Challenges and opportunities in our local energy system

Show the Love for Cornwall, 15 Feb 2019

Iain Soutar
Energy Policy Group, University of Exeter
Some (international) context

- IPCC’s pathways compatible with keeping under 1.5°C limit
- Emissions need to decline rapidly across all of society’s main sectors, including buildings, industry, transport, energy, and agriculture, forestry and other land use (AFOLU)
- For energy in particular this means
  - Increased electricity share in final energy demand
  - Reduced carbon intensity of that electricity
  - Rapid transition in first half of century and slower transition thereafter
• The planned global contributions (NDCs: Nationally Determined Contributions) to emissions reduction are only about a third of what is needed to be on a least-cost pathway to keep us below 2°C
The (UK) context

• Much of the low hanging fruit (decarbonising power) has already been picked

• Much more attention needed on transport and heat

• Policy focus on competitive innovation to drive changes across sectors
Cornwall: Local challenges and opportunities?

- Superb low carbon resources
  - 4th out of 56 Local Authority areas in terms of RE generation
  - 72% from solar; 17% from wind

- Grid constraints in Cornwall mean that continued growth of low carbon sources of energy is challenging

- Housing stock means decarbonising heat will be challenging, although lots of potential to improve off-gas grid properties

- Lots of innovation going on around overcoming these constraints, although at present this is somewhat disconnected
Key principles moving forward...

• We need to act swiftly
• There need to look after those at risk of losing out from move to low carbon economy
• Energy system challenges are collaborative challenges
• Political leadership will be key
• But, bottom-up action is increasingly important
Email:  

i.soutar@exeter.ac.uk

Twitter:  

@isoutar
@exeterepg
@exeterenergy
ExeterEnergy

- Formally launched in Sept 2018
- 140 researchers across nine themes
- Collectively focused on making sense of and facilitating transformation and resilience in energy systems
- Cornwall and Exeter campuses
- Research across all colleges & disciplines
- Not just research, but also education and ‘impact’
Today’s energy challenges are ‘whole system’ challenges

• Moving away from the energy ‘trilemma’
  – Cheap power is now green power

• Moving from the generic to the specific
  – Towards diverse solutions that fit local contexts

• Moving beyond power
  – Towards decarbonisation of heat and transport
  – From deployment to integration of multiple technologies

• Transformation in the energy system is fundamentally a societal challenge
  – New forms of leadership, governance, business models & behaviours