Renewables in Scotland: Assessing Challenges and Opportunities

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Scotland Policy Conferences Keynote Seminar:

Next steps for renewable energy in Scotland - funding, development and policy priorities - Thursday 26th May 2016

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Introduction to CEP

The aim of CEP: to challenge and impact energy policy in Scotland and elsewhere, through research, knowledge exchange and education that informs and enhances the quality of policy analysis and decision making

IPPI policy papers: http://www.strath.ac.uk/ippi/ourpolicypapers/

'Security of supply: Scotland's energy needs in a changing UK electricity market' by Karen Turner, Peter McGregor and Alf Young

(Edited version of CEP submission to the Scottish Parliament's Economy, Energy and Tourism Committee on the security of Scotland's energy supply)

CEP web-site: https://www.strath.ac.uk/ippi/aboutus/centreforenergypolicy/

EPSRC energy efficiency: http://cied.ac.uk/research/impacts/energysavinginnovations

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The big 'headline' concerns for renewables in Scotland?

Focus mainly on electricity supply

- Further development of our renewables capacity/ambitions?
- Impact of changes in UK govt. policy
- Lack of clarity over support for onshore wind and solar
- Policy support via CfD wavering in different areas – e.g. remote islands

Brexit likely to confound all these issues

Ongoing debate over intermittency and base load issues

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The wider 'headline' concerns for Scottish energy?

- Loss of thermal capacity in electricity supply
  - Closure of Longannet,
  - Impact of CCS commercialisation decision on Peterhead?
  - Non-replacement of nuclear stations

Wider energy industry

- Oil price drop
- Potential for on-shore gas extraction activity/industry
- Particular role of energy as an industry in Scotland

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The importance of context

- Security of (electricity) supply – Scottish Government fully committed to single GB market
  - Scotland may become 'net importer' of electricity generated with a range of technologies (including new nuclear capacity)

- Current and future devolved powers
  - Core energy policy is reserved but other key powers devolved (including impacts already felt – moratorium – of plan to devolve licensing for on-shore extraction)

- Narrow focus of last year's security of supply consultation
  - Broader discussion required, and one that takes a longer term view, e.g. on electrification of heat and transport
  - And role of CCS where continued need for thermal generation…and to deal with industrial emissions

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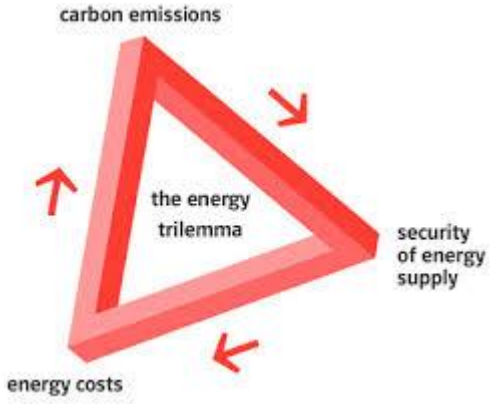
The importance of reducing energy demand

- Need to smooth peak electricity demand – use of 'smart' meters and appliances
- Issue of countervailing growing (and varying peak load) demand on electricity supply if and when more space heating and transport migrates from hydrocarbon system
- **General importance of increased efficiency in energy use…..**
- …and anticipating impacts (e.g. rebound effects linked to economic expansion)
- Impacting all dimensions of the energy 'trilemma'…
- …and adding a fourth – sustainable economic development
- Challenge for renewables? Security of supply and costs?



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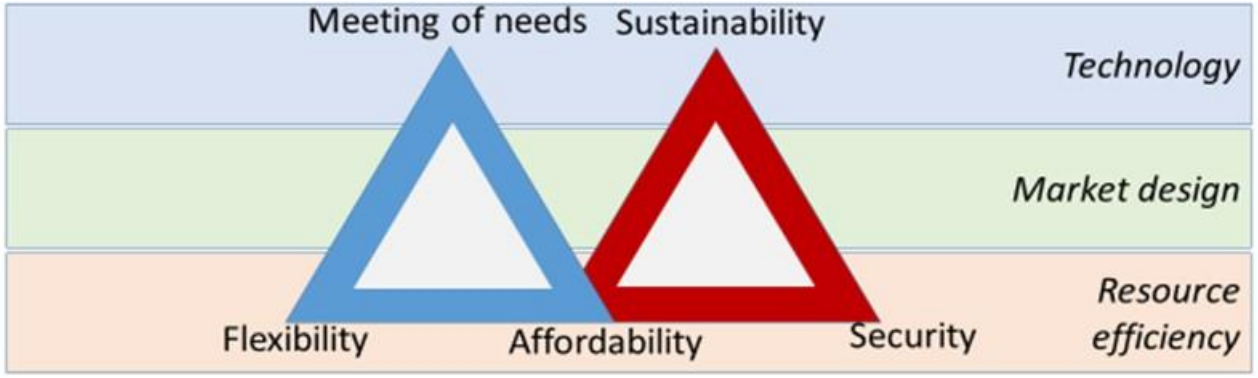
CEP and the energy demand trilemma

Demand-side trilemma and interaction with supply focussed one

Motivated by need to focus policy attention on demand-side

Download brief at https://www.strath.ac.uk/media/cross-functional/ippi/centreforenergypolicy/Demand_side_trilemma_brief.pdf



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An opportunity?

- Delivering more flexibility and control to consumers?
- Role of renewables in micro- and local energy systems
- Decentralisation (and ‘democratisation’?) of heating and lighting services

- But one key role uncontroversial – decarbonisation

- Delivering this, particularly coupled with issue of energy costs to consumers, would seem to present some of the key challenges

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Challenges/priorities

- Need to deliver long term carbon pricing that makes renewable energy economic in low or no subsidy environment
  - Outside of direct Scottish Government control
- Series of policy changes to make renewable energy as competitive as possible
- For example
  - Lower transmission charging
  - And/or – transmission charging that reflects economic saving of reduced carbon – link back to first point!
  - Planning to facilitate re-powering
  - Co-location of wind and solar

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Challenges/priorities

- Support for innovation in storage, smart grid, demand management, new technologies, e.g. floating wind, tidal energy
- Efficient delivery/making these competitive means of delivering heating/lighting services
  - Dematerialisation agenda - low carbon rather than limited growth
  - Our current EPSRC ‘rebound’ project – making public options more competitive relative to private ones in delivering transport services
  - But role of renewables in transport as well as heating and lighting
  - New EPSRC project: economic impacts of H2FC activity
  - Key focus of our work – need to consider wider economic and fiscal implications of any energy system solutions

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Challenges/priorities

- Revisiting a key question – common to CCS – can Scotland play the role of a leader in developing and exporting technologies and expertise?
- Energy and energy technology as key industry (group of industries) in Scotland
- We have undelivered so far in exploiting opportunities in this respect?

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Thank you for listening!

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