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Financing the civic energy sector: How financial institutions affect ownership models in Germany and the United Kingdom

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ABSTRACT

This paper examines the relations between financing institutions and more local ownership structures for energy provision. This research defines municipal and civil society structures involved in energy provision as the 'Civic Energy Sector'. It argues that the financial institutions of nations are key enabling institutions for this sector to contribute to a low carbon energy transition. The path of development of these financial institutions helps to shape the ownership structures and technology choices of energy systems and futures in different nations. This paper presents findings from case analysis comparing the United Kingdom's latent civic energy sector, with the expansion of this sector in Germany. Using an institutional economics framing, the paper demonstrates the importance of the German local banking sector in facilitating civic ownership structures in that country. In contrast, the neo-liberal, market-led financial institutions in the UK, reinforce energy pathways less reliant on civic ownership models. Hence, the forms of low carbon energy transition being pursued in these countries are constrained by path dependence of institutions both within and beyond the energy sector.

1. Introduction

This paper explores the concept of a 'civic' energy sector, comprising citizen, community, co-operative and municipal ownership of energy systems. The authors argue this is a useful classification for examining the role of institutions beyond the market and state in energy transitions. The authors explore the relations between these civic ownership structures and institutions of banking and finance, arguing that the macro financial institutions of nations are key *enablers* in energy transitions. It is increasingly important to understand how financial institutions can enable civic energy participation, and how these interact with regulatory institutions, such as feed in tariff laws or portfolio standards, to constrain or incentivise different ownership forms. As such it is useful to conceive of a 'civic energy sector' as consisting of both 'community' energy schemes and municipal business models in generation, distribution, supply, and examine their enabling financial institutions.

Previous research has examined the effects of different governance and institutional framings on national energy system transitions [1,12]. However, as these system transitions are largely country-specific, this paper adopts a comparative case study of the emerging civic energy sectors in the UK, and Germany. Understanding the enabling role of financial institutions has wider significance for assessing the potential for civic energy sectors in other nations to play a substantive role in achieving transitions to secure, affordable and low carbon energy systems.

This paper is structured as follows: Section 2 establishes the concept of a civic energy sector and highlights a gap in the literature on the role of institutions of finance in energy systems change. Section 3 describes the comparative case methodology. Section 4 presents empirical results on the participation of civic forms in the UK and Germany, and the effect of financial institutions on the deployment of renewable energies. Section 5 discusses how the contrasting emergence of a civic energy sector in these two countries has been shaped by their respective financial institutions and linked social and cultural values. Section 6 concludes the analysis and proposes further research questions.

2. The concept of a civic energy sector and the role of financial institutions

2.1. Community and municipal energy

Much work exploring civil society participation in the energy sector has focussed on community-led energy projects. These treatments often analyse the internal dynamics of organisations as

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opposed to taking a systemic perspective. Research has tended to focus on community generation [2–4] or investigate group formation, policy suitability and barriers to entry [5–8]. In parallel to the community energy debate, there is a growing understanding that the municipal level can be a key actor in energy transitions [9–11], particularly in a decentralised future [12,13]. However, research into municipal institutions in the energy sector has also tended towards analysis of their internal workings; or the alignment of 'institutions, techniques and artefacts' that bring urban actors into the energy space [14]. This is useful in understanding the institutional dynamics within the sector, but more needs to be done to understand the role of wider institutional context[s] on community and municipal ownership forms [15,16]. What has been missing is an investigation of the *enabling* institutions of civic and civil participation beyond the energy sector, and their impact on energy systems. This paper focusses on the interplay of financial institutions and civic ownership structures.

2.2. Exploring a 'civic' framing

To explore the effect of enabling institutions on the non-state non-corporate ownership models in the energy sector, a broad definition is needed. We adopt the term 'civic' because civil society and the civic sphere have often been proposed as a third element of contemporary society, beyond market and state. Civil society can provide goods and services in a way which claims to both transcend the bureaucracy and ideologies of state forms of welfare and service provision, and ameliorate the amorality of pure market approaches [17,18]. However, whereas civil society refers to a community of citizens linked by common interests and collective activity, 'civic' is defined as relating to a city or town, especially its administration (the municipal). Whereas civil society can be a-territorial, 'civic' has a particular geography and incorporates the local state or municipality. Municipalities are often classified as part of the public sector, a 'state' form. However the unproblematic adoption of the municipal level as a pure 'state' form does not capture the agency of a municipality beyond the strategies imposed upon it by higher levels of the state [38]. Whilst we do not argue for an incorporation of the municipal into civil society, we do argue that the 'civic' framing is a useful moniker for investigating the interplay of values, institutional form and energy system change.

