



MOBILISING THE RESEARCH, INNOVATION AND EDUCATIONAL CAPACITIES OF EUROPE'S UNIVERSITIES IN THE SET-PLAN



## 4th UNI-SET Energy Clustering Event

### *Universities in the Energy Transition: Focus on Sustainable Transport and Carbon Capture, Storage & Use*

**Hosted by**  
**Imperial College London**

**27-28 March 2017**

**#UNISSET2017UK**

### Preliminary Programme

#### Monday 27 March

12.00-13.00	<b>Registration &amp; Lunch</b>
13.00-14.20	<b>Welcome Addresses</b> <ul style="list-style-type: none"> <li>- Professor James Stirling, First Provost, Imperial College London</li> <li>- Prof. Rolf Tarrach, President, European University Association</li> </ul>
13.20-14.00	<b>Keynote: "An Industry Perspective on Energy Innovation Collaboration"</b> <ul style="list-style-type: none"> <li>- John MacArthur, Vice President Integrated Gas Technology, Shell UK</li> </ul>
14.00-14.20	<b>EU Priorities for Energy Research &amp; Innovation</b> <ul style="list-style-type: none"> <li>- Peter Crawley, Policy Officer, Surface Transport Unit, DG Research &amp; Innovation, European Commission</li> </ul>
14.20-15.00	<b>Introduction to UNI-SET and the Conference Objectives</b> <ul style="list-style-type: none"> <li>- Prof. Torbjørn Digernes, Chair of the UNI-SET Steering Committee; former Rector, Norwegian University of Science and Technology</li> <li>- Dr Lidia Borrell-Damian, Director for Research &amp; Innovation, EUA; UNI-SET Project Coordinator</li> <li>- Prof. Johan Driesen, KU Leuven; Education Director, KIC InnoEnergy; UNI-SET Project Leader</li> </ul> <b>Energy Research at Imperial College – The Energy Futures Lab</b> <ul style="list-style-type: none"> <li>- Prof. Tim Green, Director, Energy Futures Lab, Imperial College London</li> </ul>
15.00-15.30	<b>Coffee break</b>
15.30-16.30	<b>Plenary Session: Setting the Scene – Overviews from Universities' Perspectives</b> Chair: Prof. David Drewry, Vice-President, EUA  <b>Electric Vehicle and Battery Technology</b> <ul style="list-style-type: none"> <li>- Prof. Fokko M. Mulder, Delft University of Technology</li> </ul>

	<p><b>Sustainable, Renewable and Biological Fuels</b></p> <ul style="list-style-type: none"> <li>- <i>Dr Jeremy Woods, Senior Lecturer, Imperial College London</i></li> </ul> <p><b>Carbon Capture, Storage and Use</b></p> <ul style="list-style-type: none"> <li>- <i>Prof. Andrea Ramirez Ramirez, Delft University of Technology</i></li> </ul>
<p><b>16.30-18.00</b></p>	<p><b>Clustering Sessions</b> <b>Key Challenges in Research, Innovation and Education</b></p> <p><b>Session 1) Sustainable, renewable and biological fuels</b> Co-chairs: Dr Lidia Borrell-Damian, EUA &amp; Prof. Fabrice Lemoine, University of Lorraine</p> <ul style="list-style-type: none"> <li>- <i>Heathcliff Demaie, Hydrogen Energy Programme, University of Lorraine</i></li> <li>- <i>Berta Matas Güell, PhD, SINTEF Energy; EERA JP Bioenergy</i></li> <li>- <i>Prof. Gheorghe Lazaroiu, University Politehnica of Bucharest</i></li> <li>- <i>Jane Patterson, Ricardo UK (tbc)</i></li> </ul> <p>Rapporteur: Assoc. Prof. Andrzej Adamski, Jagiellonian University</p> <p><b>Session 2) Electric vehicle and battery technology</b> Co-chairs: Prof. Paulien Herder, Delft University of Technology &amp; Prof. Johan Driesen, KU Leuven; EIT InnoEnergy</p> <ul style="list-style-type: none"> <li>- <i>Prof. Mario Hirz, Deputy Head, Institute of Automotive Engineering, Graz University of Technology; European Sustainable Energy Innovation Alliance (eseia)</i></li> <li>- <i>Mark Poulton, Principal Technical Specialist - Vehicle Technology Environment &amp; Walking, Strategy &amp; Planning, TfL Surface Transport</i></li> <li>- <i>Jens Schippl, Institut für Technikfolgenabschätzung und Systemanalyse (ITAS), Karlsruhe Institute of Technology</i></li> <li>- <i>Prof. Goran Strbac, Imperial College London</i></li> </ul> <p>Rapporteur: Borana Taraj, Policy &amp; Project Officer, EUA</p> <p><b>Session 3) Carbon capturing, storage and use</b> Co-chairs: Prof. Torbjørn Digernes, Norwegian University of Science and Technology (NTNU) &amp; Prof. Tim Green, Imperial College London</p> <ul style="list-style-type: none"> <li>- <i>Prof. Paul Fennell, Imperial College London</i></li> <li>- <i>Zoe Kapetaki, PhD, Scientific Officer, Dir C - Energy, Transport and Climate, Knowledge for the Energy Union, Joint Research Centre, European Commission</i></li> <li>- <i>Prof. Wojciech Nowak, Director, Center of Energy, AGH University of Science and Technology</i></li> <li>- <i>Sverre Quale, NTNU; Project Director, European Carbon Dioxide Capture and Storage Laboratory Infrastructure (ECCSEL)</i></li> </ul> <p>Rapporteur: Lennart Stoy, Project Manager, EUA</p>
<p><b>19.00-22.00</b></p>	<p><b>Dinner</b> <i>Crowne Plaza London-Kensington, 100 Cromwell Rd, London SW7 4ER</i></p> <p><b>Speech by Jim Watson, Research Director of the UK Energy Research Centre (UKERC) and Professor of Energy Policy at the University of Sussex</b></p>

