

Transcending community energy: collective and politically motivated projects in renewable energy (CPE) across Europe

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Abstract

Based on an EU-wide empirical survey, this paper proposes the alternative concept of collective and politically motivated renewable energy (CPE) projects that includes different forms of enterprises such as co-operatives and participatory public utilities. In doing so, we intend to take a clearer stance on both organisational and ownership features and the political motivation of these projects. The aim is to overcome the vagueness of the term 'community energy' and to widen the perspective beyond the British context. Mapping CPE projects across different European countries we have identified three development trends and provide a project case study for each trend: the further dissemination of local CPE projects, the formation of regional projects, and the occurrence of urban CPE projects. Countries covered are the United Kingdom, Spain and Germany. We also reflect our findings for the concept of community energy and invite researchers to expand upon our research.

Keywords: community energy; social movements; energy cooperatives; remunicipalisation; energy democracy.

Introduction

With more than 1,000 projects labelling themselves 'community energy' (Seyfang *et al.*, 2013, 2014) community energy can be rightly termed an important feature of energy related activism within the United Kingdom. In fact a wide array of different activities and forms of organisation spanning village hall refurbishments, community-owned wind turbines and 'collective behaviour change programmes' are subsumed in this 'pluralistic sector' (Seyfang *et al.*, 2014: 5). While various British cases have been widely discussed in research, less attention has been given to similar projects and initiatives in other European countries. Similarly headlined debates such as

'Bürgerenergie' ('citizens' energy') in Germany (Radtke, 2013) and 'énergies partagées' ('shared energies') in France (Poize and Rüdinger, 2014) also transport the notion of a new relation between society and energy systems centred on social embeddedness as well as participation and collective effort. Based on the results of an EU-wide survey conducted in 2013 the first aim of this paper is to open up the mainly British perspective on community energy to international research.

Despite its ongoing popularity in policy, activism and research, community energy has been an ambiguous term from the beginning. While Seyfang *et al* (2013: 978) define community energy as 'projects where communities (of place or interest) exhibit a high degree of ownership and control, [and are] benefiting collectively from the outcomes', they admit that it was only 'offering a slippery concept for analysis', although "the "flexibility" of interpretations did work in favour of wide acceptability of the concept of community energy' (*ibid.*). In other words, foregrounding imaginations of community and 'warm-hearted association' (Walker *et al.*, 2007: 78) while avoiding a clear-cut definition has provided the base for the concept's popularity and a certain normative surplus to those who apply it. While we fully acknowledge that the concept has helped to unearth the role of civil society in the British energy transition and that it is 'pragmatically and strategically of value' (Walker and Devine-Wright, 2008: 499), the second aim of this paper is to advance conceptual discussion on grassroots renewable energy projects (Seyfang and Smith, 2007; Seyfang *et al.*, 2014).

Our strategy to do this is to clarify the distinctive character of the 'community' form of organisation. Beside the above definition including input (communities of place or interest), process (ownership and control) and output (collective benefit), other attempts to grasp the notion of community have focused around mobilisation (Bomberg and McEwen, 2012: 436) or the community as 'an own institutional order' (Wirth, 2014: 238). All of these attempts intertwine but also conflate the project itself with the community it is embedded in. It also carries the danger of equating the community with administrative units and thus neglecting those within a community who are not participating. Empirically nine out of ten British initiatives see themselves as local 'communities of place' (Seyfang and Smith, 2013). Beyond this strong localist orientation, critics point to 'community' as a term that might represent different phenomena and somewhat blurs the issue of who benefits from community energy schemes (Bristow *et al.*, 2012).

While we still acknowledge the importance of 'community' as a selling point, we think that in analytical terms other features deserve more accentuation when researching these projects. Firstly, we would direct more attention to how these projects actually work, focussing more on forms of ownership and the organisational features implied. For us, secondly, such a concept should be derived from the motivations of actors and pioneers engaged with 'making things happen' and should be less connected to state political motivations such as the UK government's 'Big Society' agenda (Seyfang *et al.*, 2013: 978). Binding these two together, in this paper we present the idea of collective and politically motivated renewable energy (CPE) projects. Our main argument is that there is a growing sector of renewable energy projects across Europe that are both organised in a collective manner and driven by political aspirations beyond being part of the change or transition to renewable energy. We further argue that the two variables of collective ownership and political aspiration serve well to initially grasp recent trends of the regionalisation and urbanisation of such projects. Following the line of this argument, this paper is divided into the following sections. Section Two gives an overview on the definition of CPE and the related empirical research (Kunze and Becker, 2014). Section Three introduces three trends and case studies representing these. Our arguments will then be summed up by a conclusion and an outlook for further comparative research on CPE.

