

# The Impact of Brexit on the UK and Devolved Energy System

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September 2019

## Summary

This briefing paper uses the example of a changing UK/Scottish government relationship after Brexit to demonstrate how to analyse the role of politics and policymaking in the transformation of energy systems.

Brexit will create a new division of policymaking responsibilities between EU, UK, and devolved governments.

In this paper we divide energy policy competences according to levels of government. Initially, it suggests that we can generate a clear picture of multi-level policymaking. However, the formal allocation of competences only tells a partial story, because actual powers may operate differently from the strict legal picture. These blurry boundaries between responsibilities may be further complicated by Brexit, even if it looks like the removal of a layer of government will simplify matters.

Instead of imagining clear lines of accountability, think of energy policy as part of a complex policymaking system – in which the link between powers, practices, and outcomes is unclear – and an energy system, in which government is only one of many influences on outcomes.

## Key findings

- Brexit could have a major impact on UK energy policymaking, but its likely effect remains unclear.
- We can predict major changes to formal policymaking responsibilities. There is less certainty of the policies that may arise from EU, UK, and devolved governments.
- The law is only one aspect of policy, and policy is only one influence on energy system outcomes.
- ‘Systems thinking’ helps inform discussions of, for example, the impact of Brexit on the transition to a low carbon energy system.
- However, terms such as ‘energy systems’ will only be useful when researchers and practitioners clarify their meaning and identify the role of policy in their transition.

Constitutional change could have a major effect on UK energy policy. Brexit will produce a new division of policymaking responsibilities between EU, UK, and devolved governments. It will affect the ways in which governments seek to influence aspects of energy demand and supply. Yet, there is high uncertainty about how these changes will affect the ‘energy system’:

- The impact of key events and choices is still unclear, prompting much short term governmental, private sector, and consumer hesitancy. Actors know that key aspects of multi-level policymaking will change, but do not know how it will affect policy.
- It is not always clear what an ‘energy system’ is, how it influences policy and policymaking, and how any shift in responsibilities will affect the system.
- Analysts contribute to uncertainty by describing these developments in very different ways. Some focus on the profound importance of politics to policymaking instability and policy change. Others use ‘whole systems thinking’ to identify the connectedness of technology, supply chains, and commercial and individual demand without incorporating politics or showing how policy change contributes to system change.

Therefore, to address uncertainty about the impact of Brexit on energy policy and outcomes, we need to identify the immediate impact of political change *and* situate its effects within a wider analysis of energy systems. This briefing paper uses the example of a changing UK/ Scottish government relationship after Brexit to illustrate how to analyse the role of politics and policymaking in the transformation of energy systems.

We draw on published work (Cairney et al, 2019) to describe developments in the formal division of policymaking responsibilities which combine with informal processes. UK and Scottish governments rely increasingly on a shared powers model, which blurs boundaries between responsibilities, and produces the need for intergovernmental relations to ensure policy coherence.

We also draw on an ongoing review of the ‘energy systems’ literature (Munro and Cairney, 2019) to clarify what people mean when they describe (a) an energy system and (b) how a government can influence it.

UK and Scottish governments engage with ‘systems thinking’ to a certain degree by encouraging a transition from high to low carbon systems. However, they do not clarify the extent to which they can influence the aims they describe, or if they rely on cooperation between many actors in public and private sectors. Similarly, most academic studies do not define an energy system well

enough to show how government policy fits in. Our review helps identify three different stories of energy system transitions.

Overall, we show that the immediate impacts of Brexit on formal policymaking responsibilities are relatively clear compared to the ways in which governments use their responsibilities to produce policy in action. The impact of political and policymaking change on the proposed transition towards energy system sustainability is least clear, but we can at least provide a way for governments and academics to *describe* this process clearly.

## Formal and informal divisions of energy policy responsibilities

In Table 1 we divide energy policy competences according to levels of government. Initially, it suggests that we can generate a clear picture of multi-level policymaking. For example, the EU focuses on: environmental law and state aid regulations in relation to trade and competition, energy security, and objectives such as to reduce energy demand and increase the proportion of energy supply from renewable sources. The UK is responsible for energy security overall, covering key aspects such as the production and regulation of nuclear energy, the regulation of electricity supply, and access to the minerals (coal, oil, gas) required to produce energy. The devolved role seems limited to the delivery of EU regulations and UK-driven policies, the promotion of measures influencing supply and demand, and non-energy policies with an indirect impact on energy use (Cairney et al, 2019: 460).



