

The All-Energy 2016 Conference Programme

Welcome to the All-Energy 2016 Conference. All sessions are free to attend without the need to pre-book.

The Lomond Auditorium, Alsh, Boisdale, Hall 1, Carron and Dochart conference rooms are all located across the concourse from the exhibition hall. The Offshore Wind Theatre is a 'silent theatre' and is located in the exhibition hall.

WEDNESDAY 4 MAY

09:00-10:30

OPENING PLENARY SESSION

Fleming Auditorium

09:00-10:30

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 Rigger**, 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

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

11:00-12:30

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**, 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

Wave and tidal 1: Status 2016

Lomond Auditorium

11:00-12:30

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

- **Keynote address: Tim Cornelius**, Chief Executive Officer, Atlantis Resources Limited
- 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

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

11:00-12:30

Chair: Clare Foster, Partner, Shepherd and Wedderburn

- Energy efficiency market evolution - **Iain Watson**, 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**, CBRE
- Transport, energy networks & storage in cities - **Andrew Aldridge**, Green Angel Syndicate
- ECCL on Sustainable Cities Innovation Support - **Ed Craig**, Head of Enterprise & Innovation, The Edinburgh Centre for Carbon Innovation (ECCL)
- Q&A and discussion

Nuclear: The nuclear life cycle

Alsh 2

11:00-12:30

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, Energy Technologies Institute
- Beyond current new build plans: Prospects for small modular reactors in the UK - **Adrian Bull**, Director of External Relations, National Nuclear Laboratory
- Developing the skills needed to enter and succeed in the Nuclear Industry - **Peter Faccenda**, Business Development Manager, National Skills Academy for Nuclear Manufacturing
- Panellist: **Annajoy David**, Programme Director, Centre of Nuclear Excellence
- Q&A and discussion

Hydropower: A world of variety

Organised with the British Hydropower Association

Boisdale 2

11:00-12:30

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**, Turbiwatt
- **Andrew Hughes**, Head of Renewables, Deepbridge Capital
- The water engine technologies' story - **Euan Hogg**, Director, Water Engine Technologies
- Q&A and discussion

Innovate UK and DECC innovation showcase

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

Hall 1

Innovate UK and DECC Energy Innovation programmes are delighted to be working with the All-Energy team in 2016 to showcase some of the best UK energy innovation projects to the worldwide energy community.

We're planning an exciting innovation showcase session including pitching, networking, and a project directory as part of the wider conference agenda to help our great innovators meet the marketplace, potential investors and collaborators and achieve a rapid step forward towards commercialisation.

Future of renewables and energy management in the rural sector

Carron

11:00-12:30

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 – Rural, 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

Onshore wind 1: Setting the scene

Dochart

11:00-12:30

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
- Q&A and discussion

Energy systems

Gala

11:00-12:30

Chair and introduction: Assessing the need for low-carbon technologies using an energy systems approach: Dr Paul Dodds, Lecturer in Energy Systems, UCL Energy Institute, UCL Institute for Sustainable Resources

- Decarbonisation strategies in the UK in general and the fifth carbon budget in particular – **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 issue - **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

Finance and funding: New models for financing energy

Organised with Cleantech Investor

Forth

11:00-12:30

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, Amarengo
- New models for financing energy - **Louise Wilson**, Founder & Managing Director, Abundance
- **Andrew Buglass**, Founder, Buglass Energy Advisory
- Investor Confidence Project - **Dr Steven Fawkes**, Founder and Principal at EnergyPro Ltd
- **Mark Meyrick**, Director of Trading, Good Energy
- Q&A and discussion

12:45-13:45

Quick fire: Industry direction and project overviews

Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

12:45-13:45

- 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 claims: an insurer’s approach - **Jonas Dalsgaard**, Renewable Energy, UK Offshore Wind, 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**, National Subsea Research Initiative (NSRI)

Quick fire: Technology updates

Sustainable and smart cities theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

12:45-13:45

- Fuel cell bus pilots’ facilitate future deployment – **Flip Bamelis**, R&D Project Coordinator, Van Hool nv
- Open Energi update – **Lucy Symons**, Open Energi
- Towards the development of a virtual 3D city model: Dundalk, Ireland – **Catherine Conaghan**, Senior Project Manager, IES
- TherrmCERT update