CPE: Constructing and identifying the ideal type

Centring on ownership and political motivation

In this paper we suggest a new term as a heuristic tool to researching energy initiatives: collective and politically motivated renewable energy (CPE) projects. This concept is derived from two fundamental questions concerning alternative, non-corporate energy projects: how do they function and why are they brought into existence. This leads to an analytical focus on – mainly – formal organisational structures and the motivation of those actors who have founded and who continue to enact these projects. With the aim of accentuating features distinct from traditional forms of corporate and public energy provision, we focus on the issue of collective ownership and a political motivation that goes beyond changing business and technical structures in the energy sector. This, then, is an ideal type based on two variables: collective ownership and political aspiration. Both dimensions were chosen as they connect to recent debates around the political economy of the energy sector and provide a suitable entry point for empirical operationalisation.

A key factor in the collective and participatory organisation of CPE is democratic forms of ownership as reflected in an emerging discussion on energy utilities and generation facilities (Cumbers, 2012; Hall *et al.*, 2013; Moss *et al.*, 2014). These democratic forms of ownership are conceived of as ‘encapsulating all those attempts, both outside and through the state [...] to reclaim economic space’ (Cumbers, 2012: 7) in opposition to corporate structures. In the energy sector these forms mainly encompass energy production and consumption co-operatives as well as new models of state or municipal ownership that highlight participatory provisions (Kunze and Becker, 2014). We have chosen to focus on ownership instead of participation here, as ownership both in its legal and its ‘more emotive sense’ (Moss *et al.*, 2014: 3) carries a stronger notion of control and the owner’s factual entitlement to exert influence upon decision-making and the distribution of revenues produced. Collective ownership in this sense covers the more genuine forms of participation and citizen power as laid out by Arnstein (1969). Focussing on forms of ownership instead of the notion of community provides a threefold advantage: a) it perpetuates the notion of collectivity as in the term ‘community’ without the necessity to constrain it to localist implications or vaguely defined communities of interest; b) it helps to strip the concept of the connections to the British policy context as a prerequisite for comparative research; and c) it can be translated into various legal forms that are fast and easy to assess in empirical research.

Ownership however can only serve as a necessary condition as various cases of bad governance and corruption in relation to public or co-operative ownership have shown. Therefore the sufficient condition of a general political aspiration was introduced to distinguish CPE projects and initiatives from traditional forms of collective ownership. The general argument here is drawn from a critique of most energy and climate governance as post-political and conducted in a merely managerial style (Mouffe, 2005; Swyngedouw, 2011). Against this understanding, CPE projects can be significant when they also represent ‘political contestation, the emergence of alternatives and the realization of change’ (Beveridge *et al.*, 2014: 73). The assumption here is that certain ownership structures such as co-operatives and participatory state ownership do not just ensure member or citizen participation. As Cumbers (2012: 165) argues, public or collective forms of ownership can even serve as a means to achieve wider goals like local community control, distributional justice, environmental sustainability and improved participation. Thus participation through ownership and the possibility to achieve wider political aspirations are interlinked.

We understand that the political motivation of community energy projects has been an important object of research in the past (Jeong *et al.*, 2012; Seyfang and Haxeltine, 2012), but we propose to enhance this feature to become a definitive conceptual element. The political normativity manifest in our definition therefore reflects the conception of community energy projects as 'grassroots innovations' (Seyfang and Smith, 2007) 'grounded in local and collective values [... while] it is often the symbolic and shared practice of green values which brings the benefits' (Seyfang *et al.*, 2014: 4). Such normative goals of alternative energy projects typically comprise at least one of the following: an overall reduction of energy consumption, the protection of biodiversity, sustainable agriculture, more social equity or the empowerment of disadvantaged social groups. Although these themes might appear as common sense in the first place, we uphold that such themes connect energy generation with wider political ideas and contest pre-given market and commodity structures. The challenge for CPE projects starts with the realisation of these aspirations beyond simply listing them in the statutes and at the same time retaining their collective character. This is also an important issue when researching CPE projects.

