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Energy Cooperatives as a Form of Workplace Democracy? – A Theoretical Assessment

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1 Introduction

The transformation of the energy sector in Germany towards a broader use of renewable energy and more decentralization has provided an opportunity for the entry of new market actors and the emergence of various organizational models in the energy sector. An organizational form that has recently drawn particular attention – especially in the context of citizen participation as a form of cooperation, mutual commitment, consensual decision-making, and local energy policy – is the energy cooperative. Cooperatives are often regarded in the literature as a form of workplace democracy. This article will examine more broadly whether the cooperatives in the German energy sector can be seen as a form of economic democracy, on three levels of analysis: the micro, meso and macro levels.

As the first cooperatives emerged in the energy sector by the end of the nineteenth century, the cooperative as an organizational form has a long tradition in Germany. While the number of cooperatives fell significantly from the middle of the twentieth century, with its focus on fossil fuels and nuclear energy, the abovementioned political decision to prioritize renewable energies with associated possibilities for decentralizing energy production has revived the phenomenon of cooperative organization in the energy sector and has led to the resurgence of a variety of forms (Yildiz 2014: 680).

However, after the number of energy cooperatives had increased significantly in the first decade of this millennium, the dynamic development in the number of cooperatives has slowed down recently and by the end of 2014 there were 973 energy cooperatives listed in the commer-

cial registry. The decline of the growth of energy cooperatives from more than 170 per year from 2011–2013 to about 60 in 2014 can be explained by various reasons:

□ Energy cooperatives have implemented projects mainly in the field of photovoltaics. Here, the latest amendment of the Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG) has brought hurdles into being for new projects, such as a reduction in feed-in tariffs for solar energy or plans for the introduction of tendering procedures for photovoltaic projects that involve risks to participants, require special knowledge and therefore discourage potential project developers.

□ The realization of wind farms, another important field of activity of energy cooperatives, has also become more difficult as investments in wind farm companies are exposed to legal uncertainty after the planned amendment of the Investment Code (Kapitalanlagegesetzbuch, KAGB). According to this, there are plans to change the requirements with regard to financial statements, as well as formal requirements for setting-up and running an energy cooperative, which at the moment discourages project developers from initiating energy cooperatives.

□ Renewable energy projects in the heating sector compete against fossil fuel-based projects and the prices of resources such as oil and gas are currently low.

□ The development of new business models requires time and expertise so that a further diffusion of cooperatives in the energy sector is also restricted by a lack of know-how in assessing new fields within the energy sector (Müller/Holstenkamp 2015: 4).

Because the initiators of energy cooperatives tend to adopt the cooperative model with reference to local legislation and context – for example, specific features, assets and limitations of this model in the field of renewable energy – and, furthermore, cooperatives in general emerged in the nineteenth century mainly within the working class to offer better opportunities to workers (Huybrechts/ Mertens 2014: 195–196), it seems worthwhile to analyze whether energy cooperatives serve as a form of workplace democ-

racy and whether this characteristic might help new circles of users of the cooperative business model to gain access to the energy sector.

2 The Role of Cooperatives in the Energy Sector

As the descriptions in the introduction indicate, renewable energy cooperatives have been brought into being for various reasons and depend on several factors that influence their comparative advantage in contrast to other organizational forms in the renewable energy sector. In the following, we present a short analysis from an organizational, meso-level and membership perspective in order to assess why and under what circumstances project initiators chose to organize their renewable energy projects as an energy cooperative, which we see as a form of organizational democracy.

2.1 Energy Cooperatives as an Organizational Form

In the context of the theory of the firm, different subsets can be used to assess cooperatives as an organizational form. From a transaction-cost perspective, an economic exchange can be organized within a spectrum of coordination mechanisms, ranging from market-based to hierarchical organization. According to this classification, cooperatives are considered to be hybrids. This is due to their characteristic that members pool some (but not all) of their qualifications and resources in the cooperative enterprise's business – which corresponds to a hierarchical organization – but at the same time, members of a cooperative remain economically independent, and therefore can use their qualifications and resources for other tasks, a feature characteristic of market transactions (Yildiz 2013: 181–182).

