



**HAL**  
open science

# Regulatory framework of collective self-consumption operations: comparative study France, Spain, Germany

Blanche Lormeteau

► **To cite this version:**

Blanche Lormeteau. Regulatory framework of collective self-consumption operations: comparative study France, Spain, Germany. G. Debizet, M. Pappalardo, F. Wurtz. Local Energy Communities. Emergence, Places, Organizations, Decision Tools, 1, Routledge, pp.110-125, 2022, 10.4324/9781003257547-9 . hal-03783722

**HAL Id: hal-03783722**

**<https://hal.science/hal-03783722v1>**

Submitted on 12 Sep 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# **Regulatory framework of collective self-consumption operations: comparative study France, Spain, Germany**

Blanche Lormeteau, CNRS Research Fellow, IODE Laboratory, UMR CNRS 6262

## Abstract

The chapter presents a comparative approach to legal regimes of collective self-consumption operations (France, Germany and Spain). It examines their relationship to the concepts of "local energy communities" and "renewable energy communities» developed by the new European energy law. Considering the modification of the roles of the different energy actors, the analysis of the local governance modes of the electricity systems by the legal regime of collective self-consumption operations and their perspective with the European energy communities characterizes two indicators. These two indicators of what could be a local governance of electricity in the sense of the procedural Energy Justice are, first the creation of a direct producer/consumer relationship, then the local dimension of this relationship. If collective self-consumption does not fully meet these two indicators, European energy communities seem to create a more favourable framework.

In order to mitigate and adapt to climate change, energy models are undergoing a major transition: mass use of renewable energy sources, search for energy sobriety, development of new uses (electric vehicles; storage) and new vectors (hydrogen), etc. All of these changes result in a need to change the modes of governance of energy systems, traditionally subject to the search for a compromise between adherence to the climate regime and the principle of state sovereignty (Lormeteau, 2018).

In this sense, and in line with the concept of resilience (Jasiunas, Lund and Mikkola, 2021), short energy circuits, of which collective self-consumption is one of the manifestations, have the particularity of supporting a local governance of energy allowing an increasing integration of the energy issues (Campos et al., 2020) of climate disruption from the perspective of the concept of Energy Justice (Sovacool, Dworkin, 2014).

### ***1. Energy justice and short-circuit energy development: reducing socio-economic and territorial vulnerabilities***

If there seems to be an intuitive link between the development of short circuits, local governance and energy justice (Van Veelen, 2018), that a multiscale approach to the changes in energy systems under the effect of Energy Justice is also possible to demonstrate the emergence of local energy governance (Bommel van and Höffken, 2021), this developing concept of Energy Justice (Heffron and McCauley, 2018; Del Guayo et al., 2020; Lormeteau, 2021), allows for a teleological analysis of these changes.

Defined as "a global energy system that equitably disseminates the benefits and costs of energy services and has unbiased energy representatives and decision-makers" (Sovacool and Dworkin, 2014, p.677), Energy Justice develops a new repertoire of analysis of the current search for the balance between energy security, equity, and environmental sustainability of energy systems (Lesage and Van de Graal, 2013)-the Energy Trilemma (del Rio del Valle, 2020), which is efficient, fair, and equitable (McCauley, 2017).

Energy justice is one facet of climate justice, in that they both recognize "the need to address, from an equity perspective, the often-disproportionate impact of climate change on citizens and local communities in developed and developing economies" (Decision 1 -/CP.21; Jouzel and Michelot, 2020). They will promote an integrated and global approach to climate issues in order to work on reducing the links of dependence, specifically energy dependence, which is the basis of inequalities and climate change. Energy justice requires the development of adaptation and mitigation policies to climate change that are specific to each situation and each territory. Thus, the observation is that energy dependencies have created a global system placing populations and territories in a state of energy vulnerability because they do not control the energy sources necessary for their development and because they are factors of climate change.

Energy vulnerability identified by Energy Justice (Sovacool, 2013) characterizes actual or potential inequalities in access to energy (Walker, 2015), and covers a dynamic, multidimensional phenomenon considering internal parameters, attached to the individual (socio-demographic characteristics, consumption practices, needs, etc.) and external parameters, relating to socio-spatial realities, specific to each territory, in particular the mode of energy governance. The identification of energy vulnerabilities makes it necessary to rethink the whole organization of energy governance, in particular by giving a more important place to citizens and territories, capable of identifying their energy difficulties and dependencies (Hopkins, 2008).

In this sense, energy justice aims to draw attention to the way in which the benefits and burdens of energy systems are distributed, which is in line with the definition proposed by E. Oström, according to which the commons is a "set of resources collectively governed, by means of a governance structure ensuring a distribution of rights among the partners participating in the commons (*commoners*) and aiming at the orderly exploitation of the resource allowing its reproduction in the long term" (Coriat, 2015, p.38-39). Applied to the energy sector, and placing energy vulnerability issues in parallel, a link can be made with energy justice. Indeed, its purpose is to draw attention to the way in which the benefits and burdens of energy systems are distributed. Energy Justice responds to eight principles for identifying a 'just' energy system, one of which is that of good governance, i.e. that all people should have access to high quality energy information and fair, transparent and accountable forms of energy decision making (Sovacool and Dworkin, 2015). It is therefore essentially in relation to Procedural Justice that an analysis of the determinants of local energy governance can be developed in the example of collective self-consumption operations.