Research methodology

This article is based on a survey to identify collective and political renewable energy projects (Kunze and Becker, 2014). The survey explored the renewable energy landscape in the European Union (and also Norway, but excluding Cyprus, Luxembourg and Malta) to find best-practice projects regarding political goals and collective organisation. Research was designed as a two-tier process to both identify different organisational models and to account for the normative dimension of single projects.

The first step was to identify and map suitable projects in the EU according to the two dimensions of collective ownership and political motivation. Collective ownership was categorised by variables including the legal form of the organisation, the congruence between owners and users, different decision areas that are subject to membership participation, and provisions to ensure equality among the members. Political motivations were sorted according to various policy fields such as sustainable agriculture, social equity, energy efficiency, and a general orientation towards 'political' understanding and empowerment. A broad sample was compiled using three methods: by an online inquiry using different databases such as the international RESCoop network, French CLER and German kommunal-erneuerbar; via search engine-based desktop research and visiting existing projects' webpages; and through expert interviews with relevant scholars from different countries. This yielded more than one hundred suitable cases. These cases were collected in a database and categorised according to the research criteria. The results were very unevenly distributed across Europe and spanned large-scale production co-operatives, public enterprises, squatting projects and rural empowerment initiatives (Kunze and Becker, 2014).

The second step involved in-depth case studies of 16 renewable energy projects that best met our criteria. Our sample was selected to represent different forms of ownership and different spatial contexts, as well as displaying a broad range of innovation in terms of pursuing politically motivated aims. The 16 case studies entailed qualitative documentary analysis of all available online sources and qualitative interviews with key activists. The aim of this step was to understand how the actors' or members' motivations and aspirations for political change were actually translated into practice and to explore the internal organisation of each project.

Table 1: Examples of CPE projects and sampling process

Country/ Sample	First sample for document inquiry	Reduced sample for in- depth interviews	Selection for this article
Italy	Cooperatives: Retenergie Public utilities: Dolomiti Energia Towns/Regions: Asti, Morgex	Retenergie	
Belgium	Cooperatives: Social Green, Vents du Sud	Vents du Sud	
France	Cooperatives: Bocage Energie Project (Britanny), Parc Eolienne de Beganne Towns: Loos-en-Gohelle, Ungersheim	Ungersheim	
Germany	Cooperatives: FairPla, Windstark Public Utilities: Berlin Towns/Regions: Atterwasch, Lüchow-Dannenberg region, Turnow, Zschadras, Lieberose Others: Lieberose Heather	FairPla, Berlin, Atterwasch, Zschadras, Lieberose Heather	Berlin
Norway	Public Utilities: Akershus Energi Others: NUFU Project of Trondheim University	NUFU	
Sweden	Others: Hilda Quarter, Malmö	Hilda	
Hungary	Village: Told	Told	
Spain	Cooperatives: Guerilla Solar group, Somenergia Others: Can Pascual Community	Somenergia, Can Pascual	Somenergia
Wales	Cooperative: Machynlleth, Awel Amen	Machynlleth	Machynlleth
Scotland	Towns: Moffat Can Project, Gigha, Lewis	Gigha, Lewis	
Bulgaria	Other: Project Boukari, village Shipka		
Portugal	Village: Rural community Moura		

Note: Table 1 displays the reduction of samples in the course of the survey. The initial sample comprised of more than 100 cases.

While Table 1 indicates the sampling process, in this paper we will only portray three case studies as a short illustration of our arguments. The intention is that our work can contribute as a starting point for further comparative research. Of the many different ways of analysing these projects, in the remainder of this paper we will focus on the contribution of our data to the conceptual debate on community energy.

Three cases and what they imply for ‘community’ energy research

In this section we present three CPE projects and ask how their formal organisational structures, political motivation and also spatial extent relate to the idea of community energy. These examples are: the Welsh community of Machynlleth that represents a classic community energy project; the Spanish energy co-operative Somenergia, which has grown into a nationwide organisation; and the attempts of an activist coalition to implement a new participatory energy utility in the city of Berlin. All of these cases envisage a participatory collective ownership structure and are connected to wider aspirations for political change. However, they also differ in terms of how these features are actually spelled out.