**Table 1: Distribution of energy decision-making competences.**

Level	Direct competences	Indirect competences
<b>European Union</b>	Internal energy market (gas and electricity) Energy security Promotion of renewable energy Regulation of biofuels Promotion of energy efficiency/energy efficiency standards Energy networks Trade in and safety of nuclear materials (Euratom)	State aid regulation Competition law Free movement law Greenhouse gas emissions trading Other atmospheric emissions Water quality Environmental impact assessment Offshore carbon storage Trans-European networks Innovation/R&D funding Structural funding & strategic funding (e.g. in transport and energy infrastructure)
<b>EU Agencies</b>	Cross-border market integration and network harmonisation (ACER)	
<b>United Kingdom/Great Britain</b>	Ownership of resources (coal, gas, oil, gas storage rights vested in the Crown) Regulation of energy markets Licensing of energy producers, suppliers and network operators Energy security Energy taxation Renewable energy subsidies/grants Energy efficiency subsidies/grants Nuclear energy Golden Shares Nuclear licensing and nuclear safety	Competition law Financial services regulation Intellectual property and commercial law Climate change laws Social security (winter fuel payments; energy debt payments) Workplace health and safety Emergency powers Treaty-making powers R&D funding
<b>UK/GB Agencies</b>	Gas and electricity market regulation (Ofgem) Coal mining licensing (Coal Authority) Oil and Gas Authority Office for Nuclear Regulation Nuclear Decommissioning Authority	Competition law (Competition and Markets Authority) Financial services regulation (Financial Conduct Authority) Health and safety (Health and Safety Executive)
<b>Devolved</b>	Promotion of renewable energy Promotion of energy efficiency Fuel poverty support systems Electricity and gas installations consents Onshore oil and gas licensing Nuclear waste storage	Crown estate (seabed use/storage rights) Marine licensing and planning Property law (access to land/subsoil; nuisance; servitudes and wayleaves) Environmental emissions & water quality Climate change law Environmental impact assessment Housing law/building regulations Economic development Social security law Transport policies (including Air Passenger Duty from 2016)
<b>Devolved Agencies</b>		Environmental emissions and water quality (SEPA) Seabed leasing (Crown Estate Scotland)
<b>Local</b>		Land-use planning

Source: Cairney et al (2019: 460). We acknowledge (but do not include in the table) the wider international arena, which affect competences directly (e.g. nuclear energy; energy investment treaties), and indirectly (e.g. international environmental law; international law of the sea; international trade law).



However, the formal allocation of competences only tells a partial story. Cairney et al (2009: 460-3) identify reasons why actual powers may operate differently from the strict legal picture:

- **EU, UK, and Scottish competencies are not exclusive.** It is often possible for another government to engage in a field when the formally responsible government is inactive.
- **Some EU powers are designed to promote action,** rather than strict prescriptions backed by effective regulation.
- **Some responsibilities are devolved and Europeanised,** which gives the UK a role in coordinating the Scottish government contribution to the UK's EU obligations.
- **There is a general lack of clarity about overlaps in responsibility.** For example, the UK has overall responsibility for energy, but the Scottish Government oversees planning permission for electricity generation, power lines, and onshore drilling applications. Further, both UK and Scottish governments control aspects of transport responsibilities which affect energy demand.
- **Some powers are increasingly shared in complicated ways, in practice and by design.** Any field not reserved by Scotland Acts is assumed to be devolved, including aspects of climate change policy not in the Scotland Act 1998. In areas like 'fracking', there is an explicit UK decision to retain control for taxation but devolve licensing and planning.
- **Some UK powers are devolved to Scottish ministers.** 'Executive devolution' describes Scottish ministers having the power to take forward UK government policies.
- **Incomplete powers and political vetoes.** Some EU powers are difficult to disentangle, such as when its energy competence does not preclude the UK from extracting energy resources but its environmental policies contribute to the UK shift from highly polluting coal-fired power generation. The same may be true for UK powers in Scotland, although UK ministers have – for example – tended to accept a Scottish Government 'veto' over new nuclear power.



