

Impact case study (REF3)

Institution: University of Exeter		
Unit of Assessment: UoA 14 Geography and Environmental Studies		
Title of case study: Accelerating decarbonisation of the GB Whole Energy System through governance reform.		
Period when the underpinning research was undertaken: 2012 - 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g., job title):	Period(s) employed by submitting HEI:
Catherine Mitchell	Professor of Energy Policy	2008 – present
Richard Hoggett	Research Manager	2009 – 2019
Matthew Lockwood	Senior Research Fellow	2012 – 2018
Richard Lowes	Research Fellow	2015 – present
Jess Britton	Research Fellow	2016 – present
Period when the claimed impact occurred: 2013-2020		
Is this case study continued from a case study submitted in 2014? Y		
<p>1. Summary of the impact</p> <p>Energy use in the UK is responsible for 85% of greenhouse gas emissions (2018). With a legal target for net zero carbon by 2050, the UK whole energy system requires rapid decarbonisation. Research by the Energy Policy Group has been translated into adopted recommendations by energy policymakers tasked with this transformation. This policy work primarily addresses energy governance in Great Britain (GB), with Northern Ireland having separate market arrangements.</p> <p>The University of Exeter’s Energy Policy Unit has:</p> <ul style="list-style-type: none"> • Influenced the Competition and Markets Authority (CMA) to identify how current governance arrangements are damaging the energy market. • Supported the CMA, Department for Business, Energy and Industrial Strategy (BEIS) and regulator Ofgem to change the system of industry codes increasing opportunities for green energy innovators. • Recommended a revised governance framework for the regulation of the GB whole energy system, prompting BEIS and the National Infrastructure Commission (NIC) to use this as a basis for evaluating future institutional change. • Inspired the creation of a “fourth principle” for energy policy: the agility principle, introduced by the BEIS Secretary of State in 2018. <p>The adopted recommendations from the Energy Policy Unit improves resilience in the broader UK energy sector, opens market competition, and better enables the meeting of the 2050 net zero by increasing opportunities for innovators to play a more significant role.</p>		
<p>2. Underpinning research</p> <p>The energy system is made up of three key elements: electricity, heating, and transport. Together, these make up the ‘whole energy system’. The Energy Policy Group (EPG) is the only academic research group in the UK focusing on the necessary institutional governance change associated with the transformation of this system to a net zero carbon one (since 2019 Government policy) – which implicitly requires a move from the current siloed arrangements of the three elements to a much more integrated operation [3.1].</p> <p>The EPG has focused on the issue of governance for many years. The Innovation and Governance for Future Energy Systems (IGov) research project (2012-2019) has produced a significant body of work associated with UK energy system governance and change [3.2]. It firstly explored the role of governance in processes of energy system transformation and secondly opened and guided a serious dialogue with policymakers and Ofgem about how GB governance needs to change if policy goals for a net zero energy system are to be realised.</p>		

Parallel IGov analysis has shown how BEIS and Ofgem decision-making produced outcomes at odds with stated government objectives. For example, research shows how the ‘capacity market’ (a linked electricity market and network operation mechanism which contracts electricity generators to be ready to vary production to maintain system stability) deters, and in some cases has blocked, new entrants and innovative technologies and system operation techniques while improving the economics of diesel generators – the exact opposite of what the mechanism was intended to achieve [3.3].

EPG research has addressed unhelpful governance relating to the commercial and technical rules, termed ‘codes’, that underpin the energy system. Energy system codes are detailed multilateral agreements that define the terms under which participants can access networks and operate in markets [3.4]. Research has highlighted how the current self-regulating code system enables incumbents to slow down change to suit themselves, undermining efforts to decarbonise the GB energy system [3.4]. Addressing the governance of ‘codes’ is identified as an essential step towards energy market reform.