The development of local energy governance therefore raises questions about the decentralisation of energy system management, which can be understood in different ways, depending in particular on the legal context of each country (Watson and Devine-Wright, 2011). One of the ways of approaching it is that of decentralising the electricity system from the point of view of the place of the consumer in relation to the energy issues of the territory (Poupeau, 2007; Hisschemöller and Sioziou, 2013).

## ***2. The emergence of the consumer-actor as a key to common analysis of the evolution of energy systems***

The emergence of the reference to the consumer-actor (Global Observatory, 2019) in the energy sector is thus observed to qualify the one who seeks to consume "green" and local energy, or even the one, from the perspective of the *prosumer*, who actively participates in the energy market, being able to act within the framework of collective relations (Gui and MacGill, 2018), and of which collective self-consumption is the typical example. Prosumerism refers to the current alteration of the distinction in the market (Kalkbrenner and Roosen, 2016) between production and consumption patterns due to the engagement of actors, individual or collective, in the satisfaction of all elements of the energy

cycle. Thus, as early as 2014, the IAE published research on the stakes and benefits of the prosumption of photovoltaic electricity in a context of the fight against climate change. The study underlined that "The rise of the solar photovoltaic "prosumer" has the potential to transform the centralized electric utility model that has served the world for over 100 years into a more decentralized and interactive system. In some areas of the world it is now more cost-effective for households to produce their own power from PV than to purchase electricity from the grid" (IEA-RETD, 2014, p.5). European energy policy has also incorporated this new consumer concept. For example, the European Economic and Social Committee states that "energy prosumption can be seen as an important element in the move towards decentralised generation, representing a broadly desirable pattern from the perspective of energy security, as well as from an environmental and social point of view". Prosumers are defined as: "individuals, groups of individuals, households or farms able to operate in an organised way, e.g. through associations, foundations or cooperatives, that are both producers and consumers of energy produced in small installations located in back yards or on residential or commercial buildings (e.g. mini wind turbines, photovoltaic panels, solar collectors and heat pumps). Prosumers can also be small businesses, including social enterprises and local authorities" (EESC, 2016, p.10). Finally, Directive 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity (IMED adopts this concept, recognizing, in addition to the right to self-consumption, the existence of the concept of *active customer* as "a customer or a group of jointly acting customers who consume, store or sell electricity generated on their premises, including through aggregators, or participate in demand response or energy efficiency schemes provided that these activities do not constitute their primary commercial or professional activity." (art. 2 8), thus defining the members of collective self-consumption operations.

Considering the modification of the roles of the different energy actors, the analysis of the local governance modes of the electricity systems allows a comparative approach between three States, France, Spain and Germany, which have a different legal framework (Frieden, Tuerk and Neumann, 2020), in particular because of their federal or unitary state structures and the distribution of competences in the electricity sector. Faced with a multitude of reasons that may explain the choice of energy consumers to have their roles in the power system evolve (Hewitt et al, 2019), the legal regime of collective self-consumption operations is another key to analysing this phenomenon (Campos and Martin-Gonzalez, 2020), by characterising two criteria: first, the legal environment of the new relationships created in relation to the classical energy law, second, that of localism, as collective self-consumption is explicitly inscribed as a local short circuit of energy and this, especially as energy communities are now legally determined, will come to offer a new governance framework to energy exchanges (Verde and Rossetto, 2020; Busch, et al. 2021) in which collective self-consumption operations have a full role to play (Almeida, et al., 2021).

### ***3. The legal status of the producer of a collective self-consumption operation, the first mark of a decentralisation of the electricity model***

Collective self-consumption can be presented as the first phase of the structuring of a decentralized governance of electricity exchanges between a producer and a consumer because it questions the legal qualification of these two system actors. Decentralization is then not defined in relation to the distribution network or the market (Dudjak et al. 2021), but in relation to the market actors, the suppliers.

Thus, the difficulty in structuring a local energy governance is to respect, for the consumer, the principle of free choice of supplier (art. 21, dir. 2003/54; art. 33, dir. 2009/72), as a correlation to the affirmation of the right of third parties to access the network (ECJ, 7 June 2005, VEMW, C-17/03,

Rec. I-04983). The setting up of a collective self-consumption operation allows a first step towards this governance by creating new contractual relations between the actors.

