the challenges?

SEA will present a mix of presentations from across the energy industry, showcasing the diverse sectors that make up its membership and how the technology currently being developed will rise to meet the demands of the market. Each of the speakers will explain how their area of business will contribute to the long-term goal of reducing carbon and meeting the targets from COP21

**Chair: Colin McNaught, Ricardo Energy & Environment and Chair of SEA**

- Squaring off government commitments in the power sector - **Alex Coulton**, Senior Policy Analyst, RES
- Squaring the circle: Energy product development in an uncertain energy world - **Dr Les King**, Director of Technology Policy and Liaison, Doosan Babcock
- Smart cities, smart wind, swift solution! – **Mike McLean**, Sales Director, Swift Technology Group
- Electricity in a time of radical change - **Grant Spence**, Senior Principal Consultant, Mott MacDonald
- Power-to-Gas: A technology answer that needs policy change - **Mike Parr**, Director, PWR Consultants & **Simon Minett**, Managing Director, Challoch Energy
- Q&A and discussion

**09:45-11:30**

**Carbon capture and storage**

**Boisdale**

**Chair: Stuart Haszeldine OBE FRSE C.Geol, Professor of Carbon Capture and Storage, University of Edinburgh**

- Caledonia Clean Energy Project at Grangemouth – **Alan Simpson**, Project Manager, Caledonia Clean Energy Project
- An industrial CCS roadmap for Scotland - **Chris Bryceland**, Senior Executive, Scottish Enterprise & **Katherine Knight**, Head of Carbon Capture and Storage (CCS), Atkins
- Progressing development of the UK's strategic carbon dioxide storage resource – **Alan James**, Managing Director and Team Maker, Pale Blue Dot Energy
- Let's talk Hubs and Clusters - **Kirsty Anderson**, Principal Manager – Public Engagement, Global CCS Institute
- Hydrogen and CCS - **Alastair Rennie**, Senior Principal Consultant, Amec Foster Wheeler; Vice Chair, UK Hydrogen Fuel Cell Association; Director, Carbon Capture & Storage Association
- Q&A and discussion

**09:45-11:30**

**Heat 1: Policy**

**Setting the heat scene and agenda**

**Hall 1**

**Chair: Michael King, Board Director, Aberdeen Heat & Power**

- The infrastructure impacts of heat decarbonisation – **Dr Keith MacLean**, Managing Director, Providence Policy
- Social landlords' experiences of district and communal heating - **Tessa Clark**, Senior Consultant, Changeworks
- Low carbon heat: the Scottish opportunity - **Neil Ferguson**, Senior Energy Executive, Scottish Enterprise
- Stratego: a heat roadmap for energy transition - **Alessandro Provaggi**, Head of the DHC+ Technology Platform, Euroheat & Power
- Overview of UK experience from Danish perspective - **Morten Duedahl**, Business Development Manager, Danish Board of District Heating (DBDH) & **Paul Steen**, Associate Director, Ramboll
- Q&A and discussion

**09:45-11:30**

### Shared ownership

*Organised with Local Energy Scotland and Highlands and Islands Enterprise*

**Carron**

Local Energy Scotland and Highlands and Islands Enterprise are pleased to be supporting the Shared Ownership Conference session in collaboration with All-Energy.

**Chair: Calum Davidson, Director of Energy and Low Carbon, Highlands and Islands Enterprise**

#### Why shared ownership?

- Welcome - **Calum Davidson**, HIE
- Scale of opportunity, potential, support, policy changes - **Laura Nicolson**, Shared Ownership Development Manager, Local Energy Scotland

#### Shared ownership in practice

- A joint venture example – **Christina Noble**, Project Director, Here We Are (HWA)
- A shared revenue example – **Andrew Stewart**, Stewart Energy – Wind
- A developer's perspective and opportunities, challenges, barriers, reasons they do it, vision for the new world – **Gemma Hamilton**, Projects Lead, UK , Brookfield Renewable UK

#### How to Finance Shared Ownership

- Alternative finance perspective - **Louise Wilson**, Co-founder & Director, Abundance Generation
- What products are available, the risks, the timescales and an example of a deal – **Michelle Howell**, REIF Senior Manager, Scottish Investment Bank, Scottish Enterprise

Q&A and discussion

**09:45-11:30**

### Solar 1: The changing face of solar

*Organised with Solar Trade Association Scotland*

**Dochart**

**Chair: Finlay Colville, Head of Solar Intelligence activities, Solar Power Portal**

- **Keynote address:** speaker tbc, MASEN (Morocco solar and renewable agency)
- Delivering solar without subsidy - **Ray Noble**, Director, Solar BIPV
- Securing the future of the large scale solar industry - **Robert Shaw**, Director, LDA Design
- Designing PV with storage for a post-subsidy market - **Chris Loughton**, Managing Director, The Solar Design Company
- Solar PV and energy storage applications: Where is value best captured? - **Daniel Matson**, Senior Renewable Energy Engineer, Black & Veatch Ltd
- Panellist: **Craig Love**, Director-Structured Finance, RBS
- Q&A and discussion

**09:45-11:30**

### Grid 3: Onshore Transmission and CATO

#### Different perspectives

**Gala**

- The Competitively Appointed Transmission Owner (CATO), what is it and how can you get involved?
- Be at the forefront of the significant shift in policy towards the introduction of competition to onshore transmission assets within GB;
- Come to hear about the emergence of a new market which has the potential to bring long-term regulated revenue streams for investors and developers;
- Understand how the regime will impact developers and potential CATOs;
- Understand the challenges the regime will need to overcome as it develops.