2.3. Institutions as enabling agents

The financial institutions of a country are often characterised as either bank or market-based [19]. In national economies with a more [neo]-liberal political economy as in the UK, 'market based' finance is drawn from capital markets via equity or debt instruments traded in liquid securities. "In co-ordinated market economies such as Germany and Japan, banks play a much more important role in the long-term financing of companies as part of a broader 'corporatist' industrial structure" [20]. Following the Varieties of Capitalism School, this national [financial] institutional context affects the ability of economies to deploy finance to either fixed capital formation and lending to the 'real economy' [20]. As decentralised energy systems are a particularly visible form of fixed capital formation, one would expect institutional analysis of finance to form a greater part of energy systems research. However much energy research on financial 'institutions' focusses on the micro-economic institutions of market making tools and support regimes such as renewable energy subsidies [21], emissions trading mechanisms [22] and carbon pricing [23]. This has proven a rich ground of analysis for neo-classical and political/institutional economists alike. However, much less attention has been paid to how the institutional context beyond the energy sector affects how each of these mechanisms play out (though see [24,25]) particularly at the local scale.

Sovacool [26] calls for more attention to energy institutions and the governance forms they produce. There is no uncontested definition of an 'institution' due to a divergence between original and neo-institutional economics [27]. We begin with Foxon's [28] definition; institutions are 'ways of structuring human interactions'. Here institutions are "the rules of the game", which can include regulatory frameworks, property rights and standard modes of business organisation. Neo-institutional approaches conceive of formal and informal institutions placing constraints on human behaviour. Formal institutions are codified rules, legislation etc enforced by courts; with informal institutions comprising behavioural norms, enforced at the individual level through peer groups etc. For an example of formal institutions in the energy field see Aalto [29] who defines three types of formal institutions in energy governance (regulations and rules, actor organisations, and actor agents).

The 'original' institutional economics tradition views the formal/informal distinction, and its framing of institutions as pure *constraints* on human behaviour, as insufficient [30]. The original institutionalists, following Veblen [31], understand the role of institutions as *enablers* of specific action, and *shapers* of individual preference. This approach pays more attention to social rules systems, and how some institutions rely on others for legitimacy. Hall and Taylor [32] describe how the institutions of a given nation or region can lead to 'path dependency',—the idea that the history of institutional development through space and time matters. For an energy example, see Toke et al [62]. who analyse the institutional factors beyond renewable energy price supports and geographic resource that lead to different rates of deployment of wind energy across four nations. For Provance et al. [33], renewable energy deployments are affected by socio-institutional forces such as cultural norms, values, and behaviours, which are adopted by organisations to constrain some behaviours but *enable* others. Institutions then, include the codified rules of formal institutions, informal behavioural norms *and* the layering of institutions through time which can lead to path dependency and lock in [28,34]. One must pay attention to formal institutions in structuring market interactions, *and* the social construction of institutions, historic contingency, and the complex interplay of shared values across institutional worlds. Much civil society activity relies on some form of shared norms and values, which are critical preconditions for community energy and institutional management of other resources [2,35,36]: "As manifestations of shared values, institutions influence agents' preferences, choices, and actions as well as aggregate economic and environmental outcomes" ([37] p. 360).

Original institutionalism opens the study of institutions to a wider political economy. Nation states, despite ongoing processes of reorganization, have an enduring power to mould the institutional environments of given sectors [30]. This raises the question of not only *how* the state moulds institutional environments, but also *for whom*. In defining the state as strategically selective, Jessop [38] describes how in built biases of state structures make them more accessible to some groups and interests than others. Original institutional economists argue that a nation's territorial political economy profoundly affects the spatial composition of financial institutions, which in turn affects the likelihood of these institutions to lend into local/regional organisations in the 'real' economy [39,40]. As Mitchell [41] and Smith demonstrate; the political economy of different nation states permeate into the institutions of energy system transitions. As such there are links between national political economy, the geography and activity of financial institu-