As for the principle of free choice of supplier, the central question in the legal orders is whether the producer of a collective self-consumption operation is a supplier, in the legal sense of the term. Indeed, in the electricity market, only suppliers - with an administrative authorization - can carry out the activity of supply, i.e. "the sale, including resale, of electricity to customers;" (art. 2, dir. 2019/944). Therefore, according to a strict interpretation, a direct sale between a producer and a consumer of electricity cannot be assimilated to a supply activity, unless the producer holds the status of supplier. However, supplier status is restrictive because of the administrative requirements and the public service obligations imposed on a supplier. If the producer of a collective self-consumption operation were to obtain the status of supplier, then this exchange model would lose its flexibility and would resemble a classic contractual framework on the energy market, losing any purpose of structuring a decentralized governance of energy. Moreover, no legislation assimilates the producer of a self-consumption operation with a supplier. This specificity of collective self-consumption operations places them outside the electricity market, and thus constitutes one of the criteria of what would be the local governance of energy.

Thus, without explicitly deciding the question of the producer's qualification as a supplier (Almeida et al. 2021), national legal frameworks for collective self-consumption operations have been set up, opting either for the recognition of power purchases agreements or for the structuring of an *ad hoc* entity in charge of contractualizing these relations. The only legal framework imposed is that the consumer of a collective self-consumption operation benefits from all the rights of an ordinary electricity consumer (art. 21, directive 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources below RED II)).

### **3.1 French case**

Since 2016 (Ordinance No. 2016-1019 of 27 July 2016 on self-consumption of electricity, JORF No. 174 of 28 July 2016), France has favoured the implementation of a legally structured governance of collective self-consumption operations around an organising legal entity (PMO<sup>i</sup>) (art. L.315-2 of the French Energy Code) made up of the producer(s) and the consumer(s), the legal nature of which is left open, i.e. it can be a private company, a cooperative, a public-private partnership, a public entity or an association. However, this PMO is not in charge of contracts between the producer and the consumer. Its main task is to act as an interface between these players and the distribution system operator in order to provide the latter with the information needed to conduct operations (quantity of energy exchanged, quantity of energy supplied by third-party suppliers, presence of a storage facility, flow repair key, etc., art. L.315-4; D.315-6 and D. 315-9 of the French Energy Code). Therefore, in the French framework, the PMO makes it possible to identify producers providing a supply activity to consumers, without them being assimilated to suppliers on the market, reinforcing the observation that collective self-consumption operations are indeed outside the market and constitute an *ad hoc* framework for electricity exchanges. The absence of an identified legal structure for the PMO and the absence of internal governance rules offers some flexibility to the project actors to determine their own governance rules, especially if they adopt the associative framework. But at the same time, this absence of a legislative framework does not make it possible to ensure the real effectiveness of shared governance, particularly the question of the allocation rules between production and consumption flows, between players who do not have the same degree of information and knowledge of the energy system, whereas in France, the project owners and producers are for the time being mainly

professionals in the sector or public establishments specialising in the energy sector. In 2019 there were 34 active operations, 453 consumers (mainly households and small B2Bs), 1.45 MW installed capacity, 68 PV installations, including 52 small producers under individual SC schemes sharing their surplus (OFATE, 2020).

The only existing structuring, underlining the importance of protecting more vulnerable consumers, is that of collective self-consumption operations among social landlords. Indeed, the main disadvantage of the structuring of PMO is that of managing the freedom of consumers and producers to join or withdraw from the operation. This freedom influences the economic profitability of the operation, which depends on the number of its members. Like any consumer, tenants have the right to freely choose their suppliers (art. L. 331-1 of the French Energy Code), but the occupation of the dwellings is temporary in principle. Therefore, for social landlords, the variability of consumers is a sensitive parameter. Taking the example of the German framework (*infra.*), a legal framework was specifically created in 2019 (Law n° 2019-1147 of 8 November 2019 on energy and climate). In this case, the social landlord is the PMO (art. L.315-2-2 of the French Energy Code). Information on the presence of a collective self-consumption operation is provided when the lease contract is concluded, and the tenant can freely decide not to participate in the operation, and will also be able to leave the operation at any time. The information is delivered during a dedicated meeting and by means of a specific document, posted within the building and given individually to each tenant. It must include, in particular, a description of the operation, the methods envisaged for distributing energy among the tenants; the methods for passing on the financial impact of the participation in the operation to the tenants; the conditions for changing the financial impact; and a simulation of the overall financial impact for one or more typical households (art. R.315-13 of the French Energy Code). However, nothing is indicated on the rights of the tenant-consumers regarding the governance of the collective self-consumption operation. Therefore, this specificity underlines once again that collective self-consumption operations, despite this legal structure of "PMO", identify contractual relations between producer and consumer, bypassing the status of the supplier, without implying a real appropriation of the local governance of electricity in an institutional sense.

Moreover, this difference in France between collective self-consumption operations is the result of a distortion in the implementation of a right to information and in the organisation of local and shared governance, with regard to the requirements of procedural energy justice. Thus, the legislator only frames the information delivered to the participants of an operation led by a social landlord, without the information delivered to the participants of common law operations being framed, taking into account the observation that, in other community systems, there is a sociological limit to the investment of some consumers in governance despite transparent information (Burchell, Rettie and Roberts, 2016).