**Chair: Scott McCallum, Partner, Shepherd and Wedderburn**

*Correct as of 26.04.2016*



- Overview of framework and introductory thoughts on different perspectives of a TO, OFTO and developer/generator - **Liz McRobb**, Partner – Energy and Utilities, Shepherd and Wedderburn
- **Ross Baxter**, ScottishPower
- An OFTO representative – **Sean Kelly**, Director, Transmission Excellence (previous Co-Founder of Transmission Capital)
- What is a CATO? - **Gordon Hutcheson**, Senior Manager - Networks, Transmission Competition Policy Team, Ofgem
- Q&A and discussion

**09:45-11:30**

### Energy storage 1

#### Grid balancing and support: MW scale, keeping the lights on

Forth

Chair: Eur Ing Professor Ian Arbon CEng, CEnv, Senior Partner, Engineered Solutions

- **Keynote address: Dr Graham Cooley**, Chief Executive, ITM Power to be delivered by **Dr Kris Hyde**, Technology Manager, ITM Power
- A whistle stop tour of the legalities of energy storage – **John Grady**, Partner, Shepherd and Wedderburn
- Energy storage: regulatory barriers - **Marc Smeed**, Senior Consultant, Xero Energy
- Energy storage: Lessons learned from the installation of Europe's largest battery energy storage fleet - **Robin Duncan**, Project Manager, AES UK & Ireland
- Electrolysers – network pain or network gain? - **Sorcha Schnittger**, Commercial Analyst, Scottish and Southern Energy Power Distribution
- Energy storage: an investor's perspective - **Richard Braakenburg**, Director and Co-Head of the Energy Efficiency and Distributed Energy Team, Green Investment Bank
- Can storage help reduce the cost of a future UK electricity system? - **Andy Lever**, Director of Innovation, The Carbon Trust
- **STOP PRESS:** Showing of a short video from The University of Sheffield with the presentation to take place in the final session of the day
- Q&A and discussion

**11:40-12:10**

### Quick fire: diversification and vessels

#### Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

- CDC Heron's application for wind industry, gorillas need not apply- **Iain Steven**, Technical Director, Celtic Design Consultants Limited
- Diversifying into offshore wind: High potential areas for oil and gas suppliers - **Alan Duncan**, Senior Associate, BVG Associates
- Service Operations Vessel (SOV) - **Lucas Zaat**, Manager Design & Proposal Offshore & Transport, Damen Shipyards Gorinchem

**12:15-14:00**

### Offshore wind 5: O&M

#### Lowering costs and improving performance

#### Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

Chair: Elaine Greig, Director, The Renewables Consulting Group

- Barriers - What can get in the way of lowering cost offshore wind production - **Mick Turner**, Director, Sinnodyne Ltd

- 3rd party offshore wind O&M - How does the jigsaw come together to drive down LCOE? - **Sally Shenton**, Director, Generating Better Ltd
- ForeCoast® Marine: A new applied approach to reduce the cost of marine operations - **Dr Mark Lawless**, Director, JBA Consulting
- 21st century solution to leading edge erosion - **Brian Forbes**, General Manager, TRAC advantEDGE
- Condition based maintenance of offshore wind turbines by 24/7 monitoring of oil quality, oil aging and additive consumption - identification of critical operation conditions & determination of the next oil exchange - **Manfred Mauntz**, Founder, CEO and Head of Development & Research, cmc Instruments GmbH
- Achieving four pi visibility: the advent of CPI monitoring and wind power asset optimisation - **Peter Clive**, Senior Scientist, SgurrEnergy Ltd
- Q&A and panel discussion

**12:15-14:00**

### **Wave and tidal 5: Practical experience in tidal array developments**

**Lomond Auditorium**

**Chair: John Griffiths, JWG Consulting; and Technical Director, EMEC**

- **Cameron Smith**, Director - Project Development, Atlantis Resources
- MeyGen Phase 1A: Lessons learned to date and knowledge sharing plans - **David Taaffe**, Project Manager, MeyGen Phase 1A & **Andy Baldock**, Director - Sustainable Energy Solutions, Black & Veatch
- DeltaStream: an update - **Martin Murphy**, Managing Director, Tidal Energy Ltd
- Pathway to floating tidal arrays - **Andrew Scott**, CEO, Scotrenewables Tidal Power
- A community-scale tidal array at EMEC – **Jason Hayman**, Managing Director, Sustainable Marine Energy
- Q&A and discussion

**12:15-13:15**

### **Enabling smart cities ... big data conundrums**

**Sustainable and Smart Cities Theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

Smart cities deploy technology and utilise data to create new ways of delivering public services amongst other things. The objective of smart cities is to become more efficient, sustainable and prosperous places for people to live and work. Smart cities can bring previously disparate sectors such as energy, water and telecoms together through the use of smart electricity grids, smart meters and the ever growing internet of things. Whilst smart cities raise a number of exciting prospects they also present a number of policy, cultural and legal challenges. Concerns by consumers over security and privacy and around the ownership of the data that is being generated by smart cities and which is often used to support the costs of such projects will need to be tackled. Other more traditional regulatory challenges include spectrum issues and whether there is sufficient spectrum capacity for the ever growing number of devices in a smart city. In addition there are questions of permanent roaming for those devices equipped with SIMs.

Smart cities are coming and in order to make the most of the benefits that they can deliver, the policy, cultural and legal challenges need to be addressed early. Whilst Ofcom has already begun to consider the internet of things, there are probably opportunities for Ofgem, Ofcom and Ofwat to work together to address some of the challenges in a cohesive way. We welcome you to join the conversation!