**Tuesday 28 March**

<b>9.00-9.15</b>	<b>Plenary Session - Reporting of Day 1</b>
<b>9.15-10.45</b>	<p><b>Parallel sessions</b></p> <p><b>Good Practices in Research, Innovation and Education</b></p> <p><b>Session 1) Sustainable, renewable and biological fuels</b> Chair: Prof. Fabrice Lemoine, University of Lorraine</p> <ul style="list-style-type: none"> <li>- <i>“Grid-integrated sustainable and efficient production of drop-in biofuels through hydrothermal liquefaction”</i>—Prof. Lasse Rosendahl, Aalborg University</li> <li>- <i>“Adapting the curricula of Energy Technologies course with knowledge generated by research activity”</i> —Dr Maria Paraschiv, University Politehnica of Bucharest</li> <li>- <i>“Bio refinery for bioenergy and bioplastics use in automotive industry”</i> —Prof. Carla Alexandra Monteiro da Silva, University of Lisbon</li> </ul> <p>Rapporteur: Prof. Josep Bordonau, UPC BarcelonaTech (TBC)</p> <p><b>Session 2) Electric vehicle and battery technology</b> Chair: Prof. Johan Driesen, KU Leuven; EIT InnoEnergy</p> <ul style="list-style-type: none"> <li>- <i>“Electrification of Transport and Carbon Capture: bandage on a wound or best solution?”</i> —Dr Wim J.C. Melis, Greenwich University</li> <li>- <i>“Future visions for electric vehicle deployment in Denmark: stakeholder based scenario development”</i> —Dr Jay Sterling Gregg, Technical University of Denmark</li> <li>- <i>“Development of a diagnostic tool for battery state-of-health estimation for electric vehicles”</i> —Prof. Erik Schaltz, Aalborg University</li> </ul> <p>Rapporteur: Prof. Marc Hiller, Karlsruhe Institute of Technology (KIT)</p> <p><b>Session 3) Carbon capturing and utilisation technology</b> Chair: Dr Karol Sztékler, AGH University of Science and Technology</p> <ul style="list-style-type: none"> <li>- <i>“Importance of experimental unit for Fluidised Circulating Coal Combustion (FCCC) in the process of capturing CO2 from combustion gas streams”</i> —Dr Mihaela Norisor, Assistant, University Politehnica of Bucharest</li> <li>- <i>“Cryogenic Carbon Capture and Use”</i> —Prof. Søren Knudsen Kær, Aalborg University</li> <li>- <i>“Club CO2: the link between the world of research and industry”</i> —Ms Valérie Czop, EDF</li> <li>- <i>“Beyond zero: A techno-economic feasibility study of BECCS in combined heat and power”</i> —Dr Linus Linde, Energy consultant, 2050 Consulting</li> </ul> <p>Rapporteur: Dr Douglas Halliday, Durham University</p> <p><b>Session 4) Collaboration and Partnerships for Research and Education</b> Chair: Dr John Smith, Senior Advisor, European University Association</p> <ul style="list-style-type: none"> <li>- <i>“Negative Emissions Technologies: Multi-disiplinary, multi-institutional research collaboration”</i> —Prof. Barry McMullin, Dublin City University</li> <li>- <i>“Smart Energy Network Demonstrator (SEND) - European first Multi-Energy Vector Living Lab Demonstrator”</i> —Prof. Peter Andras, Keele University</li> </ul>