14:00-15:30

Offshore wind 2: Developers and the supply chain

Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

14:00-15:30

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

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

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

Wave and tidal 2: The essentials

Consenting, finance, legal, environmental

Lomond Auditorium

14:00-15:30

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

- **Keynote address: Ronnie Quinn**, General Manager – Scotland, 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

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

14:00-15:30

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

- Energy efficiency market evolution in public sector - **Iain Watson**, Director, Green Investment Bank
- 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
- Green Loan case study - **Jeremy Martin**, Energy & Sustainability Manager, Southend-on-Sea Borough Council
- Local Authority Energy Index - **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
- Q&A and discussion
 - Additional panellist: **Chris Stark**, Head of Energy Division, Scottish Government

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

Alsh 2

14:00-15:30

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 & The Environment, Glasgow City Council and Chief Resilience Officer for Glasgow

- Gavin Slater, City Energy Manager, Glasgow City Council
- Anne Murray, Invest Glasgow Manager
- Kevin Kane, Executive Director, Glasgow Economic Leadership
- Speaker tbc, Jacobs

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

Organised by Cranfield University

Boisdale 2

14:00-15:30

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

- EPSRC Centre for Doctoral Training in Renewable Energy Marine Structures – **Professor Feargal Brennan**, Cranfield University
- EPSRC Centre for Doctoral Training in Wind and Marine Energy Systems - **Professor Bill Leithead**, University of Strathclyde
- EPSRC Industrial Doctoral Centre for Offshore Renewable Energy (IDCORE) - **Professor David Ingram**, University of Edinburgh
- Additional speakers tbc

Innovate UK and DECC innovation showcase (cont'd)

Hall 1

14:00-15:30

Innovate UK and DECC Energy Innovation programmes are delighted to be working with the All-Energy team in 2016 to showcase some of the best UK energy innovation projects to the worldwide energy community.

We're planning an exciting innovation showcase session including pitching, networking, and a project directory as part of the wider conference agenda to help our great innovators meet the marketplace, potential investors and collaborators and achieve a rapid step forward towards commercialisation.

Bioenergy 1: Biomass

Organised with Renewable Energy Association

Carron

14:00-15:30

Chair: Hamish McPherson, Partner, Aurium Capital Partners

- Biomass: Designing to maximise efficiency and payback for your business - **Thomas 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 - **Matthias von Senfft**, Sales Representative, Spanner RE² 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**, Director of Knowledge Exchange, 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

Onshore wind 2: Growing old gracefully

Life extension, repower and decommissioning UK onshore wind

Organised with Everoze Partners

Dochart

14:00-15:30

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. Aging 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, Everoze Partners

- Legal and consenting perspective: **Colin Innes**, Partner and Head of Planning, 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

Grid 1: Action on smart grid supply chain

Organised by The IET

Gala

14:00-15:30

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.

The speakers will be drawn from the WS9 team.

Sustainable transport

Forth

14:00-15:30

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

- 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
 - Ultra low emission hydrogen vehicles TODAY - **Amanda Lyne**, Managing Director, ULEMCo Ltd
 - Q&A and discussion
-

15:35-15:55

Quick fire: Global perspectives

Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

15:35-15:55

- 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
-

16:00-17:30

Offshore wind 3: Health, safety and training

Offshore Wind Theatre (Exhibition floor)

Sponsored by Shepherd and Wedderburn

16:00-17:30

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

- **Trevor Johnson**, HM Principal Inspector of Health and Safety, Health and Safety Executive (HSE)
- **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
- **John Bradshaw**, Technical Adviser, International Marine Contractors Association (IMCA)
- **John Howard**, International Jack Up Barge Operators Association (IJUBOA)
- Panellist: Mackinnons
- Q&A and discussion

UK Marine enabling technology programmes 1: The results (Wave and tidal 3)

Organised by The Carbon Trust and Scottish Enterprise

Lomond Auditorium

16:00-17:30

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: Aquatera: Moored barge, SE Tidal Array Cabling - **Daniel Wise**, Senior Consultant - Head of Offshore Technology, Aquatera
- 16:20: Jee: U-Tube, SE Tidal Array Cabling – **Joe Gransden**, Lead Engineer, Jee Ltd
- 16:35: IT Power, DP barge, MESAT – **Ned Minns**, IT Power
- 16:50: Mojo Maritime: HighFlow4 vessel, MESAT – **Steve Jermy**, Chartered Marine Renewable Energy Technologist, Mojo Maritime
- 17:05: TIPTORS/Component Failure Analysis, ORE Catapult – **Simon Cheeseman**, Wave & Tidal Energy Specialist, ORE Catapult
- 17:20: Q&A