- **Gordon Moir**, Partner, CDR – Regulation and Markets, Shepherd and Wedderburn, and
- **Stephen Burdis**, Growth and Strategy Leader - EMEA, GE Digital Energy in conversation

**12:15-14:00**

**Energy from waste**

*Organised with Renewable Energy Association*

**Alsh 2**

**Chair: Hamish McPherson, Partner, Aurium Capital Markets**

- **Keynote address: Alan Cumming**, Capital Projects and Engineering Director, Viridor
- Renewables Obligation sustainability requirements for generators: What you need to know - **Jasmine Killen**, Manager - Fuelling and Sustainability, Ofgem E-Serve
- Turning waste into power: financing the Scottish EfW revolution - **Michael Nevin**, Director, Nevin Associates Ltd
- I'll take the high road: mapping the path to a Scottish bioeconomy - **Dr Paul Hudman**, Business Development Manager, Industrial Biotechnology Innovation Centre
- We generate oil from plastics, rubber and biomass - **John Kuipers**, CEO, the Pyr-Oil Group
- ORC - Organic Rankine Cycle technology: a viable option to turn waste into distributed power, heating, and cooling - **Alessandro Bertacchini**, Sales Area Manager, Turboden
- REscience: Value from waste - **Ulrik Falkenberg Lending**, Senior Commercial Manager, DONG Energy
- Q&A and discussion

**12:15-14:00**

**SUPERGEN Bioenergy Hub: Renewable heat - The role of bioenergy**

**Boisdale 2**

Can the UK really deliver a significant proportion of its heat from bioenergy? Is there enough biomass? Will it really help meet greenhouse gas reduction targets? How can air quality impacts be managed? Are policy mechanisms in place to support the transition and what is the practical experience of implementing these systems?

Heat is often regarded as a tough sector to decarbonise. The high flexibility provided by bioenergy in providing multiple low carbon heat generation pathways, means that bioenergy will likely play an increasingly important role in the UK heat sector. This session will allow participants to hear from SUPERGEN Bioenergy hub experts and includes a Q&A session on implementation of sustainable biomass heating systems.

- Review of UK policy framework to deliver biomass heating and steps needed to accelerate implementation - **Patricia Thornley**
- How much sustainable biomass will the UK have to sustain the future renewable heat sector: where does it come from and what form is it in? - **Andrew Welfle**
- Can bioenergy heating really reduce greenhouse gas emissions and contribute to the UK meeting its carbon reduction targets - **Mirjam Röder**
- What are the key air quality impacts associated with biomass combustion and how can they be controlled? - **Edward Mitchell**
- What types and scales of technologies can be used to deliver bioheating and what have we learnt from practical implementation to date? - **Gunter Woltron**

**12:15-14:00**

**Heat 2: Technology and innovation**

**Hall 1**

**Chair: Casey Cole, Chairman, Heat Trust; Managing Director, Guru Systems**

- Common myths in heat network design – **Steve Richmond**, Head of Marketing & Technical - Building Solutions, REHAU Ltd
- High temperature water source and air source heatpumps; bringing cleaner, cheaper heat to our existing cities - **Dave Pearson**, Director, Star Renewable Energy

- **Danish expertise**
  - Heat pumps: The future for district heating in the UK? – **Alan Thomson**, Design Engineer, Ramboll Energy
  - You cannot optimize what you do not measure - **Steen Schelle Jensen**, Head of Product Management, Kamstrup A/S
  - Weiss energy solutions based on biomass and waste combustion - **Morten Grøn**, Weiss A/S
  - Introduction to pre-insulated pipe technology - **Christopher Hill**, UK Sales Manager, Logstor
- Hot data: what can heat metering do for you? - **Marko Cosic**, Technical Director, COHEAT
- Heat pump district heating: An integrated design approach – **Richard Bolton**, Senior Project Engineer, Energy Solutions, WSP Parsons Brinckerhoff
- Q&A and discussion

**12:15-14:00**

### Local energy economies

*Organised with Community Energy Scotland*

#### Carron

- Welcome
- Local Energy Economies in a time of austerity: saving costs, adding value and enabling new technologies - **Felix Wight**, Head of Development, Community Energy Scotland
- Developing new energy vectors: Levenmouth Community Energy Project - **Iain Todd**, Iain Todd Consulting
- Maximising grid capacity: ACCESS - **Gillian Hurding**, Community Energy Scotland
- Discussion, Q&A
- Local supply models: Tower Power - **Benny Talbot**, Community Energy Scotland
- Developing the public sector estate and releasing local finance: Edinburgh Solar Coop - **Paul Phare**, Energy4All
- The next generation of local energy: Latest awards of Local Energy Challenge Fund - **Laura Campbell**, Project Manager, Challenge Fund, Local Energy Scotland
- Q&A and discussion

**12:15-14:00**

### Solar 2: Solar in Scotland

#### The future & the opportunity

*Organised with Solar Trade Association Scotland*

#### Dochart

#### Chair: John Forster, Chairman, Solar Trade Association Scotland & Forster Group

- The Solar Trade Association Scotland's 20 key asks for the Scottish Government - **Sonia Dunlop**, Communications and Public Affairs Manager, Solar Trade Association
- Local authorities and the government estate - **Chris Clark**, Director, Emtec Energy
- Challenges for domestic solar PV and solar thermal – **Peter Randall**, Solar Kingdom
- A solar homes revolution for Scotland: The role for solar in meeting new energy efficiency standards for developers and social landlords – **Stuart Elmes**, Founder and Chief Executive, Viridian Solar
- Q&A and discussion

**12:15-14:00**

### Grid 4: Now and looking to the immediate future

#### Gala

#### Chair and scene setter: Barbara Vest, Director of Generation, Energy UK

- Illuminating the Issue of keeping the lights on: Security of electricity supply in GB and Scotland - **Simon Gill**, ClimateXChange Research Fellow in Energy System Modelling, University of Strathclyde

