NEW PERSPECTIVES FOR THE COOPERATIVISM OF RENEWABLE ENERGIES: LEGAL RECOGNITION AND PROMOTION

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1. Introduction.

It is rightly said that energy is the driving force that keeps the world going and that the main sources of energy we use (oil and coal) are unsustainable due to their finite and contaminating characteristics. Apparently, 87% of the energy we consume is not renewable[2].
This framework fosters the need to develop other sources of energy that are renewable and in general sustainable, such as sun and wind.
If energy is important to keep the world going it is also important to know who controls energy production. Currently ownership of the main sources of energy belong to big companies, because huge resources are required to exploit an oil or coal field, to build a hydro-electric plant, to transform energy and distribute it.
Recourse to other sources of energy, such as sun, wind or common goods, which are not private property nor are located in a specific place but can be generated anywhere, raise new questions: is solar or wind power a resource which we all could have for generating electricity? Is it costly to generate electricity from these sources? Studies show that existing technology allows generation decentralization for these new energies at an affordable cost, mainly for private consumption in homes and SMEs[3].
This means that people, individually or, more easily, in partnerships, could generate the power needed for their consumption, without the need to transmit it, With the possibility of being able to store any surplus, as well as to feed it into their community network.

This context raises new opportunities for cooperativism, mainly self-consumers of energy from renewable sources, but this paraigm change would also mean that large power companies would lose part of the control they currently have over power generation and distribution. Legislation provides that the actors in the energy sector are large companies and do not allow and hinder the participation of citizens (Huybrechts, 2017). We find ourselves, therefore, facing a conflict of interests which can only be resolved politically[4].

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[2] PRIETO, P. "En la encrucijada entre las energías fósiles y las energías renovables", *La energía. Retos y problemas*. Economistas sin Fronteras, nº 24, Invierno, 2017, p. 11.

[3] GREENPEACE-España. *Energía Colaborativa. El poder de la ciudadanía de crear, compartir y gestionar renovables*. September 2017, p. 4).

[4] That conflict of interest is also appreciated because companies benefit from increased energy consumption, while consumer cooperatives promote energy savings (GREENPEACE-España. *Energía Colaborativa. El poder de la ciudadanía de crear, compartir y gestionar renovables*. September 2017, p. 7).

The need to promote renewable energy is unquestionable, given the finite nature of current energy sources, besides other reasons; the question raised is whether this promotion is also being directed at citizens, and if public policies are committed to decentralized generation of renewables and self-consumption? It is said that self-consumption contributes to making energy systems democratic, and this self-consumption may develop in several ways, one of which is cooperativism[5].

In this study we have attempted to discover whether the legal framework(s) existing in the European Union promotes renewable energy and in particular, whether it promotes the democratization of energy and self-consumption on a cooperative basis?

2. The promotion of renewables in the European Union.

The UN Resolution A/RES/70/1 on Transforming our world: the 2030 Agenda for Sustainable Development, adopted in September 2015 has amongst its goals to ensure access to affordable, reliable, sustainable and modern energy for all by 2030 (Goal 7), which implies among other goals, to substantially increase the percentage of renewable energy in the global energy mix.
Along the same lines, the European Union, also due to its internationally assumed commitments, has been promoting electricity generated from renewables, as a contribution to the reduction in greenhouse gas emissions. It should be pointed out that energy from renewable sources is understood as that from non-fossil renewable sources, such as wind, solar, geothermal, aerothermal, hydrothermal and sea power, hydraulic, biomass, landfill gases, sewage plant gases and biogas.

The first regulations issued for promoting renewables in the European Union were **Directive 2001/77/CE and Directive 2003/30/CE** mainly aimed at fostering the increase in the contribution of renewables in the European Union (21% of total consumption by 2020) but using indicative criteria without establishing binding targets. Later however, the need was envisaged for these targets to be obligatory for States because on making them obligatory not only did it favour compliance, but also it provided security for investors and promoted the development of the necessary technology[6].

Currently, the common European framework for fostering renewables is contained in **Directive (EU) 2018/2001**, which replaces the previous ones. This regulation establishes obligatory national targets with reference to the energy quota in gross final consumption and transmission which must come from said sources and establishes measures to foster them.