In detail, several features exemplify the hybrid character of cooperatives in general and consequently also the hybrid character of energy cooperatives. First, the actors involved make fundamental operational decisions jointly. Second, members' resources and qualifications are pooled so that advantages can be generated from extended market shares, transfer of competencies, and sharing of scarce resources. Finally, the involvement of multiple actors offers risk-sharing possibilities. The latter feature is particularly relevant in the case of energy cooperatives as it allows citizens to participate actively in local energy policy, without bearing extensive economic risks (Ménard 2004: 351–352; Yıldiz et al. 2015: 66).

However, the involvement of multiple actors in an energy cooperative can also give rise to various problems. First, internal organization costs are higher compared with other business models relevant in the context of renewable energy infrastructures. This is because active participation in a cooperative and its administrative bodies demands more effort from its participants to control the management in charge. Furthermore, the decision-making process within a cooperative based on the one-member/one-vote principle can aggravate the so-called influence-cost problem where cooperative members have to make material and immaterial efforts to influence decision-making in pursuit of their own particular interests. This is particularly relevant to cooperatives with a heterogeneous membership structure. On the other hand, the organizational costs explain why the cooperative model is particularly significant in the field of photovoltaics and wind energy where the set of people involved is fairly homogeneous compared with bioenergy infrastructures (Yildiz 2014: 681).

This problem of heterogeneous actors is also a critical point from the perspective of property rights theory (also referred to as incomplete contract theory). Here, property rights are the most effective mechanism for providing actors with incentives to create, maintain, and improve assets (Chaddad/ Cook 2004 :349). Starting from this assumption, the findings of property rights theory show that in case of specific investments and incomplete contracts, the so-called hold-up problem worsens the position of investors ex post, therefore decreasing their incentive to invest ex ante (Grossman/ Hart 1986; Hart/ Moore 1990). According to this, the organizational form of the energy cooperative provides comparatively low investment incentives because shared property rights in a cooperative imply strong difficulties in case of contractual incompleteness (Higl 2008: 34–35).

Besides the insights we have presented from two subsets of the theory of the firm, energy cooperatives also play an important role from a meso-level economic perspective. The following section briefly discusses two aspects of the role of cooperatives in markets.

2.2 The Role of Energy Cooperatives in Markets

Structural approaches rooted in industrial organization investigate what kinds of functions cooperatives perform for the economy as a whole. A first question analyzes the roles of cooperatives under conditions of imperfect competition and in terms of the upstream market power of pro-

cessors and retailers. Market power imbalances often exist in the electricity generation sector in most European countries. For the case of Germany, the largest four companies in Germany – Vattenfall, EnBW, RWE, and E.ON – account for more than 80 percent of the retail market. Nonetheless, the shares of these four dominant companies are decreasing through an influx of small-scale renewable energy generation (Schiffer 2011: 284–285; Yildiz et al. 2015: 67). Thus the emergence of cooperatives in the energy sector can partly be explained by the desire of consumers to better control the origin of their energy (as far as production is concerned) as well as its price (in the case of supply). Hence, renewable energy cooperatives can help to reduce market concentration (Huybrechts/ Mertens 2014: 203).

A second aspect concerns quality uncertainty and consumer demand for electricity from cooperatives. There are indications that the German transition towards a sustainable energy system is, to some extent, driven by consumers. Similar to George Akerlof's famous example of quality uncertainty and information asymmetry in the market for used cars (Akerlof 1970), it is not easy for consumers in the electricity sector to distinguish quality differentials for electricity. This may result in adverse selection, which ultimately bears the risk of a complete market failure. This can be especially true if aspects of the production process are an essential factor in consumer valuation of a good, and also if, as with household electricity, the good reaches the consumer in a homogeneous quality, independent of the particular supplier chosen. In other words, the credence good-character of renewable energy does not yield information on the production process, thus creating risks of adverse selection and fraud on the supplier's side. Consequently, various forms of transparency initiatives, signaling or guarantees on the supplier's side have been realized; for example, providers of renewable energy spend high sums on elaborating how exactly their electricity is produced, seeking to establish trusting relationships with consumers. With regard to energy cooperatives, integrating transactions into more hierarchical organizational forms, ultimately resulting in the identity of owners, producers, and processors might reduce costs resulting from information asymmetries, significantly avoiding adverse selection (Yildiz et al. 2015: 67–68).

