Beyond climate change mitigation: the role of low carbon initiatives in growing jobs and the economy

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All-Energy 2019 Opening Plenary Session

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Professor Karen Turner
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There are and will continue to be technology and cost challenges in delivering low/zero carbon transition by 2050

But what value may we realise in return?

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We need to shift attention to consider how investment in the transition may unlock, sustain, and potentially increase value generation in different parts of the economy

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Energy Efficient Scotland

EVERY £100 MILLION SPENT ON ENERGY EFFICIENCY IMPROVEMENTS IN 2018 IS ESTIMATED TO SUPPORT APPROXIMATELY 1,200 FULL TIME EQUIVALENT JOBS ACROSS THE SCOTTISH ECONOMY

BOOST GDP, WITH RESEARCH SHOWING A 10% IMPROVEMENT IN THE ENERGY EFFICIENCY OF ALL UK HOUSEHOLDS WILL SUSTAIN GDP EXPANSION OF AROUND 0.16%

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Policy Brief
May 2018

Potential wider economic impacts of Scotland's Energy Efficiency Programme (SEEP)

Karen Turner, Antonios Katris, Gioele Figus and Ragne Low,
Centre for Energy Policy, University of Strathclyde

Scenario: £8bn spending on improving residential energy efficiency over 20 years

Cumulative GDP impact: £7.8bn in real GDP over the next 30 years

Sustained rate of GDP expansion: 0.2% additional GDP over the long term

Real public spending multiplier: £5 GDP boost per £1 of public funds spent

Jobs: 6,000 sustained jobs could be created

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Energy makes its move

Douglas Fraser
Business/economy editor, Scotland

27 March 2019 | Share

- Oil companies are switching on to renewable technology, to reduce their carbon footprints and be ready for a more electric future.
- Hopes for a carbon capture and storage industry in Britain have been revived. A new report suggests it could sustain 44,000 jobs in Scotland.
- North Sea collaboration is being encouraged between offshore wind and offshore oil, with far-reaching possibilities for generating power from gas out at sea, and creating a new hydrogen industry.

Crown Estate Scotland
Oighreachd a' Chrùin Alba

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Policy Briefing

Reframing the Value Case for Carbon Capture and Storage

Karen Turner, Oluwafisayo Alabi, Ragne Low and Julia Race

- **Hopes for a carbon capture and storage industry in Britain have been revived. A new report suggests it could sustain 44,000 jobs in Scotland.**

Thus, the Strathclyde Centre for Energy Policy observes that CCUS would allow the UK offshore oil and gas sector to keep pumping from its subsea wells, while offsetting its climate harm by pumping processed carbon gunge into the emptied rock formations.

If it does so, this study is talking about 26,000 directly linked jobs in the on-shore support industry and another 18,000 supply jobs downstream.

So although CCUS has been one of the most expensive ways of cutting carbon emissions (using less energy in better insulated buildings is the cheapest way), it offers one of the highest returns per pound invested in terms of jobs created or sustained.

Scottish Enterprise

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ENERGY POLICY

The economic opportunity for a large scale CO_2 management industry in Scotland

Karen Turner, Julia Race and Graeme Sweeney, Centre for Energy Policy, University of Strathclyde

Table 2. Jobs associated with a 40% share of the European market for CO_2 storage under different scenarios for 2030 and 2050[29,30]

	Potential direct employment in CO2 storage (40% market share)		Total direct and indirect UK supply chain jobs	
	2030	**2050**	**2030**	**2050**
Low CCS	757	2,204	7,638	22,239
Moderate CCS	1,724	3,589	17,396	36,214
High CCS	4,530	10,358	45,709	104,516

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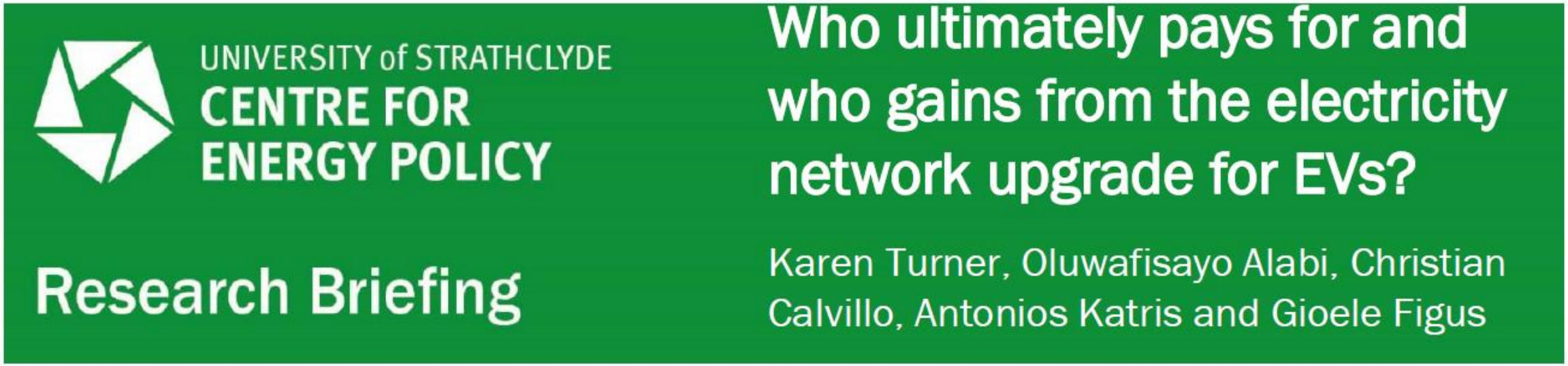

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National Centre for Energy Systems Integration

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Scenario

- £2.7billion electricity network investment for projected 20% EV roll-out up to 2030 across the UK
- Linking to National Grid FES scenarios, energy system TIMES modelling with partly smart/partly centralised charging system

Investment activity can stimulate the economy?

- Capacity constraints in the UK economy
- Large share of investment spending involves importing required equipment
- Costs need to be recovered via energy bills

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Outcome?

- Value *is* unlocked and sustained benefits *are* realised
- Almost 3,000 sustained jobs across range of UK sectors
- From 2030, GDP on a trajectory around 0.1% higher than it would otherwise be
- UK households *do* pay but those in lowest 20% income group not more than £1 per year worse off
- Not more than £6 in 20% of UK households with highest incomes
- WHAT IS THE SOURCE OF VALUE UNLOCKED?

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Framing policy on low emissions vehicles in terms of economic gains: Might the most straightforward gain be delivered by supply chain activity to support refuelling?

Karen Turner[a,*], Oluwafisayo Alabi[a], Martin Smith[b], John Irvine[b], Paul E. Dodds[c]

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[c] Bartlett School of Environment, Energy & Resources, Faculty of the Built Environment, University College London, Gower Street, London WC1E 6BT, UK

- UK supply of petrol and diesel is highly import-intensive
- Weak economic 'multipliers' relative to other UK industries
- UK electricity (and gas) have much stronger domestic multipliers: 3 times as many jobs per £ of spending
- A high share of the economic value (jobs and GDP) associated with electricity is embedded in UK service sectors.

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Conclusions?

Policy makers, industry and the research community need to investigate and collaborate on how the transition can be designed to capitalise on the potential for value generation across Scotland and the wider UK

With focus on how to sustain existing and create new jobs and opportunities for Scottish and UK workers, while protecting the most vulnerable citizens, particularly in terms of 'who pays' – the Just Transition

Crucial: Timing of action and ensuring that Scottish and UK industry have the capacity and ability to respond

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