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'Them and us': Regional-national power-plays in the German energy transformation: A case study in Lower Franconia

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ABSTRACT

This paper reports a regional case study of key issues for Germany's energy transformation (*Energiewende*) in and around Schweinfurt County (*Landkreis Schweinfurt*) in the geographical region of *Unterfranken* (Lower Franconia). Document research and semi-structured interviews with strategically selected local persons were conducted, supplemented by existing local knowledge. Citizen cooperatives in Lower Franconia have built numerous wind farms, were forerunners in commercial photovoltaics and provided political impetus for Germany's renewable energy subsidy law. But locals report disillusionment with recent neoliberal trends that lead to well-financed absentee investors buying up renewable energy siting rights, manoeuvring and pricing locals out of business, while government demands local access for an electricity superhighway that will serve other regions. The paper investigates local actors' perceptions of power plays between themselves and outside investors and policymakers, using Geels' schema of instrumental, material, institutional and discursive power. It finds locals outmanoeuvred and losing control, to outside interests, of what has been a significant contribution to the Energiewende, while their wider local economy and solidarity are being undermined. The paper recommends policymakers avoid framing regional groups as problems to be solved and instead act to support and harness their unique social resources for a more socially acceptable Energiewende.

1. Introduction

This paper presents a case study, in a small region of Germany, of social-political power-plays that bear on the local acceptance and progress of the 'Energiewende'. The term *Energiewende* refers to the transformation of Germany's energy supply toward low or zero carbon sources by the middle of this century (Strunz, 2014). It is widely agreed in Germany that this transformation is necessary, though there is less consensus on concrete goals and steps to achieve it – indeed the Energiewende has been described as: '… a veritable minefield of stakeholders, interests, conflicts and alliances' (Pegels and Lütkenhorst, 2014).

A major part of the Energiewende is the decarbonising of electricity supply, which is the broad context in which this paper is set. Although German governments have adjusted goals over the past 15 years (Hake et al., 2015), the basic pillars of the Energiewende are broadly agreed: phasing out nuclear power by 2022; increasing the share of renewable electricity sources (RES); more rational international and regional grid interdependence; backup from electricity storage together with conventional plants to compensate for the unpredictability of RES; a 'smart' grid that responds intelligently to instantaneous and predicted fluctuations; and long, medium and short term auction markets to drive price efficiency (BMWI, 2017).

This study's main interest is in social-political issues relevant to the Energiewende. Through the case study it explores how social-political power plays operate between local and higher levels to determine who can produce what renewable energy and who gets control of relevant policy and resources.

The context within which this is set is 'social acceptance' of the Energiewende. The general research question that motivated the study is: what can an in-depth investigation in a specific, localized region reveal regarding acceptance issues for the German Energiewende? This is part of a larger study of social acceptance of the Energiewende within an even larger, ongoing study of its possible futures (BMBF, 2016). The case study region is Schweinfurt County (*Landkreis Schweinfurt*) and its western border municipalities. This lies in Lower Franconia (*Unterfranken*), in the north-west of the southern Federal state of Bavaria. The border counties of Landkreis Bad Kissingen and Landkreis Main-Spessart were included in the study because of their strong social, cultural, religious, economic and functional links to Landkreis Schweinfurt. Hence about one-fifth the area and population of Lower Franconia is included in the study.

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Lower Franconia has an area of 8531 square km and a population of 1,306,048 in 2015, the vast majority of whom are Catholic and *unterfränkisch* (Lower Franconian) in culture, heritage and dialect. In Germany regional variations play a significant role in how people vote, invest, worship, dress, speak, relate to the land, and perceive the world (Larkey, 2008). Regional characteristics are important for the Energiewende, since decisions taken purely on a national scale may clash with local aspirations.

This district was chosen for the case study because, firstly, here most of the key ingredients of the Energiewende are found within a small area. The nuclear power station at Grafenrheinfeld, just south of Schweinfurt city, was shut down in 2015. Its large electricity distribution hub is seen by the Federal government as a logical choice for a grid superhighway hub. This has brought into focus issues of acceptance of electricity transit lines through the district.

Closing Grafenrheinfeld also made Landkreis Schweinfurt a net importer rather than exporter of electrical energy, presenting challenges and opportunities for local RES enterprises.

Secondly, local residents were forerunners in the commercial development of wind and photovoltaic power around the turn of this century. A local consortium built Lower Franconia's first wind power turbine, at Sachserhof-Gauaschach, and others soon followed, so that nowadays there are almost no locations left for new wind turbines. Local groups developed the feed-in tariff subsidy for photovoltaics, and a local Federal member of parliament (MP) devised the legislation (*Erneuerbare-Energien-Gesetz*) that set subsidies for renewable electricity generation until major legislative changes in 2016–2017. Photovoltaic panels are numerous throughout Landkreis Schweinfurt on roofs of houses, barns, workshops and industrial buildings, and there are large arrays in farmers' fields. There are also small but significant ventures in bio-mass electricity generators from maize crops and waste, and small hydroelectric generators. Schweinfurt is a specialist industrial centre for ball-bearing manufacture and at least two factories supply bearings for wind turbines throughout Germany.