- **Legal powers and political reality go hand in hand.** The UK has often exceeded its formal influence by forming effective networks across the EU to liberalise energy markets. The Scottish Government has carved out a disproportionate role in renewable energy partly because it helps the UK meet its EU obligations.
- **The law is one of many contributors to multi-level energy policy.** Energy policy consists of a large number of interacting ‘instruments’ or ‘tools’ – including regulation, persuasion, policies to distribute services or redistribute income, and the money and staffing behind the implementation of key aims – with an intended or unintended, direct or indirect effect. In multi-level policymaking systems, there is high potential for policy incoherence (when many instruments undermine or contradict each other). There are mechanisms for intergovernmental relations to encourage information sharing, learning, and dispute resolution, but in a context where it is difficult to make sense of the overall impact of policy (partly because governments do not control that impact).

Cairney et al (2019: 465) discuss examples in which these blurry boundaries play out in practice, and may be further complicated by Brexit, including: the lack of coordination around multiple ways to address energy demand (including energy labelling and product/building standards, emissions reduction measures, promotion of efficient generation, and buildings performance measures); and, the future harmonisation of rules to encourage an EU-wide energy market. Further, energy issues seem most stark when we consider the cross-cutting nature of energy ‘transitions’, in which governments at all levels are committed – albeit in different ways, with different roles to play – to the transformation from high to low carbon energy systems.

## The impact of government policy on energy system transitions

The idea of an energy system transition or transformation magnifies post-Brexit confusion because it raises three major forms of uncertainty:

1. **Conceptual.** What people mean when they describe an energy system, and how they imagine its transformation.
  2. **Policymaking.** How they describe the contribution of policymaking and policy to system change.
  3. **Political.** How they debate and compare the best ways to seek energy system transformation.
- Munro and Cairney’s systematic review (in review, 2019) shows that academic studies and UK and Scottish governments refer to energy systems, and their hopes for energy transitions, but with a tendency to use these terms frequently but not precisely. They identify only 24 (of 1115) articles that provide a clear definition of ‘energy system’ in relation to an established literature on systems or systemic transitions. They also show that governmental discussions of transitions are often aspirational and metaphorical, with insufficient attention to how they actually contribute to system change.
- The UK Government has made several commitments in relation to climate change and reducing greenhouse gas (GHG) emissions that require significant shifts in the UK’s energy system. The Climate Change Act 2008 presented a legally binding target of GHG emission-reduction levels of 34% by 2020 and 80% by 2050, followed by an amended ‘net zero’ target (100% reduction) in 2050 (1990 baseline levels). Some of the UK’s delivery plans refer to the concept of an energy system, but our review suggests that the role of ‘systems thinking’ is not set out systematically in key policy documents (particularly when compared to more tangible discussions of, for example, specific commitments on future energy mixes).
- The Scottish Government’s (2017) energy strategy provides more explicit reference to systems thinking and the ‘whole system view’, and its approach is lauded by participants in the energy sector (who we interviewed as part of our wider research project). It identifies functional requirements of a system such as ‘resilience’ and describes ‘the connections between the energy system and all parts of the economy’, to seek:
- ‘a well-balanced system capable of providing secure and affordable energy to meet Scotland’s needs’
  - ‘an assessment of technological changes and advances with a bearing on Scotland’s energy system’
  - ‘System security and flexibility – Scotland should have the capacity, the connections, the flexibility and resilience necessary to maintain secure and reliable supplies of energy to all of our homes and businesses as our energy transition takes place’.
  - ‘The equivalent of 50% of the energy for Scotland’s heat, transport and electricity consumption to be supplied from renewable sources’ and ‘An increase by 30% in the productivity of energy use across the Scottish economy’ (pp 6-8).
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However, it does not define an energy system, and the document's images rely on very loose metaphors rather than more-established conceptions of systems in the energy literature. It describes many different things as systems – including: 'integrated local energy systems', 'smarter domestic energy applications and systems' and 'heat, transport and electricity systems' – and describes a distinctive Scottish energy system as 'part of the wider Great Britain and European energy market' and subject to 'disruptions in the international energy system' (pp 6-12). Overall, the language of systems projects a very general way of thinking holistically about energy policy, including to zoom out and analyse the interconnectedness of processes such as:

- the relationship between heat, transport, electricity, and energy efficiency;
- industrial assets, and economic opportunities relating to technological development;
- hopes for a long term transformation towards decarbonisation and sustainable energy supply and demand (in the historical context of North Sea Oil as the provider of disproportionate economic activity).

Such accounts are potentially useful, since governments could describe a pragmatic and legitimate role to encourage a well-functioning rather than a centrally controlled system. Yet, without any attempt to define a system, its key components and processes, and the specific role of government in helping to secure specific targets, these discussions remain vague metaphors with potential to mislead rather than inform.