### **3.2 German case**

In Germany, collective self-consumption has long been restricted to the building scale, involving contractual relationships between a producer and its occupants, the "Mieterstrommodell", without a governance model behind it. As of July 3, 2019, the Federal Grid Agency's register had registered 677 tenant-based PV electricity installations with a total of about 13.9 MW (BWE<sup>ii</sup>, 2021). The reform of the Renewable Energy Sources Act 2021 (EEG, 2021) has changed this framework. Thus, in addition to collective self-consumption operations within a building, it is now possible to develop operations on a neighbourhood scale. In order to respect the right of final consumers to choose their supplier, the energy sector law provides for specific provisions for collective self-consumption contracts for the

occupants of dwellings (§ 42 a., Gesetz über die Elektrizitäts- und Gasversorgung, Energiewirtschaftsgesetz - EnWG), because the contract is qualified as a supply contract (§ 320, Gesetz für den Ausbau erneuerbarer Energien, Erneuerbare-Energien-Gesetz - EEG 2021). In addition, specific rules for the supply activity within the framework of a collective self-consumption operation apply to the producer, such as the metering obligation for determining the tax base (§ 74 a Gesetz für den Ausbau erneuerbarer Energien, Erneuerbare-Energien-Gesetz - EEG 2021). The German legislation proceeds by listing specific obligations: the contract may not form part of a contract for the rental of residential premises, on pain of nullity; it must provide for the total supply of electricity to the end consumer, even if local electricity supply is not possible; in the event of moving out, the contract automatically ends when the property is returned; the duration of the contract is one year, with tacit renewal possible etc. Thus, in order to maintain a certain flexibility, collective self-consumption as organised in German law is based on a framework placing the producer and the consumer in a specific contractual relationship. However, there is nothing to prevent the contractual relationship of collective self-consumption from taking place within an energy cooperative (Energiegenossenschaft) or a civil law partnership (Gesellschaft bürgerlichen Rechts) (Radtke and Ohlhorst, 2021), but these are not forms imposed by the German legislator (Funcke and Ruppert-Winkel, 2020).

Decentralization of the electricity system once again takes the form of governance based on a direct, non-market contract between a producer and a consumer. However, since 2021, the contractual relationship can now be tripartite, with the producer selling its electricity to an intermediary in charge of supplying the electricity to consumers. The producer is then no longer subject to the specific contractual rules relating to the marketing of this "local" electricity.

### **3.3 Spanish case**

Spain has also adopted an essentially contractual framework for dealing with collective self-consumption operations (Gallego-Castillo, Heleno and Victoria, 2021), although limiting them to a specific geographical area. Until the adoption of Royal Decrees 15/2018, of 5 October 2018 and 244/2019 of 5 April 2019, Spain had a particularly restrictive framework for photovoltaic production (Masson, Briano and Baez, 2016) due in particular to the institution of a "solar tax" (Real Decreto 900/2015, of 9 October 2015), which was levied specifically on self-consumed photovoltaic electricity. Thus, collective self-consumption refers to the consumption of one or more consumers of electrical energy from nearby production facilities associated with those intended for consumption (Art. 9, Ley 24/2013, de 26 de diciembre, del Sector Eléctrico, BOE-A-2013-13645), without the term associate being specified, when the generation facilities, with a capacity of less than 100 kW, can, in addition to providing energy for self-consumption, inject surplus energy into the transmission and distribution networks. Again, as in Germany, collective self-consumption operations could be carried out within Cooperativas de Consumo, cooperations prefiguring the organization of European energy communities (Frieden et al., 2019).

The analysis of these three frameworks shows that collective self-consumption is indeed a first step in the decentralisation of electrical models, not in relation to the network - Germany and Spain do not have the very specific monopolistic situation of France in the management of the distribution network - but in relation to the actors of the energy system. The creation of new *ad hoc* contractual frameworks, without national or even European legislation proceeding to legally determine the production activity within a collective self-consumption operation in relation to the classic supply activity, participates, even in the absence of a determined local governance structure for these exchanges, in a decentralisation of the electricity model.

### **3.4 Perspective of energy communities in European law**

This observation is corroborated by European law. Directive 2018/2001, RED II) does specify that self-consumers of renewable energy are final customers who may "store or sell renewable electricity that he has produced himself, provided that these activities do not constitute, for the self-consumer of renewable energy who is not a household, his principal professional or commercial activity;" (art. 2 14), reading attached to 15) for « jointly acting renewables self-consumers », dir. 2018/2001). Directive 2019/944 IMED defines the collective self-consumer as an "active customer", who may sell electricity "which he has produced himself or participates in flexibility or energy efficiency programmes, provided that these activities do not constitute his main commercial or professional activity;" (art. 2 8), dir. 2019/944). Thus, the producer member of a collective self-consumption operation is clearly distinguished from a supplier acting on the market. The articulation between collective self-consumption and energy communities reveals the same dynamic. Thus, within the meaning of the IMED directive, the purpose of the citizen energy community is "to offer environmental, economic or social community benefits to its members or shareholders or to the local territories where it operates, rather than to generate financial profits"; in the sense of the RED II directive, the renewable energy community (below REC) aims to "provide environmental, economic or social benefits to its shareholders or members or to the local territories where it operates, rather than seeking profit", its article 22 specifying that, for private companies that would participate in these renewable energy communities, this must not be "their main commercial or professional activity". These two communities can perfectly well carry out collective self-consumption operations alongside their other activities. Spain has transposed only the definition of RECs (art. 6 1. j), Ley 24/2013, de 26 de diciembre, del Sector Eléctrico, BOE-A-2013-13645) but without specifying the articulation with collective self-consumption operations, Germany has not yet transposed. The French legal framework, which has strictly transposed these two definitions (art. L. 291-1 and L. 292-1 of the French Energy Code), provides that the PMO can be an energy community (art. L.315-2-2 of the French Energy Code), giving collective self-consumption operation a possibility to have an organized governance structure.

In all cases, it can be observed that collective self-consumption of electricity contributes to the decentralisation of the energy system because it modifies the roles traditionally reserved for the players in the energy system by allowing the producer to supply electricity outside the market, directly to a consumer, without necessarily being qualified as a supplier, the German framework being an exception in the European landscape.

#### ***4. Collective self-consumption as an activity of energy communities to maintain the localism of exchanges***

The second key element identifying collective self-consumption as participating in a decentralisation of the electricity model is that of promoting the local character of energy exchanges, an element shared by the different legal frameworks with varying degrees of precision (Frieden et al., 2019). Thus, it can be observed that collective self-consumption has a strong territorial anchorage, being part of Energy Justice since it prompts attention to how the benefits and burdens of the local energy system are distributed. The consumer and/or the producer remain in a close geographical framework, they appropriate the territorial management of energy see, can with physical relations.

#### **4.1 French case**

Since July 2021, France has had three collective self-consumption regimes that are differentiated according to their scope (art. L.315-2 of the French Energy Code). The first is that of self-consumption located in the same building, which may be residential, tertiary or industrial. The second is the case of



so-called "extended" collective self-consumption operations: the supply of electricity takes place between one or more producers and one or more consumers "whose extraction and injection points are located on the low-voltage network and meet the criteria, in particular geographical proximity". The criteria are set by ministerial order after the opinion of the Commission de régulation de l'énergie<sup>iii</sup> (order of 21 November 2019 setting the criterion of geographical proximity of extended collective self-consumption): the distance separating the two most distant participants does not exceed two kilometres from the delivery point for consumption sites; from the injection point for generation sites; the cumulative power of the generation facilities is less than 3 MW on the mainland metropolitan territory and 0.5 MW in non-interconnected areas (for solar energy, the power considered is the peak power). In addition, a derogation was introduced in 2020 (order of 14 October 2020 amending the order of 21 November 2019 setting the geographical proximity criterion for extended collective self-consumption): the minister in charge of energy may, at the request of an PMO whose extended collective self-consumption project is located in low-density, authorise a project where the distance between the two furthest participants is a maximum of twenty kilometres. This derogation is justified in particular with regard to the isolation of the project location, the scattered nature of its habitat and its low population density, thus allowing rural areas to be included. Finally, the third system is the extended collective self-consumption operation, only when the electricity supplied is of renewable origin, and whose extraction and injection points can then be located on the public electricity distribution network.

#### **4.2 German case**

In Germany, collective self-consumption operations were initially limited to the scale of a building. The reform carried out in 2021 allows an extension of these operations to the scale of a district determined by the fact that the electricity does not transit through the public network, within the limit of an installed capacity of 100 kW (§21 (3) Gesetz für den Ausbau erneuerbarer Energien, Erneuerbare-Energien-Gesetz - EEG 2021).

#### **4.3 Spanish case**

In Spain, collective self-consumption is limited physically and geographically by the following conditions: the participants must be located within the low-voltage distribution network located downstream of the same transformer station; the maximum distance between production and consumption meters must be 500m; the participants are located in the same cadastral area and finally the production means are connected to the internal network of the associated consumers (direct lines) or to the low-voltage network (Art. 3 g) Real Decreto 244/2019, de 5 de abril, por el que se regulan las condiciones administrativas, técnicas y económicas del autoconsumo de energía eléctrica).

This characteristic of collective self-consumption operations is very important. Thus, the French framework offers as much distance as possible between the self-consumers. However, as the *Commission de régulation de l'énergie* (2020) pointed out during its consultation on the extended perimeter: "authorising such a distance for an operation in an urban area would not allow the "local" dimension that must be inherent in a self-consumption operation to be maintained". A physical distance is created between producer and consumer.