- NorthConnect: Contribution to the Scottish renewable energy sector – **Fiona Henderson**, UK Permitting Lead, NorthConnect Interconnector Project
- DS3- Innovation to deliver greater levels of grid integrated renewable energy in Ireland: a regulatory perspective - **Mo Cloonan**, Networks Analyst, Commission for Energy Regulation
- NINES: DSM customer interaction - **Casey Bauchope**, Project Manager, Future Networks, Scottish and Southern Energy Power Distribution
- Grid sharing: Getting that competitive edge - **Sarah-Jane McArthur**, Managing Associate, Brodies LLP
- Realising the value from flexibility - **Stuart Duncan**, Flexibility Business Development Manager, DONG Energy
- Q&A and discussion

**12:15-14:00**

### Energy Storage 2

#### Renewables integration: delivering benefits and keeping power bills down Part 1

Forth

**Chair: Nigel Holmes, Chief Executive, Scottish Hydrogen and Fuel Cell Association (SHFCA)**

- The challenge of storage in a decarbonised system – **Dr Keith MacLean**, Managing Director, Providence Policy
- Early feedback from an ambitious thermal storage trial - **Andrew Bissell**, CEO, Sunamp
- Energy storage: Options for micro-generation in the smart grid – **Dr David Kane**, Director, Trilemma Consulting Limited
- How can disruptive business models kick-start the residential energy storage market in the UK? - **Julian Jansen**, Analyst, Delta Energy & Environment
- The future of microgrids: how energy storage systems add reliability and efficiency - **Burak Türker**, Consulting Services Manager, Younicos
- Cost benefits of moving electricity by storage, **Ray Noble**, Advisor on Solar, Storage and Electric Vehicles, Renewable Energy Association (REA)
- **STOP PRESS:** Gravitricity: a new storage concept – **Charlie Blair**, Director, Gravitricity
- Panellist: **Ciaran Burns**, Renewable Schemes Manager for REAL, Renewable Energy Association
- Q&A and discussion

**14:05-14:25**

### Quick fire: Electrical

#### Offshore Wind Theatre (Exhibition floor)

*Sponsored by Shepherd and Wedderburn*

- Meeting power challenges during the construction and commissioning of offshore wind farms - **Marcus Saul**, Business Development Manager for Offshore Wind, Aggreko
- Why contingency planning is critical to offshore wind farm operations and maintenance programmes - **Marcus Saul**, Business Development Manager for Offshore Wind, Aggreko

**14:30-16:15**

### Offshore wind 6: Data

#### What you know will help you

#### Offshore Wind Theatre (Exhibition floor)

*Sponsored by Shepherd and Wedderburn*

**Chair: Peter Clive, Senior Scientist, SgurrEnergy**

- How satellite data, and ESA, can support offshore energy - **Callum Norrie**, ESA IAP Ambassador Offshore Energy, ORE Catapult

- It's not the size of your data, It's what you do with it that counts! - **Sam Franklin**, GIS Manager, LR Energy
- Past landscapes and their impact on current offshore windfarm engineering: a case study from the North Sea Basin - **Carol Cotterill**, Senior Marine Geoscientist, British Geological Survey
- Autonomous/unmanned surface vehicles and their application in mainstream activities - **James Hailstones**, Business Manager, ASV Ltd
- RiCORE: Risk-based consenting of offshore renewable energy in the European Union - **Ian Broadbent**, Senior Lecturer, Robert Gordon University on behalf of the RiCORE project consortium
- Q&A and discussion

**14:30-16:15**

### Wave and tidal 6: The realism of economics and technology

Lomond Auditorium

**Chair: Martin Wright, Director, Aurora Ventures Ltd**

- **Keynote address: Professor Peter Fraenkel MBE**, Director, Fraenkel Wright Ltd will be exploring his belief that 'Big is Profitable - Small is Doomed: the vital need to develop multi-MW tidal turbines'
- Some realism about ocean energy economics - **William Kingston**, School of Business, Trinity College, Dublin
- Insights into the latest testing methods used in support of the first array projects – **Tim Baker**, Chief Engineer - Marine Energy, Black & Veatch Ltd
- Advancements in anchoring technology - **Andrew Hunt**, Engineering Manager, Sustainable Marine Energy
- CCell – Extreme wave loads on wave energy devices - **Dr Will Bateman**, CEO and Founder, Zyba Limited
- Designing for short life: build it cheap, fail fast and learn quickly - **Neil Kermod**, Managing Director, European Marine Energy Centre (EMEC)
- Q&A and discussion

**14:30-16:15**

### Sustainable and smart cities technology

**Sustainable and Smart Cities Theatre (Alsh 1)**

*Sponsored by Shepherd and Wedderburn*

**Chair: Richard Bellingham, Director, Institute for Future Cities, University of Strathclyde**

- Glasgow City Observatory – **Janette Hughes**, Project Manager, City Observatory
- Designing the 'Things' of the Internet of Things: Five key considerations – **Tom Copeland**, Senior Mechanical Engineer, 42 Technology Ltd
- Integrating energy systems within buildings: Intelligent power utilisation - **Gary Middlehurst**, Intelligent Buildings Consultant, Advanced Intelligent Buildings
- Making real-time operational control of buildings a reality with 3D simulation – **Aiden Melia**, Project Manager, IES
- Q&A and discussion

**14:30-16:15**

### Exporting UK Green

**Alsh 2**

What do you need to know if you intend to exploit your green IP assets internationally? This panel has experience of what works and share their knowledge of the good, the bad and the unexpected!

- **Gavin Templeton**, Head of Sustainable Finance at the UK Green Investment Bank is responsible for all of the organisation's external and internal engagement on green issues, and leads the sustainability element of its work. Gavin will discuss opportunities and challenges for exploiting non-patented intellectual assets, having successfully launched the Green Investment Handbook in China.