Machynlleth: community energy in Wales

Our first example is the Welsh community energy pioneer project in and around the rural community of Machynlleth. The small community is a place of environmentalist tradition manifest in a variety of ecological organisations, notably Ecodyfi, a foundation that is devoted to eco-tourism in the region, and the Centre for Alternative Technology (CAT), an ecological think-tank laboratory that developed the UK's first 'Alternative Energy Strategy' as early as 1977 (CAT, 1977). Inspired by the first energy co-operatives in England and the longer standing tradition in Denmark, the community set up Wales' first collectively owned wind turbine in 2003.

The core organisation to ensure collective ownership was the co-operative Bro Dyfi Community Renewables which was founded to finance the turbine by selling shares to the town's inhabitants. After a fragile start, the local demand for shares finally exceeded supply (Interview 1). It was an offspring of the 'Renewable Energy Investment Club' and the unincorporated association 'Dulas Valley Community Wind Partnership' (Ecodyfi, 2013). This implies a two-step model to ensure participation. While the 'upstream' organisations serve the aim of informing and gathering the community, the co-operative at its core gives the means to participate in terms of ownership. Here members are united under the premise of 'one member, one vote' and also earn and decide over produced revenues. Its members form a sub-community within the community in terms of participation – a relation that gets blurred when simply speaking about community energy.

Concerning the motivation of the project, the overall aim was to provide locally-produced electricity accompanied by attempts to influence lifestyles among the population in Machynlleth and surrounding villages. The first turbine provided most of the energy needed by the Centre for Alternative Technology and, when there was a surplus, some local households in the community were also supplied (Ecodyfi, 2013). At least one third of the revenues were donated to the local community energy fund that was to support all local households in efforts to save energy, for instance, by applying for government programmes to pay for house insulation (ibid.). Further aims of the project included behaviour change and consumption reduction among the town's population, achieved by, for example, providing education on energy efficiency and energy-saving lamps for free (Interview 1). In essence, the project combined local financial participation and energy sufficiency, targeting and challenging given patterns of unsustainable consumption.

Machynlleth was seen as a best-practice example that has inspired many subsequent community energy and CPE projects in the UK (Interview 1; Seyfang *et al.*, 2013; Walker *et al.*, 2010). But Machynlleth also exemplifies the localist peculiarity of most British and European CPE projects. A mainly local set of actors forming a coalition or community of interest has initiated a mainly local project that seeks to both re-invest revenues and to change the local community to a more sustainable direction. Additionally, contacts with other similar projects hint to the processes of networking and horizontal learning that are considered typical for community energy projects in an early 'inter-local phase' (Seyfang *et al.*, 2014). This community project mainly acts locally, although wider societal change is a background motivation.

Somenergia: A nationwide energy cooperative

While locality is a key feature of 90 per cent of British community energy projects as well as most projects on the European continent (Schreuer and Weismeier-Sammer, 2010), there is also a trend towards larger, supra-local structures which are difficult to label as 'community'-based but are still characterised by collective ownership and

political ambitions. Here regionalisation and scaling-up take CPE 'beyond the local'. Existing co-operatives, facilitated by the liberalisation of European energy markets, have widened their field of economic operation providing for clients from various parts of a country (for the Netherlands, see Hisschemöller and Sioziou, 2013). Even in those countries with a lower number of CPE projects, newly established projects have expanded to serve the growing demand for an alternative, green energy provider (Kunze and Becker, 2014). One example of this trend of regionalisation is the rapidly growing Spanish wind co-operative Somenergia.

Somenergia emerged into an almost national structure by attracting a large share of new members outside Girona, Catalonia, its place of foundation. Established in 2010, with some 17,000 members in late 2014 (Somenergia, 2014), Somenergia stands out internationally as a result of both their political determination and their large collective and participatory formal structure, rendering it an excellent showcase for supra-local CPE – and the linkage between participation and political aspirations. From the very beginning the co-operative was committed to an environmentalist and strictly participatory code (Interview 2). For Somenergia, the core values entail political and financial participation of all members, autonomy and independence for local groups, as well as education and collaboration with social movements on energy matters (Somenergia, 2013). The co-operative has developed a federalist structure consisting of a central board and local sub-units that exist independently and autonomously in choosing their focus of activity, for instance, education, project development or anti-fossil energy campaigns (Interview 2). While these 'political' activities are decided upon at the grassroots or local level, the nationwide existence of Somenergia poses a challenge to the existing oligopolistic structure of the Spanish energy market (ibid.).