Thirdly, the region is culturally strongly homogeneous and consciously Lower Franconian. The Franks of Upper, Lower and Middle Franconia distinguish themselves from each other and also from the Bavarians, the major cultural group in Bavaria. Franconia's history dates back to at least the 9th century when it was part of the post-Charlemagne Frankish empire. It had periods of independence and fragmentation over the centuries, generally with government centred on Würzburg, until incorporated into the Kingdom of Bavaria by Napoleon in the early 19th century. After the Second World War, when state boundaries were redrawn, Franconia remained part of Bavaria.

The deep sense of the locals' history was illustrated, for example when the village of Rütschenhausen (about 180 inhabitants) celebrated its 1100th anniversary in 2007, with days of street celebrations crowded with Lower Franconians from near and far and a range of rituals in traditional Franconian costumes. A similar event took place recently in Sulzthal for its 1000th anniversary.

The study's author, a non-German, has 30 years of ethnic familiarity with the region and its people and has observed the culture, economy and developments related to the Energiewende, including a previous study on energy efficiency in houses (Galvin, 2011, 2012, 2014).

The following section of this paper critically reviews literature on social-political issues relevant to the acceptance of RES into the electricity grid, and proposes using Geels' four-fold schema of power-plays for understanding key issues in the Landkreis Schweinfurt context. Section 3 outlines the method. Results are offered and discussed in Section 4. Section 5 concludes and offers recommendations for policy-makers.

2. Literature review: toward a conceptual framework

Because of the immense range of factors related to acceptance of the Energiewende, a focused conceptual framework was developed to guide and bound the terms of the investigation. Insights were first sought in the literature on acceptance of green and renewable energy technology.

2.1. The acceptance literature

Studies of social acceptance of green technology emerged in the early 1980s to explore 'non-technical factors' influencing adoption (review in Wüstenhagen et al., 2007). These studies were rooted in a laboratory-derived paradigm from Ajzen and Fishbein (1980) which saw acceptance as determined by psychological attitudes, values, and perceptions of the technology's usefulness (e.g. Davis, 1989).

Carlman's (1982, 1984) pioneering work on wind power found that acceptance was needed on regional and governance levels as well as local, themes further explored by Bosley and Bosley (1988), Thayer (1988) and Wolsink (1987). 'Acceptance' here was not always clearly defined, but generally meant *having a positive psychological attitude to the technology*. The main concern was how to shift public attitudes towards being in favour of visually disruptive technologies.

Wüstenhagen et al.'s (2007) review indicates that this psychological motif was still very much to the fore in such studies by the mid-2000s.

More recently, Lienert et al. (2015) argue that delays to green energy projects are caused by active opposition rather than just attitudes of non-acceptance (cf. Cohen et al., 2014). This represents a shift away from a *psychologically*-based understanding of acceptance, toward an *action*-based understanding, where the notion of power plays begins to emerge. Other studies critique the prevalent assumption that 'NIMBY' (not-in-my-backyard) attitudes drive opposition, arguing there is a complex range of factors involved in social acceptance, including, for example, emotional attachment to the land (Wolsink, 2007; Van der Horst, 2007; Devine-Wright, 2009). Other studies find that even active local opposition usually fails to prevent planned green grid developments but merely slows them down (Cotton and Devine-Wright, 2012; Vajjhala and Fishbeck, 2007) – suggesting the power of local groups is often overridden by that of centralised governance.

In this literature the emphasis is invariably on overcoming resistance: there is little or no consideration of positive moves by locals to *initiate* the incorporation of green technology into the grid.

Further, the agenda of much acceptance literature seems inherently politically conservative: to identify factors causing non-acceptance of developments proposed at higher levels, so that government and developers can anticipate opposition and plan counter-moves to soften it. As expressed by Perlaviciute and Steg (2014), 'Any (sustainable) energy alternative will grind to a halt without sufficient public support, and hence it is important to understand how public acceptability develops, *and how it can change* to enhance sustainable energy transitions' (italics added). The agenda is to find ways to change public attitudes so that plans conceived by governing bodies can proceed. Cohen et al. (2014) consequently develop a model to quantify the compensation non-accepters should be offered for disadvantages caused by energy grid developments, to leave them 'welfare-neutral'. Local groups are here seen as obstacles to green energy rather than as active initiators of green energy developments.

Hence research in the 'acceptance' stream generally uses a 'deficit model' (Shove, 2010), where citizens are seen as lacking the correct attitudes and capabilities to get on board with progress. It does not consider action in the other direction, where locals take the initiative and are a step ahead of central government. Nor does it look deeply into issues of local culture or self-determination that might be infringed upon in this process. This seemed insufficient to understand factors influencing green grid development in a culturally self-aware, economically vulnerable local region that has been something of a forerunner in the promotion of green grid technology.

2.2. A wider concept of acceptance

A more dynamic approach to acceptance is offered in Geels' (2014)