	<p>- <i>“Key Knowledge Deliverables after 8 years of investigation into fundamental carbon dioxide behaviour in carbonate reservoirs”</i> —Iain A Macdonald, QCCSRC Senior Programme Manager, Imperial College London</p> <p>Rapporteur: Prof. Mihaela Albu, University Politehnica of Bucharest</p>
<p>10.45-11.15</p>	<p><b>Coffee break</b></p>
<p>11.15-11.45</p>	<p><b>Keynote</b> <i>“The energy transformation beyond technology: challenges to interdisciplinary university education”</i> —Prof. Armin Grunwald, Karlsruhe Institute of Technology; Head of the Office of Technology Assessment at the German Bundestag (TAB)</p>
<p>11.45-13.00</p>	<p><b>Outlook Sessions</b></p> <p><b>Session 1) Planning and behavioural dimensions for sustainable transport</b></p> <p>This session aims at creating a forward-looking discussion on the socio-technical dimension of sustainable transport. Question to be discussed are for example: How can social and behavioural science support the transition towards more sustainable transport? What is the role for science-based planning? How are universities contributing to it?</p> <p>Co-chairs: Prof. Peter Lund, Aalto University &amp; Prof. Gabriel Sala Pano, Technical University of Madrid</p> <ul style="list-style-type: none"> <li>– Ivo Cré, Deputy Director, Polis Network</li> <li>– Prof. John Polak, Head of the Centre for Transport Studies, Imperial College London</li> <li>– Andrea Ricci, Vice President, ISINNOVA</li> </ul> <p>Rapporteur: Dr John Smith, Senior Advisor, EUA (tbc)</p> <p><b>Session 2) Demonstration of CCS/CCU projects</b></p> <p>This session seeks to stimulate a discussion on the future of Carbon Capturing Technology and the use of CO<sub>2</sub>. What is the outlook to develop industrial-scale demonstration projects? How can CCS/CCU projects be financed? And how economically viable will they be? Is there a role to play for universities to guide the development of such projects and in training future professionals for the sector? How promising is carbon storage and use technology to reduce greenhouse gas emission levels?</p> <p>Co-chairs: Prof. Sigurdur Gardarsson, University of Iceland &amp; Prof. Peter H. Madsen, Technical University of Denmark (DTU)</p> <ul style="list-style-type: none"> <li>– Prof. Jon Gibbins, University of Sheffield; Director, UK CCS Research Centre</li> <li>– Prof. Sabina Bigi, Sapienza University - ENOS Project</li> <li>– Prof. Jan Martin Nordbotten, University of Bergen</li> <li>– Prof. Marek Ściqżko, AGH University of Science and Technology</li> </ul> <p>Rapporteur: Borana Taraj, Policy &amp; Project Officer, EUA</p> <p><b>Session 3) Multidisciplinary education for a low-carbon society</b></p> <p>The energy transition is a challenge requiring collaboration and insights from the perspectives of different scientific disciplines. This session will explore trends and the</p>

	<p>future of multidisciplinary and interdisciplinary education for professionals in the energy sector or those in positions which require sound understanding of the socio-technical aspects of the energy system.</p> <p>Co-chairs: Prof. Mihaela Albu, Politehnica University of Bucharest &amp; Prof. Torsten Fransson, Royal Institute of Technology (KTH)</p> <ul style="list-style-type: none"> <li>– <i>Dr Douglas Halliday, Director, Centre for Doctoral Training in Energy (CDT), Durham University</i></li> <li>– <i>Prof. Paulien Herder, Delft University of Technology</i></li> <li>– <i>Dr Karol Sztékler, AGH University of Science and Technology; EIT InnoEnergy (tbc)</i></li> <li>– <i>Prof. Asgeir Tomasgard, Director, Centre for Sustainable Energy Studies (CenSES), NTNU</i></li> </ul> <p>Rapporteur: tba</p>
<b>13.00-14.00</b>	<b>Lunch</b>
<b>14.00-15.00</b>	<p><b>Panel discussion</b> <b><i>Energy, Science and Citizens: How to communicate?</i></b></p> <p>Chair: Prof. David Drewry, Vice-President, European University Association (EUA)</p> <ul style="list-style-type: none"> <li>– <i>Prof. Nick Jennings, Vice-Provost (Research), Imperial College London</i></li> <li>– <i>Prof. Peter Lund, Aalto University</i></li> <li>– <i>Prof. Averil Macdonald, Emeritus Professor of Science Engagement, University of Reading; UK Onshore Oil &amp; Gas</i></li> <li>– <i>Dr Charlotte Thorley, Science Business</i></li> <li>– <i>Prof. Asgeir Tomasgard, Director, Centre for Sustainable Energy Studies (CenSES), NTNU; EERA JP e3s</i></li> </ul>
<b>15.00-15.30</b>	<p><b>Plenary</b> <b><i>Summary of Day 2 Sessions</i></b></p>
<b>15.30-15.45</b>	<p><b>Closing ceremony</b></p> <ul style="list-style-type: none"> <li>- <i>Prof. Tim Green, Director, Energy Futures Lab, Imperial College London</i></li> <li>- <i>Prof. Johan Driesen, KU Leuven; Education Director, KIC InnoEnergy; UNI-SET Project Leader</i></li> </ul>
<b>16.00-17.00</b>	<p><b>Guided Tour</b> Qatar Carbonate and Carbon Storage Research Centre (QCCSRC) (optional, prior registration required)</p>