2.3 Energy Cooperatives as a Social Phenomenon

A first insight into energy cooperatives from a social perspective concerns the social acceptance of renewable energy infrastructures. Here, energy cooperatives may play a

role in fostering social acceptance of the construction of energy production facilities as they engage citizens directly in local energy policy through co-ownership. They also provide local energy policy with a democratic dimension, and avoid criticism related to the appropriation of public resources because purely profit-maximizing shareholders, such as established energy suppliers, are normally absent. In addition, the feature of citizen-owned property rights is likely to enhance the cooperative model's credibility and trustworthiness as involved citizens are thus more likely to engage in collective efforts because these efforts will not be appropriated by other actors (for example, external shareholders) (Huybrechts/ Mertens 2014: 204–205).

Accordingly, these features also come to the fore when membership characteristics and motives are analyzed. Here, empirical studies indicate that cooperative membership generates trust in energy production. Consequently, members express interest in becoming involved in additional renewable energy projects and generally favor a more active citizenry. Furthermore, empirical results also indicate that participation in energy initiatives derives its motivation from long-term social concerns and not exclusively from profit-seeking. Finally, as a result of beneficial effects on capacity building, empowerment, and social capital, members in energy cooperatives work from a sense of belonging, personal identification and commitment to the initiative. Hence, this finding refutes the idea of a silent uninvolved membership acting as passive investors in other forms of community energy projects, such as fund-based business models (see, for example, Walker/ Devine-Wright 2008). However, citizens involved in larger energy cooperatives also express concerns such as the lack of transparency in the operations of governing bodies, finding that the guiding policies behind operations are partly not discussed openly enough with the wider membership in larger energy cooperatives (Radtke 2014: 240–242).

To conclude, energy cooperatives are, from a social perspective, particularly related to the general topic of climate change and environmental protection and in this context provide a platform in which participation, codetermination, trust, and spillover effects of these features – such as a rise in social capital – play a determining role in an individual's decision to join an energy cooperative.

So far, the analysis of renewable energy cooperatives has revealed several economic and social aspects that help us to understand the circumstances under which project initi-

ators chose to organize their renewable energy projects as an energy cooperative.

In order to answer the initially asked question of whether energy cooperatives can serve as a form of workplace democracy, it is necessary to address the topic of workplace democracy in the context of cooperatives in general. Therefore, the following section deals with this task.

3 Cooperative Sciences and Workplace Democracy

3.1 An Introduction to Workplace Democracy

Participation in organizations such as corporations and associations has been widely discussed and analyzed in the academic literature, particularly in the context of cross-societal developments and policies. In the wake of the forming processes of industrialization, which resulted in new occupational fields and work-spaces, worker involvement in the company began to play an important role. In this context, central questions addressed included social aspects, such as working conditions, and general questions, including such democratic considerations as the idea of sharing assets among all stakeholders in a company or other forms of worker empowerment (see, for example, Zwerdling 1980; Lindenfeld/Rothschild-Whitt 1982; Mason 1982; Cheney 1995; Schweizer 1995; Foley/Polanyi 2006). Accordingly, the idea of workplace democracy relies on the concept that democratic principles should apply not only to the political system and public affairs, but should also be extended to private and civil society, as well as the business sector (Pateman 1970). Underlying this idea is the basic assumption that mutual influences of societal levels find their expression in various forms of codetermination, cooperation, collaboration, and participation, which in turn have an influence at micro (individual) level, meso (organizational) level and macro (societal) level (Wilpert 1994: 304 ff).

Different approaches define workplace democracy as a form of influence on decision-making processes in associations, organizations, and corporations by their members (for example, workers) through institutionalized forms of involvement, participation, and codetermination (for example, work committees, councils; for example, Heller 1989; Wilpert 1994; Addison 2009). Starting from this general definition, the influence of workers, employees, and other members in organizations can be subdivided into forms of direct (participative management and workgroup) participation, and indirect participation, such

as intermediate decision-making, with decisions being reached without prior consultation (Wilpert 1994: 303). Further specifications distinguish between mental (preoccupation with decision-making processes) and real participation, as well as between delegative participation, corresponding to the principles of representative democracy, and direct participation, which is characterized by an immediate articulation of opinion and direct involvement in internal decision-making processes (Greifenstein et al. 1993: 30).

Summing up, the concept of workplace democracy is characterized by the following elements:

- it strengthens employees' rights and possibilities of codetermination and participation;
- ideally it helps to emphasize aspects such as collaboration, equality, worker influence, fairness, transparency, and procedural justice within an organization;
- it can also highlight dynamics regarding intra-organizational power, clashing interests, conflicts and oligarchic tendencies.