Smart cities

Sustainable and Smart Cities Theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

16:00-17:30

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 journey to becoming a world leading smart and sustainable city - **Gary Walker**, Programme Director Future City Glasgow, 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**, Scottish Enterprise
- Energy issues and opportunities for smart cities - **Richard Bellingham**, Director, Institute for Future Cities, University of Strathclyde
- Q&A and discussion

Geothermal

Alsh 2

16:00-17:30

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, Geothermal Engineering Ltd
- Deep Geothermal (hot rocks) Single Well Demonstrator Project, 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
- Panellist: **Kirsten Pasturel**, Completion Engineer, Ross Engineering A/S
- Q&A and discussion

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

Boisdale 2

Organised by Marine Scotland

16:00-17:30

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.

Energy efficiency

Hall 1

16:00-17:30

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, Ricardo Scotland
- 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**, NHS National Services Scotland
- Support available to Scottish businesses operating in the low carbon market – **Ian Cuthbert**, Programme Manager , Energy Saving Trust, Scotland
- Q&A and discussion

Bioenergy 2: Biomass, biogas, AD and biofuel

Organised with Renewable Energy Association

Carron

16:00-17:30

Chair: tbc

- 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

Onshore wind 3: Innovations in operations

Dochart

16:00-17:30

Chair: tbc

- 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 - **Craig Roberts**, CEO and **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 Ltd
- Effective usage of wind measurements to improve onshore and offshore mesoscale model products - **Gil Lizcano**, R&D Director, Vortex
- Q&A and discussion

Grid 2: Constraint managed zones workshop

Organised by Scottish and Southern Energy Power Distribution

Gala

16:00-17:30

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

Hydrogen and fuel cells

Forth

16:00-17:30

Chair: John Lidderdale, Chairman, Scottish Hydrogen and Fuel Cell Association (SHFCA)

- **Keynote address: Earnell Kelly**, International Sales Director, Doosan Fuel Cell America
- 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, Training and Projects Manager, Tower Transit Operations Limited
- Leeds Citygate - **Dan Sadler**, H21 Project Manager, Northern Gas Networks
- Q&A and discussion

EXHIBITION SHOW FLOOR SEMINAR THEATRES

10:30-16:00

Also taking place Wednesday - 4th of May, are the quick fire presentations within our exhibition show floor seminar theatres. Programme will be available on our website shortly.

- **Community and Local Energy**, Organised with Local Energy Scotland and Highland and Islands Enterprise
- **Wave and Tidal** (repeats on day 2), sponsored by Shepherd and Wedderburn

THURSDAY 5 MAY

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

09:45-11:30

Chair: Marte Riiber de Picciotto, Head of Section Norway - Renewables Advisory, DNV GL

- 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**, Principle Power
- Floating power plant: an update – **Chris McConville**, UK Business Developer, Floating Power Plant
- Innovative foundation design in developing offshore wind – **Una Brosan**, Growth Manager – Offshore Wind, Atkins
- Developing SATH© the concrete floating platform for offshore wind market - **David Carrascosa**, Head of Offshore Wind, Saitec
- The verification path – **Johann Slätte**, Senior Consultant, DNV GL
- Q&A and discussion

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

Lomond Auditorium

09:45-11:30

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**, Tocado
- 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

Sustainability and energy efficiency in the food & drink sector

Sustainable and Smart Cities Theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

09:45-11:30

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
- General overview of renewable investment in the Scotch Whisky - **Peter Clark**, Head of Operational Affairs, Scotch Whisky Association
 - Company case study - **Iain Lochhead**, Operations Director, John Dewar & Sons
- Low carbon opportunities for food and drink businesses - **Fiona Chan**, Sustainability Manager, Scotland Food & Drink
 - Member company case study: **Alastair Macphie**, Chairman, Macphie
- 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

Policy changes then technology answers

Organised by *Scottish Energy Association (SEA)*

Alsh 2

09:45-11:30

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 - **Mike Parr**, Engineer at PWR Consulting Limited & **Simon Minett**, Managing Director, Challoch Energy
- Panel discussion and Q&A

Carbon capture and storage

Boisdale 2

09:45-11:30

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

- Caledonia Clean Energy Project at Grangemouth - **Stephen Kerr**, Project Director, Caledonia Clean Energy Project
- The roadmap for industrial capture in Grangemouth - **Chris Bryceland**, Scottish Enterprise & **Katherine Knight**, 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
- Q&A and discussion

