

# **UNDERSTANDING THE ENERGY UNION: A SINGLE CONCEPT FOR MANY SYSTEMS**

Antti Silvast, University of Edinburgh, School of Social and Political Science, antti.silvast@ed.ac.uk  
Ronan Bolton, University of Edinburgh, School of Social and Political Science, ronan.bolton@ed.ac.uk  
Mark Winskel, University of Edinburgh, School of Social and Political Science, mark.winskel@ed.ac.uk

## **Overview**

As recent scholarship on transnational infrastructure has shown (e.g. van der Vleuten, 2004; Kaijser & Schot, 2014), energy policies of the state, sub-national regional energy policies, and transnational policies are interdependent in a myriad of often hidden ways. Our age of suggested European integration is also, paradoxically, the era of the nation-state, the region and the city. Rather than any overall ‘energy transition pathway’, or a wholly dominant version of ‘energy system integration’ what we observe is a contested multi-scale process, with distinctive (and somewhat incompatible) preferred system boundaries, evidence bases and technological, organisational and political affiliations. Focusing on the electricity sector, the aim of our project is to examine through a Scottish lens the key challenges, uncertainties and opportunities presented by greater European energy system and policy integration. Achieving Scotland’s ambitious low carbon and renewable energy targets is to a significant degree contingent on decisions made outwith the Scottish government’s jurisdiction; therefore research which explicitly examines the embeddedness of Scottish energy policy in a multi-level energy system context will be key to understanding the complexities of low carbon energy transition in a Scottish context. Along with informing the Scottish policy debate the project seeks to contribute to international scholarship on sustainable energy transitions (Verbong & Geels, 2007; Rohracher, 2008; Hodson & Marvin, 2010). This research develops a more robust conceptual approach to multi-level energy system analysis, taking Scotland-Europe as a relevant example. Recently, similar European energy integration has become a growing interest among scholars, but our approach is distinctive from many other contemporary studies. Rather than a political science perspective which understands energy integration alongside national political interests and supranational governance (Szulecki et al., 2016), our interest lies in the more hidden, but not necessarily less influential, practices of energy system integration such as market codes that allow European energy infrastructure projects to function. And instead of presuming Europe to be an integrated energy system and seeking to optimize it at that scale (see e.g. [www.roadmap2050.eu](http://www.roadmap2050.eu)), we seek better understanding of the unique problems that exist in transnational integration of national and regional energy systems and engage with the knowledge and expert work that proposes methods to solve them.

## **Methods**

Our initial findings are based on using a number of sensitizing concepts to understand European energy integration, through a Scottish lens, as it is represented among energy experts, in policy documents, and in events about European energy systems. These concepts reflect our concern with durable material infrastructure and exploit and contribute to literature in socio-technical transitions and European infrastructures, mentioned above. The key source material for this research is a series of interviews with experts in various levels of energy policy and markets from the European Commission to European energy industries, Scottish stakeholders, UK-level authorities and non-governmental organisations. From 2015 to 2016, we conducted interviews with experts in the European Commission, DG Energy; Eurelectric, representing the whole electricity industry in Europe; GEODE, representing electricity distribution operators in Europe; Ofgem, UK’s electricity regulator; European Policy Centre, a Brussels think tank; E3G, a London think tank; and from Scotland, Scotland Europa and SSE. We have also participated in Scottish and European events about the Energy Union for one year and analysed its key policy documents.

## **Results**

A more integrated European energy policy has long been an ambition of the EU. In 2015 the European Commission launched a high-level initiative called the European Energy Union. Its aim is to set out a long term trajectory for energy in Europe to address the challenges of energy security, climate change and economic competitiveness. The Energy Union strategy contains all of these existing policy visions and proposes European energy policy efforts in five substantive areas: supply security; fully integrated energy market; energy efficiency; emissions reduction; and research and innovation. Through these aspirations the Energy Union vies for a single and resilient continent-wide energy system.

In practice, the Energy Union is not legislation but a policy package that will update several pieces of legislation including renewable energy, the single energy market, regional energy markets and co-operation, heating and cooling, urban policy, maritime policy, gas security of supply and trans-European energy infrastructures. Alongside these different pieces of legislation, however, are wider ambitions of developing ways to govern such different issues in a transparent way across Europe, also raised as an issue in UK policy and academic debates.

On the more visible end are the EU's two climate packages, 2020 and 2030, targeting greenhouse emissions, energy efficiency and renewables. The UK's and many others ambition of a light-touch approach to climate targets differentiates the 2020 and 2030 packages, but how will the EU-wide targets be attained if not mandated in Member Countries? The EU's answer to this issue, though its methods are clearly work-in-progress, lies in the integrated national energy and climate plans, mandated by the Energy Union. The plans are meant to set direction for energy and climate objectives, but are tellingly operating on the national level – not internationally, nor sub-nationally. Prepared by national institutions such as Department of Energy & Climate Change (DECC) in the UK, the input of regions to these plans remains an open issue worth exploring.

A much less visible area is to do with EU's competition powers in energy policy. Since the third market package in 2009, EU institutions and national energy market regulators have been developing common network codes for energy markets. Detailed and technical standards, the regulators we spoke to were clear that these are also a driver of infrastructural integration and transnational connectivity, which will be affected by how national regulatory agencies jointly make decisions and interact with a range of European associations. These associations are mandated by the third energy market package – ACER for energy market regulation, ENSTOE for electricity transmission operator. ACER's role is to set the framework guidelines for network codes, whereas ENTSOE develops their contents in technical detail. Some argue that ACER needs to have more implementation powers which can in certain circumstances surpass those of national regulators. There is also an ongoing debate about the dual role of ENTSOE as an industry association and a statutory body with a public remit to assist in the design and implementation of market rules. With the third package still work-in-progress, a redesign of the EU's energy market is also looming under the Energy Union, most critically through a public consultation that took place in fall 2015. One key theme is whether the EU should favour an “energy-only” market or have mechanisms for remunerating capacity. As a practical matter, capacity mechanisms might be unavoidable and the harmonising of their design then becomes the main concern.

## Conclusions

A number of discussion points and questions emerge from these results, exemplifying Scotland-Europe relations in energy integration. The Energy Union's climate plans, while prepared nationally in the UK, could incorporate the detailed reporting of energy indicators in Scotland. The alignment of these plans with Scotland's own energy strategy remains a challenge at least temporally, as the two are prepared at the same time. In addition to climate, the Energy Union puts a great deal of emphasis on gas security. The Commission is sending signals that gas demand across Europe will likely remain as is for the medium term; but this opens up further questions on how Scottish prices will be affected. The increasing centralisation of design of network codes in energy markets to the EU level has potential effects to the Scottish energy markets. Our ongoing examination asks what parts and contents of the codes are the most relevant in this context. The harmonisation of capacity mechanisms on the international or regional level also can affect energy businesses and the ambitious renewables targets in Scotland (particularly in terms of interconnector participation). Lastly, while regional energy systems governance could be an opportunity for Scotland – for example in optimising offshore wind infrastructure and creating synergies in network investment around the North Sea – open policy and research questions remain on who the new regional system builders are and where they are emerging from. Our emerging findings suggest that one should be especially sensitive towards who and what gets to define a regional energy system and its boundaries; interconnectors, synergies between energy mixes, history, or other things.

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