Progressive Energy Governance

Welcome
Introduction to IGov Progressive Energy Governance conference

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Conference on Progressive Energy Governance
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Overview

• Introduction to IGov
• Introduction to the day
• My no. 1 governance change
Introduction to Innovation and Governance for a Sustainable and Secure Economy (IGov)

• 5 person, multi-disciplinary, multi-experienced team (Richard Hoggett, Caroline Kuzemko, Matthew Lockwood, Catherine Mitchell, Tom Steward)

• 4 years, 3 phases: October 2012-Sep 2016

Aim of IGov:

• To understand and explain the nature of sustainable change within the energy system, focusing on the complex inter-relationships between governance and innovation.
IGov Approach and Research Links

Phase 1 involved examining the literature on theories of change, and identifying a number of characteristics of innovation and governance

**Phase 1**
- WP 1: Literature Review & Methodological framework
  - 1.1 Literature review of Political and Institutional Economic Theory
  - 1.2 Literature Review of Models of Innovation (MPL and Coevolution)
- WP 2: Indicators of Innovation & Governance
  - 2.1 Developing innovation indicators based in WP1 outcomes
  - 2.2 Developing indicators for innovative governance based on WP1 outcomes

- Working Papers 1, 2, 3, 4, 5, 7, 8 and 10
- Journal Articles: 4 published, 2 under review, 1 to be submitted
- Event 1: Theorising Governance Change for a Sustainable Economy

Phase 2 is examining what is happening in practice in terms of demand side, heat and power, with a particular focus on affordability and distributional effects. We are looking at the UK first and then at the comparator countries

**Phase 2**
- WP 3: UK Rules and Incentives (pre & post privatisation, and current)
  - 3.1 Mapping rules and incentives for demand side & affordability
  - 3.2 Mapping rules and incentives for gas
  - 3.3 Mapping rules and incentives for electricity, including Evs
- WP 4: International rules and incentives (demand, affordability, gas, elec)
  - 4.1 Mapping rules and incentives for California & Texas
  - 4.1 Mapping rules and incentives for Denmark
  - 4.1 Mapping rules and incentives for Germany
- WP 5: Power and agency: incumbents & new entrants
  - 5.1 Power and agency from a UK perspective
  - 5.2 Power and agency from a US perspective
  - 5.3 Power and agency from a Continental EU perspective

- Working Papers 6 and 9, more to follow
- Journal Articles : 2 under review, more to follow
- Event 2: Progressive Energy Governance conference 21st May

Phase 3 will bring together theory and practice to provide new thinking and policy recommendations for innovation and governance for a sustainable, secure and affordable energy system.
Website: www.exeter.ac.uk/igov

- Weekly updates
- Every output
- All outputs tweeted via @exeterepg
Introduction to the day

• 9.45 -10.45 - IGov Phase 2 preliminary findings
• 11.00 -12.00 - Keynote Speakers
• 1.00 - 2.20 - Session 1 and 2 of the Energy Den
• 2.35 - 3.45 - Session 3 and 4 of the Energy Den
• 3.45 - 4.45 - Panel

• We will take breaks
• We will be very strict about the Energy Den timing – no-one is to be offended if we hustle them off
• Be pretty tough when voting ie only vote for an idea if you really want it / think it will work/ necessary
Housekeeping

• We are not expecting a fire test so if the alarm goes off: it is the real thing

• We would like to thank the Germany Embassy for kindly supporting the participation of Prof Schreurs at this event.
  – Miranda has a packed day with parliamentarians so those who wish to ask questions of her or introduce themselves should do so promptly when the Key Note session ends

• We would also like to thank SSE, and Keith Maclean in particular, for helping to fund this event
My central governance change

- Government has GHG emission reduction – nationally and internationally – and transition to a sustainable economy as a central dimension of their vision / political paradigm.

- That Government adopt the principle, and cascade down through its levels, that in matters of climate change, the environmental imperative takes precedent over short term economic decisions; and that all government decisions, at all levels, are obliged to implement policies which fit the IPCC RCP2.6 (discussed later) and to not implement policies which will increase GHG emissions against an agreed budget.
  - that the affordability of this for vulnerable groups is a priority.
  - that new ways of paying for this through bonds etc is explored.
Reasons for this:

• IPCC WG3 shows that emission reduction costs are a very small fraction of GDP increase to 2100, even without including co-benefits and ‘unknown’ benefits or costs;
  – Costs increase as action is delayed, so early action is the mid to longer term ‘economic’ decision
• First suggested in the PIU Energy Review in 2002
• CC emission reduction should be as cost effective as possible provided emissions reduce
  – Should encourage the efficient use of energy
• This effectively re-balances the importance of (largely) theoretical economic analyses with the technology and innovation discipline evidence of practice change and practical political economy insights
Emissions accelerate globally despite reduction efforts. Most emission growth is CO$_2$ from fossil fuel combustion (IPCC WG3).

Figure SPM.1

Total Annual Anthropogenic GHG Emissions by Groups of Gases 1970-2010

- Gas
  - F-Gases
  - N$_2$O
  - CH$_4$
  - CO$_2$ FOLU
  - CO$_2$ Fossil Fuel and Industrial Processes

- Emissions: 27 Gt in 1970, 49 Gt in 2010
- Growth rates: +1.3%/yr 1970-2000, +2.2%/yr 2000-2010
- Contributions: CO$_2$ Fossil Fuel and Industrial Processes (65%), CO$_2$ FOLU (16%), CH$_4$ (13%), N$_2$O (11%), F-Gases (17%)
Global surface temperature change for the end of the 21st century is *likely* to exceed 1.5°C relative to 1850–1900 for all scenarios except RCP2.6.
Taken from IPCC AR5 WG1 SPM
Budget for 2°C target: 790 bill t C

CO₂ emissions until 2013: −535 bill t C

Remaining emissions: 255 bill t C

CO₂ emissions in 2013: 9.9 bill t C

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.
The UK 2050 target and carbon budgets (CCC, 2010)

**Carbon budgets:** The cost-effective path to the 2050 target

The 2050 target: UK’s contribution to 2°C – 160 MtCO2e
John Barrett - Revisit UK Carbon Budgets for RCP 2.6

Figure 1: UK Emissions 2012 – 2100 to achieve equitable 2 degree benchmark with 67% probability

95% reduction by 2050

Figure 2: Comparison of 2 degree equitable reduction with CCC budgets

80% reduction by 2032

Source: Own Calculations
Climate is a short-term issue under RCP 2.6

**Figure 1:** UK Consumption Emissions with 3.2% per year efficiency improvements

**Figure 2:** UK Consumption Emissions with necessary annual reduction achieved to 2027