Heat 1: Policy

Setting the heat scene and agenda

Hall 1

09:45-11:30

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 & Jan Reid**, 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

Shared ownership

Organised with Local Energy Scotland

Carron

09:45-11:30

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 Nobel**, Merk Hydro
- A shared revenue example – **Andrew Stewart**, Stewart Energy – Wind
- A developer's perspective: opportunities & challenges – **Gemma Hamilton**, Brookfield Renewable UK

Finance and legal panel

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

Solar 1: The changing face of solar

Organised with Solar Trade Association Scotland

Dochart

09:45-11:30

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

- **Keynote address:** speaker tbc, MASEN
- Delivering solar without subsidy - **Ray Noble**, Director, Solar BIPV
- Securing the future of the solar industry - **Robert Shaw**, Director, LDA Design
- Solar PV and storage: where is value best captured - **Daniel Matson**, Senior Renewable Energy Engineer, Black & Veatch Ltd
- Panellist: **Sue Milton**, RBS
- Q&A and discussion

Grid 3: Onshore transmission and CATO**Different perspectives****Gala**

09:45-11:30

- 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

- 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
- **Malcolm Burns**, Senior Regulation Manager, SHE Transmission Ltd
- An OFTO representative – **Sean Kelly**, Transmission Excellence (previous Co-Founder of Transmission Capital)
- **Gordon Hutcheson**, Senior Manager, Networks, Transmission Competition Policy, Ofgem
- Q&A and discussion

Energy storage 1: Grid balancing and support**MW scale, keeping the lights on****Forth**

09:45-11:30

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

- **Keynote address: Graham Cooley**, Chief Executive, 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
- **Richard Braakenburg**, Green Investment Bank
- **David Sanders**, 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

11:40-12:10

- Heron's Application for Wind Industry - Gorillas Need Not Apply - **Iain Steven**, Technical Director, Celtic Design Consultants Limited
- Spreading the Risk, Piling Up the Opportunities: Offshore Diversification - **Alan Duncan**, Senior Associate, BVG Associates
- Service Operations Vessel (SOV) - **Lucas Zaat**, Head of Design & Proposal, 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

12:15-14:00

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**, CEO, Head of R&D, 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

Wave and tidal 5: Practical experience in tidal array developments

Lomond Auditorium

12:15-14:00

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 Taaffee**, Project Manager, MeyGen Phase 1A & **Andy Baldock**, Director - Sustainable Energy Solutions, Black & Veatch
- DeltaStream: an update - **Martin Murphy**, Managing Director Tidal Energy Ltd
- A community-scale tidal array at EMEC – **Jason Hayman**, Managing Director, Sustainable Marine Energy
- Q&A and discussion

Enabling smart cities...big data conundrums

Sustainable and Smart Cities Theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

12:15-14:00

- Whilst smart cities raise a number of exciting prospects they also present policy, cultural and legal challenges.
- Concerns over security and privacy and around the ownership of data generated and which is often used to support the costs of such projects will need to be tackled.

- Traditional regulatory challenges include spectrum issues and whether sufficient spectrum capacity for growing number of devices. There are questions of permanent roaming for those devices equipped with SIMs.
- Whilst Ofcom has already begun to consider the internet of things, there are opportunities for Ofgem, Ofcom and Ofwat to work together to address some of the challenges in a cohesive way.

Participants

- **Gordon Moir**, Partner, CDR – Regulation and Markets, Shepherd and Wedderburn
- **Steven Moore**, Principal Consultant, Sustainable Business

Energy from waste

Organised with Renewable Energy Association

Alsh 2

12:15-14:00

Chair: Hamish McPherson , Partner, Aurium Capital Partners

- **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
- 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
- REnescience: Value from waste - **Ulrik Falkenberg Lending**, Senior Commercial Manager, DONG Energy
- Q&A and discussion

SUPERGEN Bioenergy Hub: Renewable Heat - the Role of Bioenergy

Boisdale 2

12:15-14:00

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 Roeder**
- 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**

Heat 2: Technology and innovation

Hall 1

12:15-14:00

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
- Water source heat pumps - **Dave Pearson**, Director, Star Renewable Energy
- **Danish expertise**
 - Comparing district heating with a heavy insulation/heat pumps – **Alan Thomson**, Ramboll
 - You cannot optimize what you do not measure - **Steen Schelle Jensen**, Head of Product Management, Kamstrup A/S
 - **Morten Grøn**, Weiss
 - 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

