

# Introduction & Workshop Objectives

Mark O'Malley

---

ICT Enabling Thermal Energy Flexibility in Integrated Energy Systems, Daejeon, Korea 21<sup>st</sup> – 22<sup>nd</sup> October 2015

# International Context

## Strategic Energy Technology (SET) Plan

Towards an Integrated Roadmap:  
Research & Innovation Challenges and Needs  
of the EU Energy System



[https://setis.ec.europa.eu/system/files/Towards%20an%20Integrated%20Roadmap\\_0.pdf](https://setis.ec.europa.eu/system/files/Towards%20an%20Integrated%20Roadmap_0.pdf)



<http://www.nrel.gov/esi/esif.html>

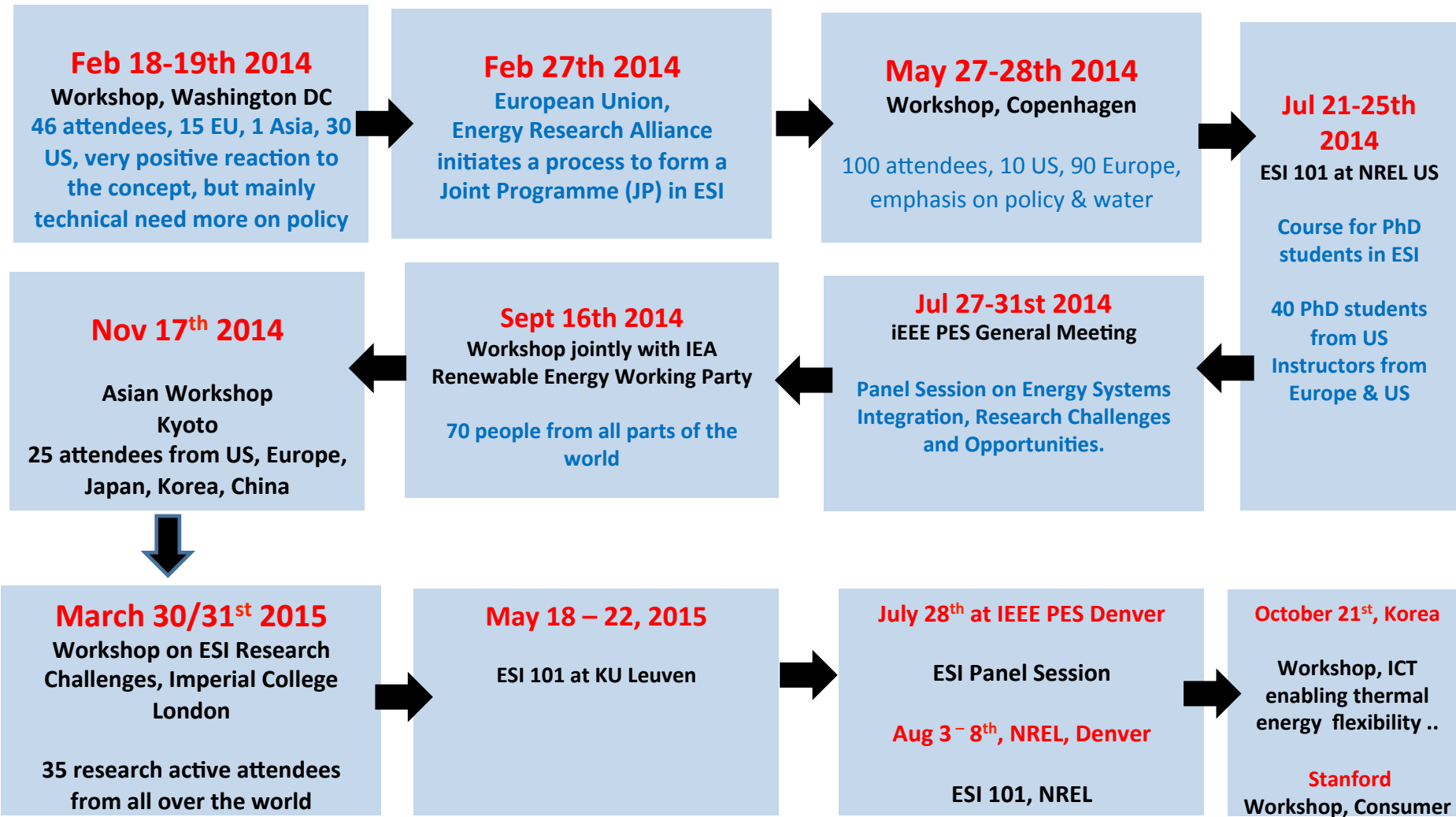


<https://es.catapult.org.uk/>



Solving complex global energy challenges requires changing the way we THINK about energy systems, providing opportunities to SHARE knowledge, and helping nations EVOLVE by informing the discussions that are guiding energy investments and policy decisions.