Other research has investigated the particularly limited focus on heat decarbonisation policies, issues of industrial opposition to change, and the failed Renewable Heat Incentive [3.5]. Drawing on the lessons of this research, the EPG developed a revised governance framework [3.6] which it argued was fit for purpose for delivering net zero, and which BEIS, Ofgem, NIC (and other stakeholders) could use as a ‘straw’ proposal from which to evaluate energy system change proposals.

3. References to the research

- 3.1 Mitchell C (2016). Momentum is increasing towards a flexible electricity system based on renewables. *Nature Energy*, 1(2): 15030 <https://doi.org/10.1038/nenergy.2015.30>
- 3.2 Lockwood M, Kuzemko C, Mitchell C, Hoggett R (2017). Historical institutionalism and the politics of sustainable energy transitions: a research agenda. *Environment and Planning C: Politics and Space*, 35(2): 312-333 <https://doi.org/10.1177/0263774X16660561>
- 3.3 Lockwood M, Mitchell C, Hoggett R (2019). Unpacking ‘regime resistance’ in low-carbon transitions: The case of the British Capacity Market. *Energy Research and Social Science*, 58: 101278. <https://doi.org/10.1016/j.erss.2019.101278>
- 3.4 Lockwood, M, Mitchell C, Hoggett R, Kuzemko C (2017). The governance of industry rules and energy system innovation: The case of codes in Great Britain. *Utilities Policy*, 47: 41-49. <https://doi.org/10.1016/j.jup.2017.06.008>
- 3.5 Lowes R, Woodman B, Fitch-Roy O (2019). Policy change, power and the development of Great Britain’s Renewable Heat Incentive. *Energy Policy*, 131: 410-421. <https://doi.org/10.1016/j.enpol.2019.04.041>
- 3.6 Willis R, Mitchell C, Hoggett R, Britton J, Poulter H, Pownall T, Lowes R (date). Getting Energy Governance right: Lessons from IGov. <http://projects.exeter.ac.uk/igov/wp-content/uploads/2019/08/IGov-Getting-energy-governance-right-Sept2019.pdf>. IGov project findings are published at <http://projects.exeter.ac.uk/igov/shortcut-to-key-igov-findings/>

4. Details of the impact

Meeting the Government’s target of net zero carbon emissions by 2050 (Climate Change Act 2014 and 2019) will require a very different energy system and the EPG has been a key thought leader providing evidence and ideas to support this transformation. Its research has developed an institutional framework to transfer to net zero in a way which is cost-effective, just, and secure [3.6] [5.1]. Impacts are achieved through the development of trusted advisory relationships with industry and policy leaders; robust market and policy analysis; and the delivery of innovative research led frameworks that are fit for purpose. The gear change from REF2014 has been the

shift from engagement around the need for energy sector reform into the adoption of frameworks which are now actively reforming energy sector governance.

4.1 Creating a new theory of harm around energy governance within the Energy Market Review

In 2014-2016 the Competition and Markets Authority (CMA) undertook an Energy Market Review at the request of the UK Government. The EPG provided both written and oral evidence. The original CMA consultation proposed four ‘theories of harm’ – the issues which may be damaging the energy market. The EPG was the only organisation to suggest that *energy market governance* should be added as a further theory of harm in their response to the Energy Market Investigation Statement of Issues in August 2014.

In its updated statement, the CMA included energy market governance as a fifth theory of harm, acknowledging that “the broader regulatory framework, including the current system of code governance, acts as a barrier to pro-competitive innovation and change” [5.2].

[text removed for publication]

4.2 Triggering a commitment to change the system of industry codes

Of the four remedies put forward by the CMA, only one has been taken forward: that of codes reform. [text removed for publication]

Codes are the contractual agreements which underpin the functioning of the UK whole energy system. All energy system actors need to be signed up to them. EPG analysis showed that the procedure for changing them was controlled primarily by incumbents and blocked innovation and sustainable energy interests, who were unable to engage in the code change forums. The associated Ofgem/BEIS impact assessment referenced EPG’s IGov analysis on the costs of running the code system [5.5]. Their Joint Energy Networks Code Review was launched in 2018 following the CMA’s Energy Market Review. The ‘Reforming the energy industry codes’ consultation [5.5] mirrored both IGov’s criticisms and its four suggested outcomes for code change.