## Resolving conceptual and policymaking uncertainty

Munro and Cairney (2019) identify, from the peer reviewed academic literature, three main ways in which to identify what an energy system is, what its transformation looks like, and how policymaking contributes to system change. It turns systems thinking into three different stories that provide take home messages for actors seeking to influence their transition:

**1. Socio-technical systems.** High carbon energy regimes are highly path dependant, but innovation within an initially insulated niche – supported by a wider social and political environment – can aid 'socio-technical transitions' (STT) or 'sustainability transitions' to a low carbon system.

- 2. Complex systems.** Governments may propose a transition from high to low carbon energy systems, but policy outcomes are not in their control and there is too much uncertainty to predict the effect of their actions. Many accounts emphasise the need for central governments to give more discretion to local actors to adapt to a rapidly changing environment.
- 3. Social-ecological systems.** We need effective institutions to manage finite resources and minimise environmental damage. Key institutions are not – and need not necessarily be – controlled by governments or single central governments. Rather, we need rules and mechanisms to ensure high cooperation among many actors and societal ownership of the means to achieve energy transitions.

## Resolving political uncertainty

This conceptual clarity should help academics and policymakers produce more coherent analysis to inform political debate about what type of transition is appropriate (and if or how governments can secure it). Key issues include the measure of progress we prioritise, such as the most efficient or equitable way to transform energy systems. For example, the Scottish Government Just Transition Commission (JTC, of which Professor Turner is a member) focuses on 'fairness' and improved opportunities and wellbeing for all Scottish citizens while achieving commitments on climate neutrality set out in the Climate Change (Emissions Reduction Targets) (Scotland) Bill. Wider issues involve the role that the state, market, and citizens should play in that transformation. For example, Chilvers et al (2017: 440) – as part of the Transition Pathways Consortium – describes three potential pathways:

- 1. The market is the main pathway and form of governance.** In this scenario, the main technologies are coal and gas (combined with carbon capture), nuclear, and offshore wind; government management is minimal, focusing on strategy and carbon prices; and, heating/transport demand for electricity is 'much greater than today'.
- 2. There is major central government coordination.** The main technologies remain the same, the government commissions low carbon electricity from big businesses, but more energy efficiency means demand is 'slightly higher than today'.





**3. There is major civil society direction.** The main technologies are solar, onshore and offshore wind, renewable heat/power sources; there is more community ownership and service user engagement to produce local solutions, and a combination of efficiency improvements and consumer awareness produces demand 'lower than today'.

## Conclusion

Any attempt to understand the impact of Brexit on the UK and devolved energy system needs to address a combination of political, policymaking and conceptual uncertainty. Initial policymaking uncertainty relates to the likely impact of constitutional change on the division of multi-level responsibilities. Although it is possible to compare current responsibilities and possible futures, the actual production of policy relates to overlapping and shared powers combined with a tendency of policymakers to go beyond their powers (or accept that other governments will do so). This uncertainty about how governments will seek to make energy policy contributes to wider uncertainty about their impact on energy systems. 'Systems thinking' is crucial to academic (and often governmental) analysis, but it is not yet clear how current

discussions of constitutional and policymaking changes relate to the language of systems.

In theory, we can combine conceptual insights to tell an overall story of energy system transitions. First, for example, niche innovation supported by a wider social and political environment can help produce the transition to a low carbon system. Second, governments may be able to help facilitate this transition, but policy outcomes are not in their control (even if they are ultimately held responsible). They need to share responsibility for outcomes with other actors more able to adapt to a rapidly changing environment. Third, much of this responsibility will lie with non-governmental actors who need to find ways (and incentives) to cooperate to manage resources and reduce environmental damage.

A significant energy transition is already underway in the UK, but its future remains uncertain. To make further progress, we need to develop rules inside and outside government to produce (a) the mechanisms to ensure high cooperation among many actors, and (b) societal ownership of the means to achieve energy transitions. If so, we can clarify the role of policy and policymaking in a post-Brexit energy transition and continue to debate the most appropriate means to do so.

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## Thank you

This project was undertaken as part of the UK Energy Research Centre programme, funded by the UK Research and Innovation Energy.

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Our whole systems research informs UK policy development and research strategy. UKERC is funded by the UK Research and Innovation Energy Programme.

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