#### **4.4. Perspective in European law of energy communities**

If the link between collective self-consumption and territorial resource management is distant, it is present in the definitions of energy communities. The definition of renewable energy communities in

the RED II Directive requires that this entity "is based on open and voluntary participation, is autonomous, is effectively controlled by shareholders or members *in the vicinity* of the renewable energy projects to which the legal entity has subscribed and which it has developed" (Art. 2 16) dir. 2018/2001). Recital 70 of the Directive insists, stating that "The involvement of local people and local authorities in renewable energy projects through renewable energy communities has added great value in terms of local acceptance of renewable energy and has enabled access to more private capital, resulting in local investments, greater consumer choice and increased citizen participation in the energy transition. This local engagement is all the more essential in the context of increasing renewable energy capacity. Measures to enable renewable energy communities to compete on an equal footing with other producers are also intended to increase the participation of local citizens in renewable energy projects and thus increase the acceptance of renewable energy. This commitment to the local character of the resource being exploited is necessarily only imposed on communities based on local energy exploitation. It places renewable energy communities as true local energy resource management entities. The citizen energy community under the IMED directive is interested in the environmental, economic or social benefits to its members, or "to the local territories where it carries out its activities" (Art. 2 11) dir. 2019/944), without the link with an exploitation of a local resource being made, distancing somewhat the approach of a territorialized energy management. Thus, collective self-consumption developed within the framework of citizen energy communities will make it possible to maintain a strong link with the territory because these communities are not necessarily part of a local governance structure for energy exchanges, but more broadly in exchanges of energy services (production, consumption, storage, energy efficiency).

## **5. Conclusion**

Collective self-consumption thus characterizes a progressive implementation of local energy governance through the decentralization of exchanges carried out within the framework of *ad hoc* contracts and enhancing the territorial attachment of this relationship. Thus, collective self-consumption highlights the indicators necessary to identify a decentralization of the electricity model under the prism of energy justice as new contractual relationships redistributing the roles of the actors and a certain geographical proximity between the co-contractors. It encourages the accentuation of local governance of energy exchanges in order to guarantee equality of rights between the participants through equitable representation of individuals, equality of rights, and in particular the capacity of actors to make decisions on energy policies and projects, and a right to transparent and accessible information. These two criteria do not seem to be fully met by the legal framework developed for collective self-consumption but seem to be able to be met in the future by energy communities, in which collective self-consumption can be carried out, offering a new and welcome governance framework. It appears that energy communities as defined by EU law are more in line with the concept of energy justice by promoting effective control of the entities by the members and shareholders and by insisting on the link with the benefits and services provided to its members and to the public. Therefore, if collective self-consumption operations participate in the energy transition, by redesigning a local governance of multi-actor energy (Hiteva and Sovacool, 2017), it remains to be ensured that the rules of governance of collective self-consumption operations, and also of future energy communities (Horstink, Wittmayer and Ngac, 2021), allow for a balanced participation of the different actors in these structures in order to apply the concept of energy justice.

## **Bibliography**

Almeida de L., Cappelli V., Klausmann N. and Soest van H. (2021) *Peer-to-Peer Trading and Energy Community in the Electricity Market - Analysing the Literature on Law and Regulation and Looking Ahead to Future Challenges*. EUI RSC, 2021/35, Florence School of Regulation. Available from <https://hdl.handle.net/1814/70457> [Accessed 14 January 2022]

Bommel van M. and Höffken J. I. (2021). Energy justice within, between and beyond European community energy initiatives: A review. *Energy Research & Social Science*, 79 (2021) 102157. Available from <https://doi.org/10.1016/j.erss.2021.102157> [Accessed 14 January 2022]

BWE (Bundesministerium für wirtschaft und energie), (2021), *Mieterstrombericht nach § 99 Erneuerbare-EnergienGesetz 2017*, Available from <https://www.erneuerbare-energien.de/> [Accessed 31 January 2022]

Burchell K., Rettie R. and Roberts T. C. (2016). Householder engagement with energy consumption feedback: the role of community action and communications. *Energy Policy*, 88 (2016), 178-186. Available from <https://doi.org/10.1016/j.enpol.2015.10.019> [Accessed 14 January 2022]

Busch H., Ruggiero S., Isakovic A., and Hansen T. (2021). Policy challenges to community energy in the EU: A systematic review of the scientific literature. *Renewable and Sustainable Energy Reviews*, 151, November 2021, 111535. Available from <https://doi.org/10.1016/j.rser.2021.111535> [Accessed 14 January 2022]

Campos I. and Martin-Gonzalez E. (2020). People in transitions: Energy citizenship, prosumerism and social movements in Europe. *Energy Research & Social Science*, 69 (2020) 101718. Available from <https://doi.org/10.1016/j.erss.2020.101718> [Accessed 14 January 2022]

Campos I and al. (2020). Regulatory challenges and opportunities for collective renewable energy consumers in the EU. *Energy Policy*, 138, March 2020, 111212 Available from <https://doi.org/10.1016/j.enpol.2019.111212> [Accessed 14 January 2022]

Commission de Régulation de l'Énergie, Deliberation n°2019-215 of 11 June 2020 on the draft order amending the order of 21 November 2019 setting the geographical proximity criterion for extended collective self-consumption. Available from <https://www.cre.fr/Documents/Deliberations/Avis/critere-de-proximite-geographique-de-l-autoconsommation-collective> [Accessed 14 January 2022]

Coriat, B. et al. (2015). *Le retour des communs. La crise de l'idéologie propriétaire*. Paris: Les liens qui Libèrent.