- **James Brodie** is the Director, Scotland and China Business Adviser for the China-Britain Business Council. He has travelled extensively on business throughout China, serving as an interpreter and cultural adviser to foreign companies, a role he has also performed for Chinese companies 'going global'.
- **Alan Gooding** is the Co-Founder and Commercial Director at Smarter Grid Solutions. Smarter Grid Solutions has world leading Active Network Management products for real-time, autonomous, deterministic control of Distributed Energy Resources.
- **Diane Duncan** is the Head of Low Carbon and Environmental Clean Technologies at Highlands and Islands Enterprise, will share her views on export opportunities
- **Galen Fulford**, Founding Director of Biomatrix Water Solutions Ltd, focusses on harnessing photosynthetic energy for water restoration and ecological enhancement, with modular ecosystems.
- **Joanna Boag-Thomson** is a partner in law firm Shepherd and Wedderburn, specialising in intellectual property. She advises clients on international partnering, collaborations and IP licensing.

### 14:30-16:15

#### UK Marine Enabling Technology Programmes 2: The results

*Organised by The Carbon Trust and Scottish Enterprise*

#### Boisdale 2

The UK Marine Enabling Technology Programmes sessions will showcase the combined outputs of the UK's leading marine energy sector support bodies, The Carbon Trust, Scottish Enterprise, Innovate UK and the ORE Catapult. The programmes to be covered from the last couple of years of activity include the Marine Renewables Commercialisation Fund (MRCF); the Tidal Array Cabling; Marine Energy: Supporting Array Technologies (MESAT); and the ORE Catapult's Component Failure Analysis on both Wednesday and Thursday afternoon.

- **14:30:** Welcome & introduction - **Angus Vantoch-Wood**, Manager, The Carbon Trust
- **14:35:** Development of advanced synthetic moorings for marine renewable arrays - **Ben Yeats**, Associate Consultant, Tension Technology International
- **14:50:** Cable Fish, MRCF – **Dave Rigg**, CEO, North Sea Systems
- **15:05:** Drilled rock anchor, MRCF – **Michael McSherry**, Marine Renewables Manager, McLaughlin & Harvey
- **15:20:** Ultrasonic removal of biofouling, MESAT – **Kamer Tuncbilek**, Plant Integrity
- **15:35:** Turbulence in Marine Environments, MRCF – **Kevin Black**, Partrac
- **15:50:** Integrated Measurement Platform, MRCF – **Stuart Baird**, Operations Director, EMEC
- **16:05:** Q&A

### 14:30-16:15

#### Heat 3: Models & finance

#### Hall 1

#### Chair: **Dr Keith MacLean**, Managing Director, Providence Policy

- The future of district energy – **Richard Long**, Head of Business Development - Urban Energy, ENGIE
- The future of domestic heating in the UK: from short-term subsidy to mass market transformation - **Lesley Rudd**, Director of Policy, Sustainable Energy Association
- Lombard on green finance – **Hiten Sonpal**, Senior Director - Green Energy Finance, Lombard
- Innovative delivery: a 60/35 district heating system – **Dr Anton Ianakiev**, Reader in Finite Element Modelling, Nottingham Trent University
- Business models for Heat Networks - **Paul Moseley**, Associate Director, Scottish Futures Trust
- Q&A and discussion

**14:30-16:15**

**Grid 5: The role of technology and innovation**

Gala

**Chair and introduction: Mark Askew, Head of Regulatory Policy, Energy Networks Association**

- Reducing the grid costs of offshore wind projects - **Sean Kelly**, Chairman, Offshore Wind Programme Board – Grid Group
- Innovation in electricity distribution networks: A review of the Low Carbon Networks Fund - **Damien Frame**, Researcher, University of Strathclyde
- The impact of frequency responsive DSM equipment - **Stevie Adams**, Senior Project Manager, Future Networks, Scottish and Southern Energy Power Distribution
- Faster more efficient grid connections - **Marc Smeed**, Senior Consultant, Xero Energy Limited
- HVDC onshore and offshore developments: A supergrid for Europe? - **Dirk Van Hertem**, Professor, University of Leuven
- Multi-attribute site selection and sympathetic project design NorthConnect converter station - **Fiona Henderson**, UK Permitting Lead, NorthConnect Interconnector Project
- Q&A and discussion

**14:30-16:15**

**Energy Storage 3**

**Renewables integration: delivering benefits and keeping power bills down (Part 2)**

Forth

**Chair: Ray Noble, Advisor on Solar, Storage and Electric Vehicles, Renewable Energy Association (REA)**

- Hydrogen from tidal energy: Integrating and adapting marine generation in a constrained grid environment - **Eileen Linklater**, Client Relationship and Marketing Manager, EMEC & **Dr Kris Hyde**, Technology Manager, ITM Power
- Energy Storage for Gigha – A community model for energy storage? - **James Cross**, Senior Consultant, EA Technology
- Lessons learned from 88MW of battery projects - **John Prendergast**, Energy Storage Manager, RES
- Energy storage applications: Where is value best captured? - **John Fitzgerald**, Chief Engineer - Sustainable Energy Solutions, Black & Veatch
- **STOP PRESS**: Back to MW scale - The largest Lithium Titanate battery storage system for Europe – **Dr Dan Rogers**, Electrical Machines and Drives Research Group, Dept of Electronic and Electrical Engineering, University of Sheffield
- Concluding discussion – **Ray Noble** Advisor on Solar, Storage and Electric Vehicles, REA & **Nigel Holmes**, Chief Executive, SHFCA
- Q&A and discussion

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**UKTI Roadshow: Offshore wind opportunities in China and Taiwan comes to All-Energy**

UK Trade and Investment (UKTI) in partnership with China-Britain Business Council (CBBC) and regional partners present offshore wind opportunities in China and Taiwan. This is a unique opportunity for UK companies to gain an insight into these emerging and accessible markets. UKTI's experts offer up-to-date knowledge and unparalleled contacts to guide and support you through your exporting journey. Register free of charge for this session at <https://www.eventbrite.co.uk/e/ukti-roadshow-offshore-wind-opportunities-in-china-and-taiwan-tickets-21489180718>

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## Poster Presentations

Poster presentations are hosted in a specially designed area of the exhibition hall.