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4.3 Informing the development of a revised governance framework for the GB whole energy system

EPG’s IGov research argued for a fit-for-purpose net zero energy system governance framework, which included altered future roles for BEIS, Ofgem and the system operator and code governance reform as described above.

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Furthermore, EPG IGov outputs are directly referenced in Ofgem/BEIS written material, where they are used as a guide for approaches to regulation. For example, an Open Letter Consultation on approach to setting the next electricity distribution price control sent by Ofgem in August 2019 stated: “The researchers at IGov suggested that new institutional structures may be required to clarify responsibility for the energy system transition and to ensure the system meets the needs of the future.” [5.1]

[text removed for publication]

The NIC report incorporated most of the IGov research suggestions, resulting in recommendations of how to improve resilience, open market competition, ensure benefit to consumers, and meet the 2050 net zero goal [5.7].

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4.4 Prompting BEIS to create a ‘fourth principle’ for energy policy: agile regulation

UK energy policy underwent a major ‘reset’, as explained in a speech delivered by then Business Secretary Greg Clark on November 15, 2018 titled, ‘After the Trilemma – 4 Principles for the Power Sector’ [5.10]. The ‘trilemma’ refers to the need to balance three vital considerations of energy policy: decarbonisation, security of supply, and cost. The newly introduced fourth principle – ‘agility’ – signalled that trading off in this way was no longer an option and pointed towards a new method of decision-making.

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This fourth principle specifies for agile and responsive energy regulation to “reap the great opportunities of the smart, digital economy” helping to “ensure consumers get a fair deal while opening up the market to competition” [5.9]. The ‘Four Principle’ speech announced the Future Energy Retail Market Review, intended to identify ways to transition to a more appropriate, agile energy system and catalyse long-term reform after 20 years of the current market arrangements [5.10].

In sum, the EPG has been a major contributor to how the Government approaches GB energy regulation, facilitating a step-change in strategies to meet the 2050 net zero goal, improve market resilience and promote fairer consumer prices. The group’s research has informed and catalysed critical reform reviews and consultations by major regulatory bodies, including BEIS, Ofgem, NIC and CMA, resulting in clear recommendations and commitments for regulatory reform towards a fairer, agile energy system.

5. Sources to corroborate the impact

- 5.1 Ofgem, (2019), Open Letter Consultation on approach to setting the next electricity distribution price control (RIIO-ED2), https://www.ofgem.gov.uk/system/files/docs/2019/08/open_letter_consultation_on_the_riio-ed2_price_control.pdf
- 5.2 Updated issues statement https://assets.publishing.service.gov.uk/media/54e378a3ed915d0cf7000001/Updated_Issues_Statement.pdf

[text removed for publication]

- 5.5 HM Government (2019) Reforming the energy industry Codes consultation: associated impact assessment, <https://www.gov.uk/government/consultations/reforming-the-energy-industry-codes>

- 5.6 Testimonial from the Deputy Director, Licensing Frameworks, Ofgem. 29 July 2020.

[text removed for publication]

- 5.8b: <https://www.nic.org.uk/publications/strategic-investment-and-public-confidence/>

- 5.9 Future Energy Retail Market Review, BEIS, ‘Creating an agile retail market that captures system benefits for Consumers’, referring to November 15, 2018, speech by Secretary of State

and four principles for future power sector policy

https://web.archive.org/web/20190726053349/https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/783680/future-energy-retail-market-review.pdf;

5.10 After the trilemma – 4 principles for the power sector

<https://www.gov.uk/government/speeches/after-the-trilemma-4-principles-for-the-power-sector>

5.11 HM Government, Energy White Paper: Powering our Net Zero Future, December 2020, p, 85 & 86)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf