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**Title : Orient and activate : the cooperative renewable energy projects at the test of the market. Denmark, France and the United Kingdom in a multi-level comparative perspective.**

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### **Abstract**

“Rather than voicing their dissatisfaction with incumbents, contentious actors may also choose to exit dominant organizations altogether and create new market alternatives (...) The production of a new market or organizational form involves reimagining the possibilities to which markets may be put to use. Moreover, because new organizational forms are often resisted by dominant incumbents and may rely on different institutional logics, entrepreneurs must organize collectively and mobilize their shared resources to establish the rhetorical and material infrastructure of new organizational forms” (King and Pearce, 2010: 257).

As introduced in the quote below, the creation of alternatives through new organizational forms is an avenue taken by social movements when it comes to develop contentiousness within markets. My thesis analyses an instance of such movements that “contribute to the rise of new market actors and categories” (Balsiger, 2016:240): the renewable energy cooperatives.

Such civic initiatives are groups of individuals who typically develop their own renewable production units at a local level, alone or in cooperation with a local authority and/or with a commercial developer. In some cases, they also try to expand or promote their model by supporting similar initiatives of localized, renewable electricity generation, building networks, or seeking vertical integration in the production-distribution process. These organisations present a certain degree of hybridity because they “simultaneously engage in activities typically performed by three distinct organisational forms – community groups, environmental NGOs and corporations” (Huybrechts and Haugh, 2017: 8). Citizen mobilisation, environmental activism and income generation from energy production, activities usually carried out by three

separate organisations, are brought together by these initiatives. They borrow from community groups by emphasizing local political participation but they also borrow from green NGOs and from corporations by supporting renewable energy and by looking for income generation related to energy generation. Renewable energy cooperatives promote change within markets through the idea of energy democracy that link decarbonisation with changes to who controls the means of energy production and distribution with popular sovereignty, participatory governance and civic ownership as key dimensions (Szulecki, 2018). They are an example of movements willing to reconfigure material flows (Schlosberg and Coles, 2016).

### **Literature review**

Scholars working on such civic energy organizations tend to either offer ethnographic descriptions of local projects or macro analysis of public policies. The former helps us to have a better knowledge about the internal dynamics of community local groups but rarely broaden their analyses to more than two or three projects nor do they try to bring the reflection at the meso or macro level, by analysing interactions with the energy system (Papazu, 2016). The latter makes a significant contribution to the institutional and structural conditions affecting cooperative energy development but rarely look at the interplay between specific cooperative projects and public policies (Koji et al, 2018). By focussing on the micro scale of analysis, ethnographic approaches do not pay enough attention to the “political constraints” (Bayulgen and Ladewig, 2017) that such civic initiatives are facing (Van Veelen, 2018) while macro scale analysis tend to underestimate the “innovative activities” (Seyfang and Smith, 2007) of cooperative energy initiatives (Hall et al, 2016). Both types of work struggle to explain the contrasted development of cooperative energy in Europe and the dynamics of such initiatives within nation States. Another weakness of this literature is related to his historical viewpoint with most scholars having a short-term perspective which produces analysis that tend to overestimate the stability of national contexts (e.g comparative research on green NGOs and anti-nuclear movements influence on wind power development emphasizing that grassroots organizations are supported by domestic politics in Denmark and alienated in the Netherlands and the United Kingdom (Toke et al, 2008: 1139).

However, scholars working on cooperative energy showed us that having a long-term perspective allows to discover new findings (Hvelplund et al, 2009) and that the “implicit division of labour between economic sociology and political economy” (Boyer, 2007 : 16), between public policy analysis and social movement studies can be overcome by having “a causal consideration of structural factors with attention to the dynamics and ideas within the movements themselves” (Doherty and Hayes, 2011 : 547), by using “an analytic framework that includes both agency (...) and structural or general contextual conditions” (Hess and Satcher, 2019 : 667). Inspired by these pieces of work that bring together structure and agency

dimensions, political economy and social movements perspectives, my thesis tries to offer solutions to the methodological problem mentioned before with the purpose of explaining the dynamics of cooperative energy in Europe.

### **Research design and methods**

Data used in the thesis stems from a set of both qualitative and quantitative empirical fingerprints. The former includes eighty semi-structured interviews with citizens involved in organizations developing renewable energy projects, policy makers, civil servants from energy agencies, corporate wind power and photovoltaic developers as well as participant observation at policy meetings organized by local and regional institutions, general assemblies of energy cooperatives, meeting of organizations network supporting citizen groups involved in renewable energy development. Documents such as public hearing transcripts, parliamentary debates, policy papers from various stakeholders were also analysed. Quantitative data include a database listing key characteristics of cooperative energy projects installations in the three States. Both types of data have been analysed through process tracing which is a distinct case-study methodology that involves tracing causal mechanisms that link causes (X) with their effects (i.e. outcomes) (Y) by using empirical fingerprints that allow to identify pattern, sequence and trace of a given social phenomenon (Beach, 2016; Beach and Pedersen, 2013).

To do so, our research design combines three scales of analysis: a macro level looking at national public electricity policy regimes, a meso level looking at the collective organizations representing the interests of cooperative projects, and a micro level comparing nine cooperative renewable energy projects on the ground (map 1). To study the latter, I used a similar approach to the advanced preparation fieldwork (APF) developed by Boudet and McAdam on their work about opposition against energy projects in the United States. The APF involves two substantial online data-collection efforts per case that in turn, preceded and served as the basis for an intensive seven-to-ten-day traditional fieldwork visit to the community in question with semi-structured interviews.

To select the three national cases and the nine cooperative organizations, I used the possibility principle. It “holds that only cases where the outcome of interest is possible should be included in the set of negative cases; cases where the outcome is impossible should be relegated to a set of uninformative and hence irrelevant observations” (Mahoney and Goertz, 2004: 653). Based on this principle, we have selected States where the development of cooperative energy was possible but unlikely (France and the United Kingdom) and cooperative organizations that initiated projects but fail to realize them. Indeed, Denmark, France and the United Kingdom are characterized by scholars as different governance systems of the energy sector (Oteman, Wiering and Helderma, 2014; Szarka, 2007; Mitchell, 2010):

- a market-oriented system with economic incentives that are tailored towards preferably larger market parties (economics of scale) and therefore leaves little room for projects that are non-profit or small-scale: United Kingdom;
- a state or bureaucratic system is guided by hierarchical control with the government as dominant actor: France;
- a community-oriented system leaves room for decentralized policy and local variation tailored to specific circumstances, preferences or dominant ideas within the community: Denmark.

By choosing “negative” or unsuccessful” cases, I agree with the assumption made by McAdam and Boudet saying that “the overwhelming methodological injunction to select successful instances of mobilization rather than some other empirical phenomenon for study—for example mobilization attempts or, as in our case, communities at risk for mobilization – only reinforces the tendency to see movements as more frequent and more intensively disruptive than we believe to be the case” (Boudet and McAdam, 2012 : 55). In the case of cooperative energy, this selection bias is reflected by the fact that most scholars working on such initiatives tend to study cases that have been able to finalize their projects and generate electricity.



**Map 1: Nine local case studies analysed in the thesis**

## **Untangling the structure-agency nexus: a key issue to address to explain the dynamics of cooperative energy**

Building on the idea that “we can never delineate structure or agency in isolation from the other” (Jasper, 2004: 7), my thesis proposes to solve the problem of untangling the structure-agency nexus by thinking in terms of *orientation power* to analyse the interplay between cooperative energy projects and the institutional arrangement structuring their action: a policy regime.

Bearing in mind that “power is like an iceberg, with most of the mass lying below the waterline” (Pierson, 2016:126), the notion of orientation power has been elaborated to capture the dimensions of power that are less visible and to take into account simultaneously agency and structure by looking at the role played by the political work (Smith, 2019) done by cooperative energy networks within an institutional arrangement, a policy regime. I define the power of orientation as the ability of collective organizations of cooperative energy projects to orient and orient themselves within a policy regime to create market opportunities. By thinking in terms of orientation power, we assume that actor’s power can not only be understood through an analysis of how do they take power but also how do they create power (Falleti, 2007) with adaptative capacity (Oteman et al, 2014: 4) knowledge production and sharing, policy and political influence (Koiji et al, 2018: 60). Analysing renewable energy cooperatives through the lens of orientation power is helpful to capture the “strategic agency of environmental alternative action organizations” (de Moor, Catney and Doherty, 2019) beyond the most visible dimensions such as budget evolutions (Giugni, 2007), the openness or closure of a given power plant (Kitschelt, 1986) and allow us to identify how they can institutionalize advantages (Pierson, 2016) “in the interstices of policy programs” without disrupting national policy regimes.

A policy regime can be defined as “a persistent and regular political arrangement composed of (1) a set of state-societal relations affecting the style or process of sectoral policy-making; (2) a set of ideas related to governing these interactions and effecting policy contents and instrument choices; and (3) a set of institutions designed to regularize and routinize the content and style of policy-making in the sector concerned” (Howlett, 2001). While the policy regime approach developed by Howlett was our starting point, we have decided to refine and modify some of the components of the variables that matter within a regime (table 1).

Elements of the policy regime	Variables of interest
Relations and organization of power (State-societal relations according to Howlett)	-Influence of “green” political parties on public policy making; -Veto player <sup>1</sup> capacity of ruling political parties and energy incumbents <sup>2</sup> . -Political capacity of local authorities regarding cooperative market participation -Capacity of cooperative organizations to act as rule makers.
Ideas, instrument choices and regulation modes	-Ideas related to renewable energy; -Instruments regarding renewable energy; -Modes of regulation through these instruments
“Gatekeeper/border” institutions <sup>3</sup>	-Actions and attitudes of these institutions towards cooperative energy projects

**Table 1: Looking at the policies effects on cooperative energy through a policy regime approach**

As with other approaches reasoning through a regime lens, (Piketty, 2019; Boyer, 2015) a policy regime approach helps us to capture “the big picture” by taking into account “the complex legal and organizational features that are systematically interwoven between the State and the economy” (Esping-Andersen, 1990:2). However, analysing how these regimes orientate cooperative energy and how the collective organizations of these initiatives orientate the regimes and orient themselves within them (table 2) is fundamental to consider policy as a dynamic process without falling into the structural determinism of many researchers using a structural opportunity structures approach (Hayes, 2002: 40-51).

<sup>1</sup> This concept describes “individual or collective decision makers whose agreement is required for the change of the status quo (Tsebelis, 1985)

<sup>2</sup> By incumbents, we mean electricity companies with the four following characteristics: 1) *diversification*: a portfolio of different energy sources; 2) *internationalisation*: activities developed in different countries; 3) *vertical integration*: activities developed in different market segments of electricity activities; 4) *dominant market position*: companies having market shares that put them within the top ten in a given market. According to this definition of incumbency, the French company Electricité de France (EDF) is an example of incumbent.

<sup>3</sup> We distinguish three main *border institutions*: the financing institutions of the electric companies (mainly the banks), the “producers of technological knowledge” (engineers, research laboratories) and the organisms regulating the electricity networks (e.g the Danish Energy Agency in Denmark or Ofgem in the United Kingdom). These institutions are named border institutions because they help or hinder the cooperative energy projects to cross two types of borders: one from high uncertainty to stabilized uncertainty level regarding the realization of a cooperative energy project; another from project proposal to project potential realization (from having an idea to doing actions to finalize it).

	How the regime orientates?	How the collective organizations of cooperative energy orient the regime and orient themselves within it?
Relations and organization of power	State and evolution of the power of veto players, of the influence of green political parties, the capacity of local authorities to affect the participation of cooperative energy projects, ability of cooperative organizations to act as rule makers	Structuration of a collective organization, coalition building with other actors, local arrangements with municipalities
Ideas, instrument choices and regulation modes	Place and legitimacy of renewable energy, recognition of the idea of cooperative energy, creation and implementation of policy tools to support her development	Advocacy for policy measures fostering cooperative energy and implementation ‘more or less important) of these measures, use, interpretation or adjusting of policy tools
Gatekeeper/border” institutions	Access conditions to information, finance and grid connection	Use, interpretation or adjusting of these institutions

**Table 2: Capturing the interplay between policy regime and cooperative energy through the notion of orientation power**

Thinking in terms of orientation power is a useful analytical tool to capture the double movement around cooperative energy projects: the environment affecting the development of such initiatives and their strategic reaction and coordinated action within it (Bauwens et al, 2016 :144-146). This analytical tool helps us to explain why cooperative energy projects rise during certain periods and why the market participation of such initiatives reduces during other periods.