Local groups can be found across the entire country, including the Canary Islands (Somenergia, 2014). They are incorporated through the General Assembly, which is constituted once a year and follows the previously mentioned co-operative rule of 'one member, one vote'. Despite huge membership numbers equal voting was smoothly conducted using video streaming for a digital assembly in 2013 to spare costly travel and related emissions (Interview 2). Here organisational innovation has kept up with internal challenges while still securing collective ownership and a political orientation in participatory processes.

When trying to identify 'the community' in Somenergia from a classic community energy perspective one would portray the co-operative as a mixture of a community of interest and various communities of place. For instance, each local unit is understood as a 'point of meeting and participation of the members in a concrete geographical area' (Somenergia, 2014). It is possible to argue that it is the shared interest in renewable energy generation that brings these various local groups and thousands of members together. However, establishing the membership of Somenergia as a community of interest would not reveal much about how this community is actually kept together and how participation and the reproduction of the community takes place in practice. In addition, speaking of community might be misleading: among different groups there are different politics of belonging as for example in the debate whether Catalan or Spanish should be used as the language in meetings in Catalonia (Interview 2). Portraying the co-operative from a CPE perspective instead shows how these divides are bridged by institutionalizing a shared purpose (Rao et al., 2000).

The Berlin Energy Roundtable: A new form of state ownership for sustainable energy governance

Our survey of CPE projects has found that the transfer of the ideas of collective renewable energy to the larger cities can be described as a third spatial trend (Kunze

and Becker, 2014). There are two sides to this development. First, local collective energy initiatives are often welcomed by city officials when they fit well with existing narratives of environmentalised city marketing (Beal, 2012). Second and more in line with our emphasis on the political character of CPE, there are campaigns to assert influence on the development of urban energy governance from the vantage point of social movements (Rao *et al.*, 2000). Here it is worth noting that a city poses new challenges for the idea of community energy as both urban life and infrastructure display an increased complexity and diversity. This point is reflected in Ferdinand Tönnies' (1957) thinking about the community-society divide that differentiates between small, non-anonymous and typically rural communities and societies that are anonymous and typical of modern life in cities. Our example of a social movement coalition in Berlin that eventually failed to win a referendum on a participatory energy provider, gives a model of how a politically motivated and collectively enacted energy utility might have looked in an urban setting.

Unlike the preceding case studies, the objectives here were not limited to the development of one particular organisation, but aimed at a general regulation of energy at a city-wide level. As in many German cities, the long-term contract (usually two decades) for the concession to operate Berlin's electricity network is due to end by the end of 2014. A social movement coalition formed as early as 2011 to push for a remunicipalisation of the grid and consequently the entire energy supply (Moss *et al.*, 2014). This coalition, the 'Berlin Energy Roundtable' (Energietisch), encompassed a wide range of actors from large environmental organisations, small NGOs, and leftist activist groups to anti-gentrification initiatives and some professionals from the field of renewable energy (Interview 3). In opposition to the city government, it was successful in collecting over 220,000 signatures, which was sufficient to secure a referendum on the remunicipalisation of the energy network and the foundation of a new participatory public utility. The coalition eventually was not successful, missing the required quorum of an approval of 25 per cent of the electorate by only 21,000 votes (0.9 per cent, Landeswahlleiterin Berlin, 2013).

The concept of the Roundtable envisaged a number of stipulations which would have embedded a strong participatory and normative approach in the (proposed) power utility. These included public meetings on a borough level, the public availability of core documents and an extended steering board. The latter would have been made up of one third from the city council, one third from the utility's employees and the final third would have been elected directly by Berlin citizens (Berliner Energietisch, 2012). Secondly, the concept made an 'ecological orientation' mandatory, meaning the explicit aim to move to 100 per cent renewable energy provision. Additionally, the reduction of overall consumption was inscribed as a 'central business objective' (*ibid.*). Thirdly, the draft called for 'social arrangements' in a tariff policy that would have sought to prevent energy poverty. All of these ideas were refined in a process of grassroots democracy and decision-making by consensus (Interview 4). These three dimensions of a 'democratic', 'social' and 'ecological' energy provision stirred a wider public debate and posed a challenge to both the city's government and the traditional mode of secretive and neoliberal governance that has characterised previous processes of awarding grid concessions (Becker *et al.*, 2015).