The directive recognizes that energy production from renewable sources offers many advantages such as the reduction of non-reneable and polluting sources of energy, and can enable decentralized production by SMEs with proper technology. Decentralized production uses local energy sources; provides greater local supply security; the distances travelled are shorter and energy transmission losses are lessened; it

[5] Numerous studies have demonstrated the suitability of the cooperative model to give legal cover to energy development projects: VIARDOT (2013); YILDIZ (2014); WIRTH (2014); SAGEBIEL, MULLER , ROMMEL (2014); YILDIZ, ROMMEL, DEBOR and others (2015) or SAHOVIC & PEREIRA (2016).

[6] More broadly on the evolution of the European policy on renewable energy, see SOLORIO, I. *La política europea de renovables y su influencia en España y Reino Unido*. Fundación Alternativas. Estudios de Progreso, nº 80/2014, pp. 11-17.

promotes technological development and innovation and generates major opportunities for growth and employment at local level.

In consideration of the advantages of decentralized production of renewables, the Directive requires States to adopt support measures for these initiatives, providing promoters with detailed information about processing requests for authorization, certification and licensing for renewable energy facilities and about available grants; instituting simplified and less onerous authorization procedures for smaller scale projects and for decentralized equipment for energy production, and in general regulating the authorization, certification and granting of licences with objective, transparent and proportionate rules and ones which do not discriminate among applicants.

Notwithstanding, these measures are not considered enough to meet the commitments undertaken in the 2015 Paris Agreement. Investment in renewables fell by 60% between 2011 and 2015, due to the legal insecurity that its regulatory framework generates. Lack of ambition by the Commission and scant support for renewables in general are reported. It must not be forgotten that, although EU Member States, by virtue of the Treaty of Lisbon (2007) assumed powers in energy matters and in particular to promote renewables, they still maintain the right to determine the general structure of their energy supply and to choose **among** various energy sources (art. 194.2 TFEU).

3. Fostering renewables and self-consumption in European Union countries. An uneven framework.

As a consequence of the legal framework described above, and the freedom of Member States to determine their energy supply sources, energy policies adopted by different States have been diverse, rendering the resultant as an uneven framework.

