

# CESI ESI Workshop

Thursday 27 September, 2018

10:00-16:00

Durham University, Calman Learning Centre, Kingsley Barratt Room



## What is Energy Systems Integration for?

In narratives about energy futures, it has been suggested that Energy Systems Integration (ESI) is a way to achieve energy efficiency targets and at lowest cost in the transition to a low carbon energy system. This idea is evident at national and international levels and among researchers, some energy industries, policy-makers and expert circles. However, there is currently very little understanding of how this increased integration leads to greater efficiency, and who benefits (or loses). This workshop will address these issues by asking what Energy Systems Integration is for, and drawing together key interdisciplinary research insights on system integration questions.

Research into ESI has been largely focused on the technical aspects of integration within the energy system. In so doing, we contend that it has sidestepped important questions, such as the potential rebound effects in energy efficiency leading to missed targets, or exploitation of consumers through imbalanced market powers. There is the potential too for higher systemic risks due to increased complexity and interdependencies in such an energy system. In order to achieve and maintain ESI therefore, a wider range of aspects demand attention: these range from equity and justice issues to economic principles and governance of ESI and user appropriation processes.

This workshop will explore these broader aspects, by taking a more holistic and interdisciplinary perspective on ESI. It will include a panel discussion drawing on high-level expertise.

The following issues have been identified for exploration at the workshop:

### Vertical and horizontal integration

The vertical integration of the supply chain within one energy carrier was seen as the most cost-efficient model of infrastructure provision for a number of decades: but what new forms of horizontal integration and efficiencies might be enabled by ESI?

### Trilemma as an energy policy evaluation tool

Is the application of the three dimensions of low costs, security of supply and sustainability (or low carbon) as an energy policy tool now out of date or does it need to be supplemented with other dimensions or criteria?

### Energy service efficiency and its distribution

To what extent can efficiency gains be realised in different types of energy system integration? What counter-effects (e.g. rebound) are possible, and how should the benefits or disbenefits be evaluated for different groups?

### Control

Governance structures and tensions between central control (architects?) and public deliberation.

### Integrated energy markets

Risks and benefits of integrated energy markets including discussion of EU and Brexit.

A position paper and detailed timetable, identifying guest speakers will be circulated before the workshop and the organisers aim to develop this into a working paper after the workshop.

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## Further information

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