Del Guayo, I., et al. (2020). *Energy Justice and Energy Law*. Oxford: Oxford University Press. Available from <https://oxford.universitypressscholarship.com/> [Accessed 14 January 2022]

Del Rio del Valle, R. B. (2020). *Diversity and the Energy Trilemma. The case of India (1990-2014)*. (unpublished postgraduate thesis), Université de Pau et des Pays de l'Adour, Universidad del País Vasco, Pau, France

Dudjak V. et al. (2021). Impact of local energy markets integration in power systems layer: A comprehensive review. *Applied Energy*, 301, 1 November 2021, 117434. Available from <https://doi.org/10.1016/j.apenergy.2021.117434> [Accessed 14 January 2022].

- European Economic and Social Committee (EESC) Opinion (2016). *Prosumer Energy and Prosumer Power Cooperatives: Opportunities and challenges in the EU countries*, TEN/583-EESC-2016, JO C 34 2.2.2017. Available from <https://www.eesc.europa.eu/> [Accessed 14 January 2022].
- Frieden D., Tuerk A. and Neumann C. (2020). *Collective self-consumption and energy communities: Trends and challenges in the transposition of the EU framework*. Working paper. December 2020, COMPILE project. Available from <https://www.compile-project.eu/> [Accessed 14 January 2022].
- Frieden D. and al. (2019). *Collective Self-Consumption and Energy Communities: Overview of Emerging Regulatory Approaches in Europe*. H2020-824424 COMPILE project. Working paper. Available from <https://www.compile-project.eu/> [Accessed 14 January 2022].
- Funcke S. and Ruppert-Winkel C. (2020). Storylines of (de)centralisation: Exploring infrastructure dimensions in the German electricity system. *Renewable and Sustainable Energy Reviews*, , 121 (C). Available from <http://dx.doi.org/10.1016/j.rser.2019.109652> [Accessed 14 January 2022].
- Gallego-Castillo C, Heleno M. and Victoria M. (2021). Self-consumption for energy communities in Spain: A regional analysis under the new legal framework. *Energy Policy*, 150, March 2021, 112144. Available from <https://doi.org/10.1016/j.enpol.2021.112144> [Accessed 14 January 2022].
- Global Observatory on Peer-to-Peer, Community Self-Consumption and Transactive Energy Models, International Energy Agency. (2019), <https://userstcp.org/task/peer-to-peer-energy-trading/> [Accessed 31 January 2022].
- Gui E. M. and MacGill I. (2018). Typology of future clean energy communities: an exploratory structure, opportunities, and challenges. *Energy Research & Social Science*, 35 (2018), 94-107. Available from <https://doi.org/10.1016/j.erss.2017.10.019> [Accessed 14 January 2022].
- Heffron R. J. and McCauley D. (2017). The concept of energy justice across the disciplines. *Energy Policy*, 105 (2017) 658 Available from <https://doi.org/10.1016/j.enpol.2017.03.018> [Accessed 14 January 2022].
- Hewitt R. J. et al. (2019). Social innovation in community energy in Europe: a review of the evidence. *Frontiers in Energy Research*, 7. Available from <https://doi.org/10.3389/fenrg.2019.00031> [Accessed 14 January 2022].
- Hisschemöller M. and Sioziou I. (2013). Boundary organisations for resource mobilisation: enhancing citizens' involvement in the Dutch energy transition. *Environ. Pol*, 22 (5) (2013), 792-810. Available from <https://doi.org/10.1080/09644016.2013.775724> [Accessed 14 January 2022].
- Hiteva R. and Sovacool B. K. (2017). Harnessing social innovation for energy justice: a business model perspective. *Energy Pol.*, 107 (2017), 631-639. Available from <https://doi.org/10.1016/j.enpol.2017.03.056> [Accessed 14 January 2022].
- Hopkins R. (2008). *The Transition Handbook. From Oil Dependency to Local Resilience*. Cambridge: Green Books
- Horstink L., Wittmayer J. M. and Ngac K. (2021). Pluralising the European energy landscape: collective renewable energy consumers and the EU's clean energy vision. *Energy Policy*. 153, June 2021, 112262 Available from <https://doi.org/10.1016/j.enpol.2021.112262> [Accessed 14 January 2022].

IEA-RETD (2014), *Residential prosumers - Drivers and policy options (RE-PROSUMERS)*. Available from <http://iea-retd.org/> [Accessed 14 January 2022].

Jasiunas J., Lund P. D. and Mikkola J. (2021). Energy system resilience - A review, *Renewable and Sustainable Energy Reviews*. 150, Oct. 2021, 111476. Available from <https://doi.org/10.1016/j.rser.2021.111476> [Accessed 14 January 2022].

Jouzel J., and. Michelot A., (2020). Quelle justice climatique pour la France? *Revue de l'OFCE*, 2020/1, 71-96

Kalkbrenner B. J., Roosen J. (2016). Citizens' willingness to participate in local renewable energy projects: the role of community and trust in Germany. *Energy Research & Social Science*, 13 (2016), 60-70. Available from <https://doi.org/10.1016/j.erss.2015.12.006> [Accessed 14 January 2022].