### **Improved long-term wind energy estimates using weather forecast models**

Shemaiah Weekes, Senior Lecturer, Centre for Alternative Technology

### **Modelling the operations and maintenance strategy of a wave energy array**

Anthony Gray, Research Engineer, IDCORE/Wave Energy Scotland

### **Optimising tidal lagoon developments: Environment & economics**

Kathryn Elliott, IDCORE Research Engineer, Black & Veatch

### **On the techno-economic assessment of a wave energy converter**

Adrian de Andres, Post-doctoral Research Fellow, Institute for Energy Systems, School of Engineering, The University of Edinburgh

### **Study of different biomass fuels by single particle combustion observation**

Juan Rianza, Postdoctoral Research Associate – Institute for Energy Systems, University of Edinburgh

### **Integrated catalytic-adsorption (ICA) steam gasification for hydrogen production**

Zakir Khan, Research Associate, University of Glasgow

### **Investigation of multi-phase flow in the porous material under seabed**

Umer Saleem, PhD Research Student, Heriot-Watt University

### **Development a small size cogeneration system using 150kW reciprocating gas engine with after-burner for emission**

Jaejoon Choi, Chief in Energy Network Laboratory, Korea Institute of Energy Research

### **Application of novel active thermography techniques for wind turbine blade assessments**

Mariusz Szwedo, PhD, MONIT SHM Sp. z o.o.

### **Increased energy efficiency in Scottish households: trading-off economic benefits and energy rebound effect**

Gioele Figus, Research Assistant and PhD Student, Centre for Energy Policy, University of Strathclyde

### **Multiplier analysis of re-spending rebound effects**

Antonios Katris, Research Assistant, Centre for Energy Policy, University of Strathclyde

### **Addressing the technical, regulatory and commercial barriers to the development of offshore HVDC grids**

Callum MacIver, Research Associate, University of Strathclyde

### **Bearing life predictions on tidal stream turbines - Are classical methods applicable?**

Thomas Nevalainen, PhD Student, University of Strathclyde

### **Hydrogen electrolyzers: how do they fit in the UK system operation and markets?**

Han Xu, PhD, University of Strathclyde

### **The macro economic impact of oil price movements in developing Africa (The Sudan)**

Ayine Richard Simon Nigo, Doctoral Researcher, University of Westminster

## Community and Local Energy Seminar Theatre

Wednesday, 4 May 2016

Exhibition show floor

Local Energy Scotland and Highlands and Islands Enterprise are pleased to be supporting the Community and Local Energy Seminar Theatre in collaboration with All-Energy. The Community Energy Seminar Theatre is a high-energy full day programme giving taster sessions of topics related to community and local energy.

With over 20 speakers across four themes, the day will involve a series of fifteen minute presentations from experts, academia and communities involved in renewable energy projects and local energy systems. Please feel free to drop in and out over the course of the day.

### Introduction

10:30	<b>Introduction - Local Energy Systems</b> Calum Davidson, Director of Energy and Low Carbon, Highlands and Islands Enterprise
10:45	<b>Local Energy Scotland CARES Support</b> Chris Morris, Local Energy Scotland

### Generation

11:00	<b>Community renewables in an incentive free world</b> Simon Morris, Senior Consultant, Ricardo Energy and Environment
11.15	<b>Breaking down the barriers to community renewables</b> Mark McRae, Partner & Kay Thomson, Director, Scott-Moncrieff
11.30	<b>Solar energy impact in community energy</b> Jon Cape, Managing Director, iPower Energy
11.45	<b>The challenges of a local energy economy in a remote and rural area</b> Alison Macleod, Local Development Officer, Applecross Community Company
12.00	<b>One MEGAWATT of new hydropower for Scotland? One KILOWATT at a time!</b> Gordon Black, Director, babyHydro Ltd
12.15	<b>Innovations in financing community energy</b> Philip Bazin, Environment Team Manager, Triodos Bank

### Supply

12.30	<b>Microgrids: What are they and why are they of interest?</b> Dr Nigel Scott, Director and Principal consultant, Xero Energy Limited
12.45	<b>ABB microgrid example applications for island and remote communities from around the world</b> Peter Jones, Technology Strategy Manager, ABB
13.00	<b>Energy system innovation: Not too big to fail, but too big to succeed?</b> Keith Bell, Scottish Power Professor of Smart Grids, University of Strathclyde
13:15	<b>How to maximise the value of your exported power – more important than ever with the scaling back of government support and falling wholesale prices</b> Stuart Stephens, Commercial Director, e-Power

### Storage

14.00	<b>Energy Storage for Gigha – A community model for energy storage?</b> James Cross, Senior Consultant, EA Technology
14.15	<b>Minewater geothermal district heating: An economically viable, socially beneficial and environmentally attractive sustainable heating option</b> David Townsend, Founder and Managing Director, TownRock Energy
14.30	<b>Hydrogen from tidal energy: Integrating and adapting marine generation in a constrained grid environment</b> Neil Kermode, Managing Director, European Marine Energy Centre (EMEC) & Dr Kris Hyde, Technology Manager, ITM Power

14.45	<b>Progress with the Levenmouth community energy project</b> David Hogg, Technical Manager, Bright Green Hydrogen Ltd
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### Partnerships

15:00	<b>Solarisation of Manchester</b> Amy Cameron, Crowdfunding Campaign Manager, 10:10
15.15	<b>Shared structures for community investment</b> Stephen Phillips, Partner, Burness Paull, LLP
15.30	<b>Renewable Community Empowerment in Northern Territories</b> Ewan Ramsay, Operations Director, International Resources and Recycling Institute
15.45	<b>Community Energy: Exploring opportunities for partnership through inward investment</b> John McGinnes, Senior International Executive, Scottish Development International
16.00	<b>Shared ownership – community investment in commercial developments</b> Laura Nicolson, Shared Ownership Development Manager, Local Energy Scotland
16.15	<b>Outer Hebrides Local Energy Hub</b> Felix Wight, Development Manager, Community Energy Scotland