In Denmark, integration of the cooperative model into the energy market was an early political decision, dating back to the early 1980s. But the cooperative movement later get marginalized following the end of the “green majority” (Andersen, 1997) in parliament that used to support their development through favourable regulations (**chapter 1**). In France, the deep centralization of energy production (highly dependent on nuclear power) and the low influence of the green party have prevented the development of cooperative projects since the

beginning. They remain today at the margins of the energy sector (**chapter 3**). The British energy policy regime is depicted as large-scale, centrally-planned and private-sector led sector with limited citizen involvement in energy planning and development (Walker et al, 2007), and with successive systems of market support for renewable energy that have been more effectively exploited by large, incumbent energy businesses, rather than smaller, new entrants (Strachan et al, 2015). However, since 2000, a new theme has emerged in both the policy discourse and the investment of public resources around the concept of community renewable energy development with notions of community-led, controlled and owned development of renewable energy installations (Walker et al, 2006). From five in 2010 to 157 in 2019, the number of electricity generation projects owned by community groups has risen dramatically (Community Energy England, State of the Sector Report, 2019). By opening collective ownership, participation in energy development and economic benefits for local areas, community energy can be characterised as an alternative model to market and State arrangements with significant transformative power in the United Kingdom. However, this transformative power is limited, due to: i) difficulties for community energy organisations to institutionalise advantages and to challenge adverse policy evolutions within the British policy regime; ii) a corrective role of market failures in the case of fuel poverty; and iii) the small market share owned by community energy projects (**chapter 2**). This limited transformative limited is a cross-case tendency with renewable energy cooperatives having a small market share (box 1) and converging around a common dynamic: their neutralized participation. My thesis identifies four key elements to explain this neutralization: (i) the difficulties of collective organizations in cooperative to institutionalize advantages; (ii) the difficulties of cooperative projects in orienting the regimes towards recognition of their specificity; (iii) the weak autonomy of cooperative projects in the exercise of a power of orientation; (iv) the difficulties in creating autonomous circuits of commerce.

Whereas there are variations between these three states, in all of them cooperative energy can be considered as a niche: in Denmark, from around 24% of wind power owned by cooperatives in 2004, this proportion decreased to 10% in 2017 (Koji et al, 2018). Renewable energy cooperatives are a recent phenomenon in France and the United Kingdom. Prior to 2008, there were four initiatives while at the end of 2017, there were 54 projects in the former accounting for 3% of wind generation capacity and 0.7% of photovoltaic capacity (Giry et Wokuri, 2020). From five in 2010 to 157 in 2019, the number of electricity generation projects owned by community groups has risen dramatically in the latter but with a tiny market share, with close to 1% of the total renewable energy capacity installed in the United Kingdom. In the three states most of the cooperative develop generation activities whereas there a few instances of cooperatives supplying energy such as Enercoop in France and Co-op Energy in the United Kingdom.

Box 1: Renewable energy cooperatives dynamics in the three states compared



In addition to this main result, I also show the dynamics of renewable energy cooperatives within other scales than the national one (policy regime). Firstly, by showing the role of European institutions for the development of renewable energy cooperatives (**chapter 4**). Many scholars shed light on the fact that Europeanization is a process that could produce changes in terms of economic activity. While economic liberalization and European anchorage of big firms have been studied, few investigations deal with the case of less visible, smaller and less established actors. I fill this gap by asking how new entrants within a market use the European Union through the case study of renewable energy cooperatives. I show that three uses of the European Union are made by these cooperatives: a tool to obtain cognitive and financial resources (1); a tool for intermediation (2) and a leverage to partially open markets (3).

Secondly, by testing the hypothesis of partnerships between local authorities and citizen groups as a tool to overcome the obstacles created by national policy regimes. In the case of Lorient and Bristol, I show that the cooperation between the municipality and Bretagne énergies citoyennes (BEC), between the Bristol City Council and Bristol Energy Cooperative (BECO) creates opportunities to mitigate the evolution of feed-in-tariffs (**chapters 5 and 6**). In the case of Nottingham, I show that the initiative initially planned by Meadows Ozone Energy Services Limited (MOZES) is altered by the policy regime, as the partnership capacity between MOZES and Nottingham City Council is too weak to bypass the barriers established by the national regime (**chapter 7**).

Thirdly, by analysing two ways of challenge from cooperative organisations to incumbents' actors: competition when a cooperative competes directly with the incumbents, Wind People in Denmark, and rupture when a citizen organization tries to develop a transformative initiative of the electricity market, Ile de Sein Energies (IDSE) in France (**chapter 8**).

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