# Evolution of Activities iiESI 2014/15



# ICT Enabling Thermal Energy Flexibility in Integrated Energy Systems

## Tuesday 21<sup>st</sup> October

8.30 – 9.00	Registration
9.00 – 9.10	Welcome from Dr. Lee Ki-woo, President of KIER
<b>Session 1:</b>	<b>Overview</b>
9.10 – 9.20	Introduction and workshop objectives – Mark O'Malley, UCD
9.20 – 9.50	Energy System Integration: An Introduction, Ben Kroposki, NREL, USA.
9.50 – 10.20	Overview of Energy System Integration in Korea, Park Sang Doug, MOTIE (Office of Strategic R&D Planning, Korea)
10.20 – 10.40	Open discussion on ESI
10.40 – 11.10	Break for Coffee/Tea
<b>Session 2:</b>	<b>ICT and Thermal Grids</b>
11.10 – 11.40	The role of ICT based methods in enabling thermal energy systems flexibility in Denmark, Henrik Madsen, DTU, Denmark
11.40 – 12.10	Current Research Activities on Thermal Grid in KIER, Baik Young-Jin , KIER
12.10 – 12.30	Discussion
12.30 – 14.00	Lunch
<b>Session 3:</b>	<b>Thermal Grids and integration of Renewables</b>
14.00 – 14.30	Cogeneration, thermal storage & thermal networks, and the interaction with the electric and gas grids. William D'haeseleer, KU Leuven, Belgium
14.30 – 15.00	Smart Steam Network in the Industrial Sector, Park Hung Suck, University of Ulsan, Korea
15.00 – 15.30	Break for Coffee/Tea
15.30 – 16.00	Future domestic heating systems and their potential role in integrating variable renewable energy, Steve Heinen, UCD, Ireland.

## Wednesday 22<sup>nd</sup> October

<b>Session 4:</b>	<b>Smart Cities, Districts and Buildings</b>
9.00 – 9.30	Demand Shifting Analysis of the TwinHouse, Peter Woo, Samsung
9.30 – 10.00	District Heating and Cooling Activities in Korea, Lee Jong Jun, Korea District Heating Corporation
10.00 – 10.30	Issue and direction of Energy Network Optimization in Petrochemical Industries, Kim Weonho, Infotro Technology Co., Ltd.
10.30 – 11.00	Break for Coffee/Tea
11.00 – 11.30	Posi-Watt Demand Response Utilizing Thermal Storage for Air-Conditioning Systems of Large Scale Buildings and Factories, Akira Yabe, NEDO Japan
11.30 – 12.00	Discussion
12.00 – 12.30	Workshop discussion and conclusion, including next steps and concrete actions, Bryan Hannegan, NREL.
12.30	Close
Following the iiESI workshop the CITIES project ( <a href="http://smart-cities-centre.org/">http://smart-cities-centre.org/</a> ) will host a project workshop. CITIES is the largest Danish Research Project aiming at establishing methods and models for ICT solutions for enabling large fractions of fluctuating renewables (like wind and solar power) in integrated energy systems. The 42 partners in CITIES are universities and companies from Denmark, US, Ireland, Austria, Spain, Australia, Germany and Korea. All our welcome, please contact <a href="mailto:henrik.madsen@smart-cities-centre.org">henrik.madsen@smart-cities-centre.org</a> if you would like to attend.	

# Objective

---

- Strengthen links of iiESI with Asia and Korea in particular
- Explore potential for collaboration
  - DOE collaborations: GMMLC
  - H2020
  - CITIES
  - ESIPP
  - etc.
- Highlight the role of ICT as a core enabling technology in ESI
- Identify key opportunities for integrating thermal and electrical systems