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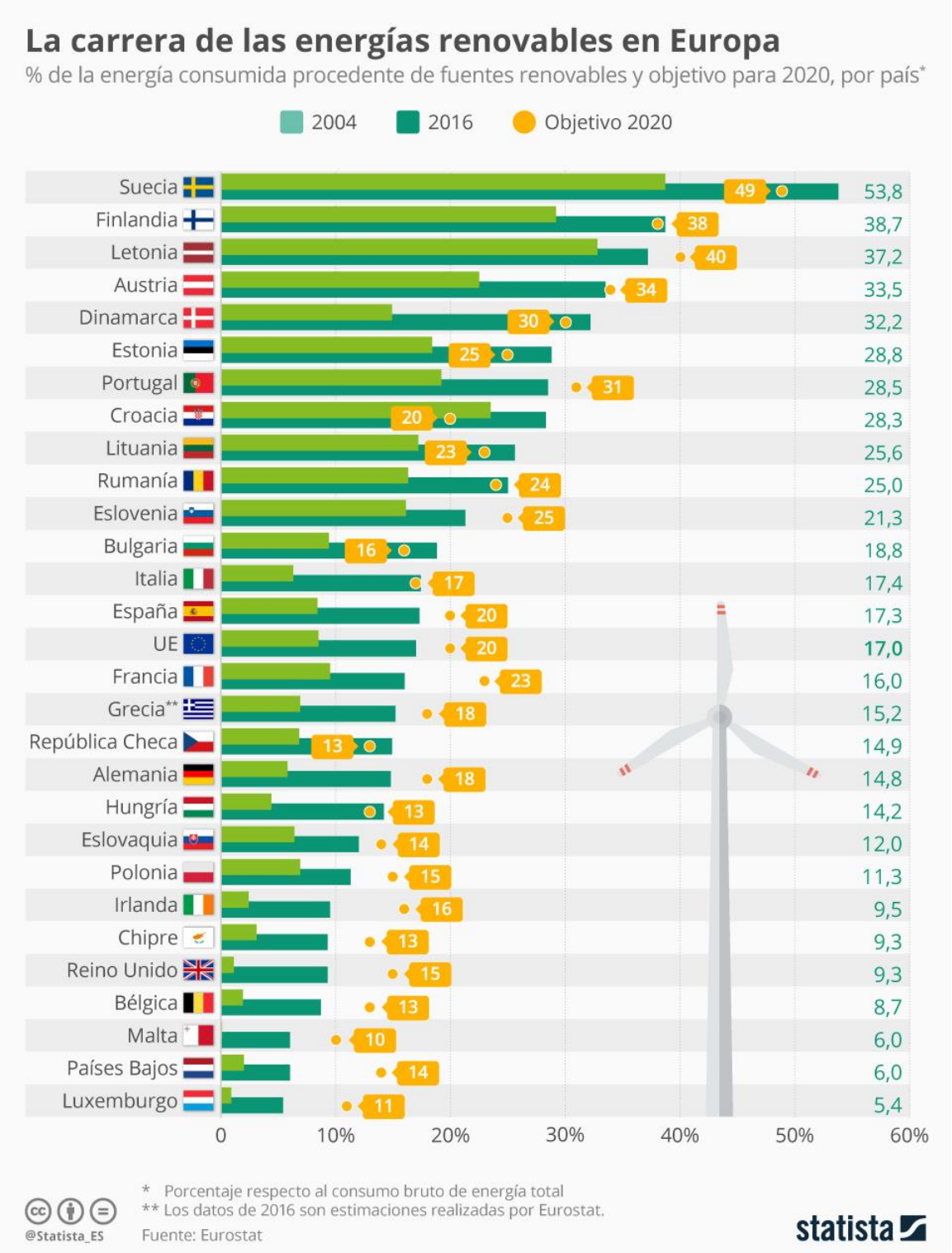
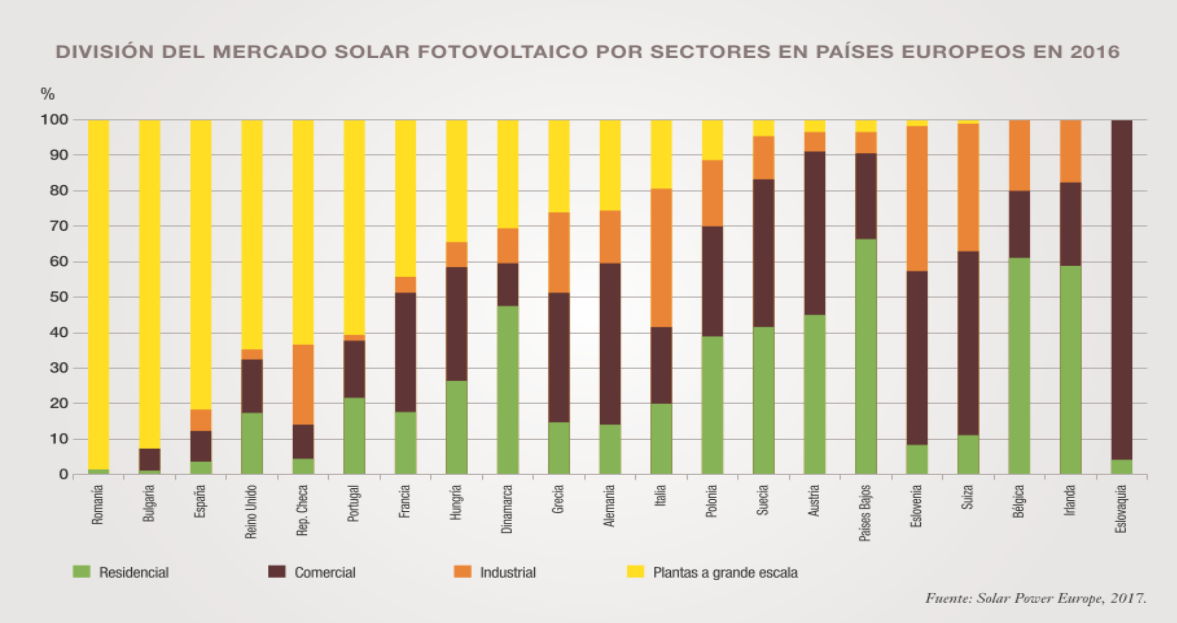
Table 1 shows the various renewable energy consumption targets in the different Member States by 2020 and the results reached in 2016 (according to estimates by Eurostat). So, for example, Sweden has a target for 2020 to cover 49% of its consumption with renewable energy, in 2016 it had already exceeded that target by almost 5 points; meanwhile, Luxembourg, which set a target of 11%, has not even reached half of that.