Lesage D. and Van de Graal T. (2013). *Global Energy Governance in a Multipolar World*. London: Routledge, 2013

Lormeteau, B. (2021). Justice énergétique et inégalités: introduction à la vulnérabilité énergétique. *Revue juridique de l'environnement*. 46, 541-558. Available from <https://www.cairn.info/revue-revue-juridique-de-l-environnement-2021-3-page-541.htm> [Accessed 14 January 2022].

Lormeteau B. (2018). Une lecture énergétique du droit international du climat. In Torre-Schaub M., Lavorel S., Moliner-Dubost M. and Cournil C., *Quel(s) droit(s) pour les changements climatiques*, Paris: Mare et Martin, 349-360

Masson G., Briano J. I. and Baez M. J. (2016), *Review and Analysis of PV Self-Consumption Policies. Technical report* International Energy Agency, Report IEA-PVPS T1-28:2016 89p. Available from [https://iea-pvps.org/wp-content/uploads/2020/01/IEA-PVPS\\_-\\_Self-Consumption\\_Policies\\_-\\_2016\\_-\\_2.pdf](https://iea-pvps.org/wp-content/uploads/2020/01/IEA-PVPS_-_Self-Consumption_Policies_-_2016_-_2.pdf) [Accessed 31 January 2022]

McCauley D. (2018). *Energy Justice: Re-balancing the Trilemma of Security, Poverty and Climate Change*. Cham, Switzerland: Palgrave Macmillan

OFATE / DFBEW (2020). *Panorama of PV Self-consumption in Germany & France*. Available from [https://energie-fr-de.eu/fr/manifestations/lecteur/conference-sur-le-photovoltaique-au-service-du-consommateur.html?file=files/ofaenr/02-conferences/2020/201203\\_photovoltaique\\_consommateur/Presentations/01\\_Pascale\\_Jean\\_PwC\\_OFATE\\_DFBEW.pdf](https://energie-fr-de.eu/fr/manifestations/lecteur/conference-sur-le-photovoltaique-au-service-du-consommateur.html?file=files/ofaenr/02-conferences/2020/201203_photovoltaique_consommateur/Presentations/01_Pascale_Jean_PwC_OFATE_DFBEW.pdf) [Accessed 14 January 2022].

Ostrom E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press

Poupeau F.-M. (2007). Le 'service public territorialisé', nouveau modèle de gouvernance des grands réseaux de service public en France. In Bauby P., Coing H. and Tolédo de A., *Les services publics en Europe. Pour une régulation démocratique*, Paris: Publisud, coll. L'Observatoire des sociétés

Radtke J. and Ohlhorst D. (2021). Community Energy in Germany - Bowling Alone in Elite Clubs? *Utilities Policy*, 72, 101269. Available from <https://doi.org/10.1016/j.jup.2021.1101269> [Accessed 14 January 2022].

Ryghaug M., Moe Skølsvold T. and Heidenreich S. (2018). Creating energy citizenship through material participation. *Social Studies of Science*, 48(2), 283-303. Available from <https://doi.org/10.1177/0306312718770286> [Accessed 14 January 2022].

Sovacool B. K. and Dworkin L. (2015). Energy justice: conceptual insights and practical applications. *Applied Energy*, 2015, 142, 435-444. Available from <https://doi.org/10.1016/j.apenergy.2015.01.002> [Accessed 14 January 2022].

Sovacool B. K. and Dworkin L. (2014). *Global Energy Justice: Principles, Problems, and Practices*, Cambridge: Cambridge University Press

Sovacool B. K. (2013), *Energy & Ethics: Justice and the Global Energy Challenge*. London: Palgrave Macmillan

Van Veelen B. (2018). Negotiating energy democracy in practice: governance processes in community energy projects. *Env. Polit.* 27:4, 644-665. Available from <https://doi.org/10.1080/09644016.2018.1427824> [Accessed 14 January 2022].

Verde S. and Rossetto N. (2020). *The future of renewable energy communities in the EU: an investigation at the time of the Clean Energy Package*. Florence School of Regulation, Energy, Climate, Retrieved from Cadmus, European University Institute Research Repository, at: <https://hdl.handle.net/1814/68383>

Walker G. (2015). The Right to Energy: Meaning, Specification and the Politics of Definition. *L'Europe en Formation*, 378, 26-38. Available from <https://doi.org/10.3917/eufor.378.0026> [Accessed 14 January 2022].

Watson J. and Devine-Wright P. (2011). Centralisation, decentralisation and the scales in between: What role might they play in the UK energy system? In Jamasb T. and Pollitt M., *The Future of Electricity Demand: Customers, Citizens and Loads*. Cambridge: Cambridge University Press, 280-297

---

iPMO: in French is a « personne morale organisatrice » : legal entity

iiBWE is the “Bundesministerium für wirtschaft und energie, the German Federal Ministry for economic Affairs and energy

iiiFrench Energy Regulator