Starting from this brief overview of the notion of workplace democracy, it is worth analyzing how this concept is realized within cooperatives, the organizational form that is probably most closely associated with democracy.

3.2 Cooperatives and Workplace Democracy

The establishment of workplace democracy through the cooperative model has a long tradition. Several cooperative studies have focused on aspects of participation and democracy. In fact, these patterns are an integral part of cooperative research (for example, Hales-Mabry 2003; Katz 2012; Booze 2014). This is due to the characteristic of cooperatives that their members normally have equal voting rights. Strong forms of codetermination thus have a prominent position in the formal construction of cooperatives. In addition, cooperatives are often described as an institution created from among and by people driven by a socialistic vision, explicitly wanting to work together equally and to share the ownership rights of productive assets. Hence, cooperatives can be understood as an extraordinary example of the realization of workplace democracy that has been discussed in numerous examples from different countries, for instance, the Scandinavian countries, Italy,

and the countries of former Yugoslavia (for example, Baylis 1976; Jones/ Svejnar 1985; IDE 1981/1993).

This perspective on the subject of workplace democracy within cooperatives can also be supported with empirical insights. For example, an empirical analysis by Weber provides heterogeneous results on the question of whether cooperatives correspond to their attributed socio-political tasks in terms of their characteristics (for example, voting rights, commitment and pro-social orientation of involved actors). According to this, there indeed exists a positive correlation between participation and pro-social decision-making behavior in cooperatives. Furthermore, identification with the values and goals of the cooperative is also high. Finally, there is a negative correlation between the level of participation and the level of job dissatisfaction, which supports the intuition that a high level of participation has positive impacts on an individual's job satisfaction (Weber 2004: 468).

Drawing on the basic insights of this section on workplace democracy in general and from the perspective of cooperatives, it is now our task to bring these findings together with the findings on the characteristics of energy cooperatives in order to analyze whether energy cooperatives can be considered a form of workplace democracy.

4 Are Energy Cooperatives a Form of Workplace Democracy?

In order to address the question of whether energy cooperatives are or can be a form of workplace democracy, one has to start with the characteristics of energy cooperatives (see also Section 2).

Energy cooperatives as an organizational form are particularly relevant in areas of activity such as solar and on-shore wind energy, which normally produce energy in a decentralized manner with small-scale production facilities. In these fields, operational tasks such as control of the technical facilities and energy production process, as well as the maintenance of technical equipment are comparatively easy and require little manpower. Consequently, operational control is often in the hands of the members themselves – mostly private individuals – and maintenance is often ensured by service companies providing standardized maintenance services. As a result, most energy cooperatives normally don't have any or only very few permanent employees (see, for example, Yildiz et al. 2015).

As a consequence, an analysis of workplace democracy within energy cooperatives has to assess which activity fields of energy cooperatives might require a higher number of employees. In this regard, alongside production cooperatives one can distinguish between distribution cooperatives, which operate local electricity grids or local district heating networks; trading cooperatives, which include cooperatives that primarily generate a spread by buying and selling energy (or energy resources); and energy cooperatives, which do not fit in the previously mentioned categories, such as service companies that provide services related to the renewable energy sector and whose members are cooperatively organized (Yildiz et al. 2015: 62).

Thus, cooperatives providing services in the field of renewable energy seem to be most relevant for the issue of workplace democracy within energy cooperatives in its original sense, as described in Section 3, as they could have a larger number of workers who are at the same time members of the cooperative. In this context, different service providers in a region and their associated workers could pool their skills and at the same time foster collaboration and worker influence. Besides this already existing field of activity likely to be relevant for workplace democracy, future technological development could bring into play new areas of activity for renewable energy in which cooperative members are at the same time also employees of cooperatives. Examples of such technological developments are smart grids and such things as smart metering and smart cities.

To conclude, the role of energy cooperative members is different from the traditional role of workers in a company. Therefore energy cooperatives in their current form and their members do not have much in common with the normative ideals of workplace democracy (see Section 3). However, general aspects regarding active membership, codetermination, and participation remain key characteristics of energy cooperatives. Hence, it is interesting to analyze the effects of energy cooperatives on democratization from a meso- and macro-level perspective.