### Summary

16:30	<b>Summing up and close</b> <b>HIE Networking and drinks reception at the HIE Pavilion</b>
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## Wave and Tidal Seminar Theatre

Sponsored by Shepherd and Wedderburn

Wednesday, 4 May 2016 (REPEATED on Day 2 but new times highlighted in yellow)

10:30	<b>Tidal range developments: how could several tidal lagoons interact and affect one another?</b> Tim Baker, Chief Engineer – Marine Energy, Black & Veatch
10:40	<b>Optimising tidal lagoon development: An environmental focus</b> Kathryn Elliott, IDCORE Research Engineer, Black & Veatch
10:50	<b>WaveDrive: Rapid development of a low cost linear generator for wave energy</b> Jeremy Carey, Managing Director, 42 Technology
11:00	<b>The changing market for marine energy: EMEC experience</b> Eileen Linklater, Client Relationship and Marketing Manager, EMEC
11:10	<b>The MARIBE project</b> Mike Blanch, Associate Director, BVG Associates
Break	
	<b>STANDARDS</b>
11:30-11:50	<ul style="list-style-type: none"> <li>• <b>Embryonic export: The benefits of global collaboration and standardisation</b> John Griffiths, Technical Director, EMEC</li> <li>• <b>IEC RE ME</b> Rebecca Sykes, Lloyd's Register</li> <li>• <b>Managing technical risk – the new DNV GL tidal turbine standard</b> Claudio Bittencourt – Business Development Director, DNV GL</li> </ul>
12:00-12:20	<b>Tidal/Wave: funding prospects</b> <i>With reflections on the market and developments since MeyGen; and on current issues facing wave and tidal projects</i> George Boyle, Partner, Corporate Finance, Shepherd and Wedderburn
Break	
12.30-14:00	<b>At home with EMEC: Quick fire presentations on activities at EMEC</b> <b>EMEC updates from:</b> <ul style="list-style-type: none"> <li>• Hydrogen from tidal energy</li> <li>• Wildlife data analysis report</li> </ul> <b>Developer updates from:</b> <ul style="list-style-type: none"> <li>• Scotrenewables</li> <li>• OpenHydro</li> <li>• Tocado</li> <li>• Sustainable Marine Energy</li> <li>• CorPower Ocean</li> </ul> <b>Project partner updates from:</b> <ul style="list-style-type: none"> <li>• ORE Catapult: Component testing project</li> <li>• ORE Catapult: Technology Assessment Process (TAP)</li> <li>• Optasense: Cable monitoring solutions</li> <li>• JBA Consulting: Marine mission planning</li> </ul>
Break	
14:10	<b>Northern Ireland – the place to be for R&amp;D!</b> Sammantha McCloskey, Director, Centre for Advanced Sustainable Energy
14:20	<b>Why dual jacket sealing is the new belt and braces approach delivering long term reliability for tidal energy connectivity</b> Keith Wells, Managing Director, Scientific Management Associates
14:30	<b>An upside down approach to achieving grid parity for wave and tidal energy systems</b> Mike Blanch, Associate Director, BVG Associates
14:40	<b>Don't just guess: Marine growth assessment on off-shore renewable energy devices</b> Adrian Macleod, Marine Scientist, SAMS Research Services Ltd
Break	

<b>15:00</b>	<b>Component reliability – making it public</b> Vicky Coy, Project Manager, Offshore Renewable Energy Catapult
<b>15:10</b>	<b>Reliability in a sea of risk</b> Vicky Coy, Project Manager, Offshore Renewable Energy Catapult
<b>15:20</b>	<b>Reducing wave energy installation costs through innovative ground modelling techniques</b> William Hodson, Geoscience Project Manager, LR Senergy
<b>15:30</b>	<b>Waves4Power</b> <a href="https://youtu.be/DFxs6mW3kB0">https://youtu.be/DFxs6mW3kB0</a>
<b>15:40</b>	<b>Schottel Hydro's Triton platforms for multi-MW tidal projects: Update on FORCE &amp; perspectives for UK projects</b> Niels Alexander Lange, Managing Director, SCHOTTEL Hydro GmbH
<b>15:50</b>	<b>The good, the bad and the ugly – reflections on 15 years of renewable development in the UK from an Orkney perspective</b> Gareth Davies, Chair, Orkney Renewable Energy Forum

## Wave and Tidal Seminar Theatre

Sponsored by Shepherd and Wedderburn

Thursday, 5 May 2016 (REPEAT of Day 1 but new times highlighted in yellow)