Table 1. *The race for renewable energies in Europe (% of energy consumed from renewable sources and target for 2020 by country*).



On the other hand, it must be borne in mind that the renewable energy generation system does not always favour decentralization production and private consumption. Table 2 shows how photovoltaic electricity in each State varies according to the nature of production – whether residential or at large-scale production plants.

Table 2. *Division of the solar photovoltaic market by sectors in European countries in 2016*



Residential production will normally be linked to self-consumption, although so can commercial and industrial production. Production at large-scale plants is usually owned by investors and is not linked to self-consumption. This table shows the difference between the Netherlands (Los Paises Bajos) , where the majority of photovoltaic solar production is residential, and Spain (España), where most production is at large-scale plants and residential production is insignificant.

4. New perspectives after passing the Clean Energy for all Europeans Communication in 2016.

The situation generated is not satisfactory because it does not favour the energy transition process and because it is very uneven across the Member States. For this reason, the European Union has set out new challenges.

Thus, recently, the Commission, via the **"Clean Energy for all Europeans" Communication of 30 November 2016,** has passed a wide range of measures with which it intends to accelerate both the transition to clean energy and growth in employment. Among the measures are to be found several legislative proposals relating to energy efficiency, renewables, the shaping of the electricity market, supply security and the regulations governing the Energy Union[7].

[7] An analysis of the consequences that the approval of these measures will have for the legal management of the energy transition in the European Union can be seen in ZAMORA (2018).

This set of measures pursues three main aims: putting energy efficiency first; achieving world leadership in matters of renewables and offering fair treatment to consumers.

In this respect, the Commission proposes to reform the energy market in order to empower consumers and enable them to control their energy options better, which involves not only being able to control their energy costs better, but also having the possibility of playing a more active role in this market. The Communication expressly contemplates consumers producing, storing, sharing, consuming and selling their own energy in the marketplace, and them being able to do so directly, or via "energy cooperatives" or other formulas.

This legal framework opens up important prospects to individuals and professionals to be able to actively take part in the energy sector, and to do so via cooperative organizations, either as consumers, or producers, or as service providers to the above. But in particular, at this moment, we are interested to know more about the possibilities of setting up self-consumer cooperatives or "prosumers", that is cooperatives made up of persons or SMEs that produce and consume their own energy and who can also store or sell any excess in the marketplace.

4.1. Citizen participation in renewables from a legal perspective.

Responding to the aforementioned targets, directive proposals have been submitted from both the European Parliament and the Council, adopted on 23 February 2017, which include the announced developments.

On the one hand, the recast Proposed Directive on the promotion of the use of energy from renewable sources (COM (2016) 767 final); and on the other, the Proposed Directive, also recast, on common rules for the internal market in electricity (COM (2016) 864 final).

The first Proposal (PDFER) substantially modified the Directive on renewables (2009/28/EC)[8]; while the second (PDMIE) modifies and recasts the Regulation of electricity (R. 714/2009), the Directive on electricity (2009/72/EC) and the Regulation establishing an Agency for the Cooperation of Energy Regulators (ACER) (R. 713/2009). The first has been approved as directive 2018/2001, of December 11 (DFER), and is planned to come into effect on 1 January 2021, and latest by 30 June 2021, by when the national provisions needed to enforce the Directive must be enacted and enforced. The second directive will come into effect 20 days from the publication date in the Official Journal of the European Union, and Member States will have 12 months from its coming into effect, to enforce most of what is established in the directives.

The aim of both texts is to promote active citizen participation in the energy sector. The PDMIE defines standards in consumer education and protection, and on their open access to the integrated market (art. 1);

[8] Despite the progress made, this Directive has been described as not very ambitious and lacking in incentives to compensate for negative externalities that do not generate renewable energies (CASTRO-GIL, J. "Alcance de la Directiva, predictibilidad y competitividad del sector renovable europeo" en FER. *Directiva Europea sobre Energías Renovables. Desafío y oportunidades*, Madrid, 14 de diciembre de 2016, pp. 14)

whilst the DFER establishes rules on financial help for electricity obtained from renewable sources and self-consumption of renewable electricity (art. 1).

Citizen participation in the renewable energy market can cover several activities (production, consumption, storage and sale) and may be undertaken directly or via legal entities such as cooperatives. European regulations have coined two new concepts to differentiate these two ways of participating: "self-consumer of renewable energy" and "communities of energy from renewable sources".