While the ideas of the Berlin Energy Roundtable reflect the dimensions of CPE projects, it would be difficult to grasp them from a community energy perspective. Indeed, as mediated through state ownership any community practice would appear more indirect and channelled through formal participatory requirements. On the other hand, one could argue that Berlin's entire citizenry would become a stakeholder. However, this would in strictly legal terms exclude those inhabitants of the city who do not hold the right to vote. It would also be imperative to actually make use of the

opportunities for participatory procedures to bridge the gap between the state and single citizens. Nevertheless, and compared to co-operative models, any citizen could theoretically have seized their right to articulate an interest without the barrier of acquiring membership shares. The lesson we have derived from the case of Berlin is however not to think about 'imagined communities' in energy terms (Barnett *et al.*, 2012), it is rather to underscore that we should not unnecessarily narrow down the focus of alternative energy projects by only focussing on small-scale community projects and non-state forms of ownership. This is especially relevant for larger-scale projects at the urban or city level.

Conclusion

This paper has introduced the idea of collective and politically motivated renewable energy (CPE) projects as a heuristic tool to broaden the debate on small-scale renewable energy. Unlike the notion of community energy, CPE is neither restricted to the communal or local level nor connected to British policy. In the CPE concept we have combined two possible characteristics of an organisation: a political motivation and a collective character put into practice. We define CPE by the necessary condition of collective organisation schemes in terms of ownership, benefit distribution or decision making. Prevailing political motivations or normative aspirations appealing to, for instance, consumption reduction, sustainable land-use or social equity serve as a sufficient condition. On methodological grounds, we have chosen this combination to account for the motivation of actors and people establishing CPE initiatives, and as a means to identify suitable projects by their collective formal structure. Our aim is to arrive at a conceptualisation that takes the motivations of the projects themselves as a starting point, which preserves community energy's normative appeal and its strong foundation in ecological values. We argue that this concept can enlighten community energy research and allows for the inclusion of non-local and participatory public projects. This in turn widens the number of policy options in the energy sector for both social movement and state actors (Beveridge *et al.*, 2014).

CPE projects continue to emerge across Europe, and we argue that the debates on grassroots innovations (Seyfang and Smith, 2007) can benefit from a careful international look at the present situation. The regionalisation and urbanisation of collective renewable energy projects as seen in the cases of Somenergia and Berlin renders it even more difficult to define who or what the referred community should be. When we talk of ever more complex and growing structures the cosiness implied in the term 'community' is no longer useful, while the aims of the organisations to produce renewable energy and to forge wider societal change remain as intact as their collective form of organisation. Revisiting our empirical data from different countries, collectivity as an expression of a specific idea of organisation by membership, benefit sharing or participatory decision-making appears more suitable for a clear empirical analysis than the loosely defined term of community. We do however not intend to entirely replace the notion of community energy as it has become an established term in political discourse highlighting opportunities for alternative forms of organisations in the energy sector. In suggesting the CPE concept, we rather want to inspire conceptual debate about how such alternative energy projects work and to enable internationally comparative research.

The concept of CPE and our results also connect to the discussions on energy geography as an emerging field of academic interest (Bridge *et al.*, 2013). This debate has been widely influenced by attempts to spatialise transition and strategic niche management research (Coenen *et al.*, 2012). In this context CPE research foregrounds issues concerning grassroots innovations (Seyfang and Smith, 2007). Finally, an

assessment of CPE in terms of systemic impact on uneven development, and on social and environmental justice would be equally conducive (Bickerstaff *et al.*, 2013). As the mapping of CPE and an introduction of exemplary cases is only a start in research, we invite representatives of geography and other disciplines to expand research on the idea of CPE, to further develop the concept and to deepen our empirical understanding of this transnational phenomenon.

List of Interviews

Interview 1 – Representative of *ecodyfi*, Machynlleth, by Conrad Kunze, 23 April 2013.

Interview 2 – Representative of Somenergia Management Board, by Mihaela Vancea, 2 May 2013.

Interview 3 – Berlin Energy Roundtable spokesman, by Sören Becker, 27 August 2013.

Interview 4 – Berlin Energy Roundtable grassroots activist, by Sören Becker, 26 August 2013.

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