From a meso-level perspective, cooperatives in the energy sector are an explicit vehicle for strengthening democratic participation within the organization. In contrast to other business models in the energy sector, energy cooperatives are chosen explicitly to ensure that local actors are able to participate in a local energy project and can express their opinion even without large investments. This is realized through characteristics such as the one-man/one-vote

principle and the fact that most members of the administrative boards of cooperatives work voluntarily and are normally chosen from among the cooperative members (see, for example, Huybrechts/ Mertens 2014; Yildiz 2014). Consequently, it is not surprising that empirical studies from Germany show that members of energy cooperatives agree with the statement that energy cooperatives are an organizational form possessing democratic characteristics. Furthermore, members emphasize the transparency of the organization. Members feel well informed with regard to their energy cooperative's organizational and operative issues which, in turn, establishes a high level of trust among cooperative members. Thus, the characteristic ideal of workplace democracy that brings together different levels of management within an organization – which is crucial for effective participation practices beyond formal regulations – is also given in the context of energy cooperatives, although in this context this characteristic doesn't concern workers as members but as local citizens (see, for example, Radtke 2013).

From a macro-level perspective, the ongoing debate about climate change and the desire of citizens to participate in this debate is a central determinant of individuals who participate in energy cooperatives. Empirical studies show that energy cooperative members often demand more citizen participation in society at large and therefore support the further deployment of local community initiatives in order to promote such participation in the context of climate change and energy policy (see von Blanckenburg 2014; Radtke 2015). However, criticisms of the aspect of participation within energy cooperatives can also be made from a macro-level perspective. Empirical studies in Germany show that an overwhelming majority of energy cooperative members are men. In addition, younger age-groups (younger than 35 years of age) are underrepresented. Other trends can be found concerning the educational backgrounds and income structures of those involved. The majority of energy cooperative members are university graduates. As a consequence, higher income groups with an individual monthly gross income over 2,500 euros are overrepresented (see Yildiz et al. 2015: 64; see also Fraune 2015; Radtke 2015).

Hence, the socio-demographic characteristics of energy cooperative just mentioned do not correspond to the typical socio-demographic structure of workers in companies in the industrial sector, in which the topic of workplace democracy is particularly prominent as it is originally rooted in this context, but rather to the socio-demographic struc-

ture of civil society associations, political parties, and trade unions. Consequently, the member structure of energy cooperatives corresponds to general findings on the demographic characteristics of individuals who are socially and politically active and participate according to socioeconomic status (SES) (see, for example, Verba/Nie 1972; Verba et al. 1978/1995; Schloszman et al. 2010). This in turn might be considered critical from a macro perspective as women, non-graduates, and younger citizens are strongly underrepresented in energy cooperatives, which might shed a critical light on the qualities of energy cooperatives to foster societal democratization in general.

5 Conclusion

The analysis presented in this paper shows that energy cooperatives cannot be considered a form of workplace democracy in its original sense as the role of energy cooperatives members is different from the traditional role of workers in a company. Nonetheless, energy cooperatives promote democratization in various other ways. As an organizational form, energy cooperatives entered the energy sector in response to citizens' need for decentralized energy supply. In addition, they allow citizens to participate in local energy policy and foster codetermination in this context. However, most energy cooperatives are composed of a rather homogenous group of middle-aged men with a graduate background so that the societal effects on democratization are limited at the moment.

With their established fields of activity subject to legal restrictions and other barriers that hinder further development, it will be interesting to see whether energy cooperatives can access new activity fields which in turn might bring the question of workplace democracy more to the forefront. Energy cooperatives in the sector of energy services, as well as in the context of recent trends towards interconnected and network-based smart systems seem to be particularly relevant. In this context, energy cooperatives as an organizational form could be part of a holistic approach to integrate different concepts for sustainable urban planning, interconnected neighborhoods, mobility and transport solutions based on electromobility, and sustainable buildings (see Smart Energy Idea by Servatius et al. 2012). Thus, starting from socioeconomic movements such as the "Transition towns" (for example, Hopkins 2008; Merritt/ Stubbs 2012) and followed-up by current trends towards "Smart cities" (for example, Tang 2009; Haas 2012), energy cooperatives might contribute to the establishment of participative and democratic governance ap-

proaches and thus promote the ideals of workplace democracy in a broader sense in these future living environments.

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