10:30	<b>Tidal range developments: how could several tidal lagoons interact and affect one another?</b> Tim Baker, Chief Engineer – Marine Energy, Black & Veatch
10:40	<b>Optimising tidal lagoon development: An environmental focus</b> Kathryn Elliott, IDCORE Research Engineer, Black & Veatch
10:50	<b>WaveDrive: Rapid development of a low cost linear generator for wave energy</b> Jeremy Carey, Managing Director, 42 Technology
11:00	<b>The changing market for marine energy: EMEC experience</b> Eileen Linklater, Client Relationship and Marketing Manager, EMEC
Break	
11:20-12:40	<b>At home with EMEC: Quick fire presentations on activities at EMEC</b> <b>EMEC updates from:</b> <ul style="list-style-type: none"> <li>• Hydrogen from tidal energy</li> <li>• Wildlife data analysis report</li> </ul> <b>Developer updates from:</b> <ul style="list-style-type: none"> <li>• Scotrenewables</li> <li>• OpenHydro</li> <li>• Tocardo</li> <li>• Sustainable Marine Energy</li> <li>• CorPower Ocean</li> </ul> <b>Project partner updates from:</b> <ul style="list-style-type: none"> <li>• ORE Catapult: Component testing project</li> <li>• ORE Catapult: Technology Assessment Process (TAP)</li> <li>• Optasense: Cable monitoring solutions</li> <li>• JBA Consulting: Marine mission planning</li> </ul>
Break	
12:50	<b>The MARIBE project</b> Mike Blanch, Associate Director, BVG Associates
13:00-13:30	<b>STANDARDS</b> <ul style="list-style-type: none"> <li>• <b>IEC RE ME</b> Rebecca Sykes, Lloyd's Register</li> <li>• <b>Managing technical risk – the new DNV GL tidal turbine standard</b> Benson Waldron, Principal Engineer, DNV GL</li> </ul>
13:30-13:50	<b>Tidal/Wave: funding prospects</b> <i>With reflections on the market and developments since MeyGen; and on current issues facing wave and tidal projects</i> George Boyle, Partner, Corporate Finance, Shepherd and Wedderburn
Break	
14:10	<b>Northern Ireland – the place to be for R&amp;D!</b> Sammantha McCloskey, Director, Centre for Advanced Sustainable Energy
14:20	<b>Why dual jacket sealing is the new belt and braces approach delivering long term reliability for tidal energy connectivity</b> Keith Wells, Managing Director, Scientific Management Associates
14:30	<b>An upside down approach to achieving grid parity for wave and tidal energy systems</b> Mike Blanch, Associate Director, BVG Associates
14:40	<b>Don't just guess: Marine growth assessment on off-shore renewable energy devices</b> Adrian Macleod, Marine Scientist, SAMS Research Services Ltd
Break	
15:00	<b>Component reliability – making it public</b>

	Vicky Coy, Project Manager, Offshore Renewable Energy Catapult
<b>15:10</b>	<b>Reliability in a sea of risk</b> Vicky Coy, Project Manager, Offshore Renewable Energy Catapult
<b>15:20</b>	<b>Reducing wave energy installation costs through innovative ground modelling techniques</b> William Hodson, Geoscience Project Manager, LR Senergy
<b>15:30</b>	<b>Waves4Power – Video</b> <a href="https://youtu.be/DFxs6mW3kB0">https://youtu.be/DFxs6mW3kB0</a>
<b>15:40</b>	<b>The good, the bad and the ugly – reflections on 15 years of renewable development in the UK from an Orkney perspective</b> Gareth Davies, Chair Orkney Renewable Energy Forum

## Business Energy Efficiency Seminar Theatre

Thursday 5 May 2016

Exhibition show floor

<b>10:30</b>	<b>Implementing energy efficiency measures: Overcoming the legal hurdles</b> Mark Routley, Partner, TLT Solicitors
<b>10:45</b>	<b>Accelerating investment in energy efficiency in the public sector in Scotland</b> Jamie Goth, Associate Director, SFT and the Low Carbon Infrastructure Transition Programme (LCITP)
<b>11:00</b>	<b>ThermCERT - Space applications in support of Future Cities</b> Sabine Lazuhina, Project Manager, Stevenson Astrosat
<b>11:15</b>	<b>The global mining industry's need for energy efficiency and onsite renewables</b> <i>Did you know that c3% of the world's energy is used to crush rock?</i> Mark Smith, Head of Mining and Marine, Trade Group, UK Trade & Industry
<b>Break</b>	
<b>11:45</b>	<b>NewTREND: Next generation district integrated building retrofit</b> Nick Purshouse, Project Manager, IES
<b>12:00</b>	<b>IMPRESS: Energy reducing pre-fabricated retrofit panels (BIM) integrated</b> Nick Purshouse, Project Manager, IES
<b>12:15</b>	<b>Energy efficient heating within existing buildings with wireless room level control</b> Janette O'Hagan, Co-Founder and CEO, Okotech Ltd T/A heatboss
<b>12:30-13:30</b>	How did they do it, what can I learn from their experience? <ul style="list-style-type: none"> <li>• Introduction by Paul Wedgwood, General Manager-Scotland, The Carbon Trust</li> <li>• Victoria Barby, Environment Performance Manager, The Scottish Parliament</li> <li>• 25% carbon emissions reduction in 5 years - Chris Wilson, Energy Manager, Arthur McKay</li> <li>• 10 tips for delivering low carbon heat networks: CHP/DH, the CIBSE CoP and more: University of Edinburgh - David Somervell, Associate, Edinburgh Centre for Carbon Innovation (ECCI)</li> </ul> <p><i>Immediately after this part of the programme some of The Carbon Trust's specialist staff will be available for 1-2-1 advice sessions in the Share Fair</i></p>
<b>Break</b>	
<b>13:45</b>	<b>How to access specialist facilities to create, develop, test and analyse your products</b> Heather Alexander, Marketing Executive University Assets, Interface
<b>14:00</b>	<b>Optimising district heating design for energy efficiency</b> Stuart Reid, Head of Business Development & Marketing, HWEnergy
<b>14:15</b>	<b>BPI Protean OHL system</b> Bob Ford, Managing Director, British Power International
<b>14:30</b>	<b>Realising the power of energy storage</b> Paul Connelly, Director of Planning and Regeneration, LDA Design
<b>Break</b>	
<b>15:00</b>	<b>The Energy Saving Trust procurement guide</b> Martin Murphy, Managing Director, SCMG on behalf Energy Saving Trust, Scotland
<b>15:15</b>	<b>Increased energy efficiency in Scottish households: Trading-off economic benefits and energy rebound effect</b> Gioele Figus, Research Assistant and PhD Student, centre for Energy Policy, University of Strathclyde