Local energy economies

Organised with Community Energy Scotland

Carron

12:15-14:00

- Welcome
- Local Energy Economies in a time of austerity: saving costs, adding value and enabling new technologies - **Felix Wight**, 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 - **Georgy Davis & Benny Talbot**, Community Energy Scotland
- Developing the public sector estate and releasing local finance: Edinburgh Solar Coop - **Paul Phare**, Energy 4 All
- The next generation of local energy: Latest awards of Local Energy Challenge Fund - **Chris Morris & Laura Campbell**, Local Energy Scotland
- Discussion, Q&A

Solar 2: Solar in Scotland

The future & the opportunity

Organised with Solar Trade Association Scotland

Dochart

12:15-14:00

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**, Viridian Solar
- Q&A and discussion

Grid 4: Now and looking to the immediate future

Gala

12:15-14:00

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 - **Richard Blanchfield**, Deputy Project Manager and Technical 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**, Business Analyst, 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

Energy storage 2: Renewables integration

Delivering benefits and keeping power bills down (Part 1)

Forth

12:15-14:00

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**, 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, **Alexander Schönfeldt**, Head of Sales - EMEA, Younicos
- Cost benefits of moving electricity by Storage, **Ray Noble**, Advisor on Solar, Storage and Electric Vehicles, Renewable Energy Association (REA)
- Panellist: **Virginia Graham**, Chief Executive, Renewable Energy Consumer Code (RECC)
- Q&A and discussion

14:05-14:25

Quick fire: Electrical

Sustainable and Smart Cities Theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

14:05-14:25

- Every minute costs: the importance of temporary power in offshore construction and commissioning - **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

14:30-16:15

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**, 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

Wave and tidal 6: The realism of economics and technology

Lomond Auditorium

14:30-16:15

Chair: Martin Wright, Director, Aurora Ventures Ltd

- **Keynote address: Professor Peter Fraenkel MBE**, Director, Fraenkel Wright Ltd will 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

Sustainable and smart cities technology

Sustainable and Smart Cities Theatre (Alsh 1)

Sponsored by Shepherd and Wedderburn

14:30-16:15

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
- Future power in buildings – **Rick Hartwig**, Sector Head for the Built Environment, the IET
- Making real-time operational control of buildings a reality with 3D simulation – **Catherine Conaghan**, Senior Project Manager, IES
- Q&A and discussion

Exporting UK Green

Alsh 2

14:30-16:15

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 Manager, 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'.
- **Colin Gault** is the Head of Products 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**, Managing 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.

UK Marine enabling technology programmes 2: The results

Organised by The Carbon Trust and Scottish Enterprise

Boisdale 2

14:30-16:15

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**, The Carbon Trust
- **14:35:** Synthetic fairleads/advanced mooring system, MESAT/MRCF - **Ben Yeats**, Tension Technology International
- **14:50:** Cable Fish, MRCF – **David Rigg**, North Sea Systems
- **15:05:** Drilled rock, MRCF – **Michael McSerry**, 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**, EMEC
- **16:05:** Q&A

Heat 3: Models & finance

Hall 1

14:30-16:15

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

Grid 5: The role of technology and innovation

Gala

14:30-16:15

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

Energy storage 3: Renewables integration

Delivering benefits and keeping power bills down (Part 2)

Forth

14:30-16:15

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

- Hydrogen from tidal energy: overcoming grid constraints - **Dr Kris Hyde**, Technology Manager, ITM Power and **Eileen Linklater**, Client Relationship and Marketing Manager, EMEC
- 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 (tbc)
- Q&A and discussion

EXHIBITION SHOW FLOOR SEMINAR THEATRES

10:30-16:00

Also taking place Wednesday - 4th of May, are the quick fire presentations within our exhibition show floor seminar theatres. Programme will be available on our website shortly.

- **Business Energy Efficiency**
- **Wave and Tidal** (repeat from day 1), *sponsored by Shepherd and Wedderburn*

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

Etive

10:00-12:00

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.

Poster Presentations

Tuesday and Wednesday, 4-5 May 2016

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 Riaza, 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

Benchmarking China's performance in global wind technology innovation

Rui Hu, PhD student, Imperial College London

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 Szwed, 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