4.2. The self-consumer of energy from renewable sources.

The self-consumer of energy from renewable sources was defined in PDFER as an active consumer, or group of consumers, who act jointly, who consume and may store and sell renewable electricity generated at their own facilities, including multi-apartment blocks, residential areas, commercial, industrial or shared services sites, on the same closed distribution networks, provided that, in the case of self-consumers of renewables that are not homes, and that, the said activities do not constitute their main commercial or professional activity (art. 2.2aa PDFER). However, the text that was finally approved reduces the possibilities of shared self-consumption because self-consumers have to meet "*in the same building or multi-apartment block*".

The self-consumer is also identified as a "prosumer", an acronym formed from the original blend of the English words producer and consumer. In both cases the term highlights the dual condition of producer and consumer but, said concepts as defined in the regulations we are commenting on, contemplate other typical activities of the self-consumer such as storage of the energy produced and sale of unused energy.

The PDMIE considers that, despite the fact that a growing number of consumers use roof solar panels and batteries to store energy, self-generation is still hindered by the absence of common rules for "prosumers". In its opinion these barriers would be removed if we could guarantee the right of consumers to generate power for their own use and sell the excess to the grid, calculating costs and benefits for the system as a whole.

To guarantee the right to self-consumption of energy is an aim in both proposals.

Thus, the PDMIE in article 15 requires Member States to guarantee that final customers have the right to generate, store, consume and sell self-generated electricity on all organized markets whether individually or via aggregators (jointly), without being subject to disproportionately onerous procedures or charges that do not reflect the costs; and are subject to access tariffs to the grid that reflect transparent and non-discriminatory costs, accounting separately for the electricity supplied to the grid and the electricity consumed from the grid.

For its part the DFER in article 21 also establishes several obligations of Member States in favour of self-consumption of renewables.

Firstly, that they guarantee the right of all consumers to become self-consumers of renewables.

Secondly, they must guarantee that self-consumers of renewables, whether they act individually or jointly, are entitled to "generate renewable energy, including for their own consumption, store and sell their

excess production of renewable electricity; to maintain their rights and obligations as final consumers, and to receive remuneration for the self-generated renewable electricity that they feed into the grid".

Third, self-consumers will not be subject, "*in relation to the electricity that they consume from or feed into the grid, to discriminatory or disproportionate procedures and charges, and to network charges that are not cost-reflective*", while in relation to their self-generated electricity from renewable sources remaining within their premises, they will not be subject "*to discriminatory or disproportionate procedures, and to any charges or fees*". However, Member States may apply non-discriminatory and proportionate charges and fees for this last energy, in several cases: "*a) if the self-generated renewable electricity is effectively supported via support schemes; b) from 1 December 2026, if the overall share of self-consumption installations exceeds 8 % of the total installed electricity capacity of a Member State, and if it results in a significant disproportionate burden on the long-term financial sustainability of the electric system, or creates an incentive exceeding what is objectively needed to achieve cost-effective deployment of renewable energy, and that such burden or incentive cannot be minimized by taking other reasonable actions; and c) if the self-generated renewable electricity is produced in installations with a total installed electrical capacity of more than 30 kW*".

As we see, the right to self-consumption is recognized, but conditioned to be compatible with the sustainability of the electrical system.

Fourthly, Member States shall ensure that renewables self-consumers located in the same building, including multi-apartment blocks, are entitled to engage jointly in the generation, consumption, storage and sale of the generated energy, "*and that they are permitted to arrange sharing of renewable energy that is produced on their site or sites between themselves*".

Fifthly, the renewables self-consumer's installation "*may be owned by a third party or managed by a third party for installation, operation, including metering and maintenance, provided that the third party remains subject to the renewables self-consumer's instructions. The third party itself shall not be considered to be a renewables self-consumer*".

Finally, Member States must assess the existing barriers and the potential development of self-consumption in their countries in order to establish a framework which enables the fostering and facilitating of the development of renewable self-consumption. This favourable framework "*shall address accessibility of renewables self-consumption to all final customers, including those in low-income or vulnerable households; unjustified barriers to the financing of projects in the market and measures to facilitate access to finance, or incentives to building owners to create opportunities for renewable self-consumption, including for tenants*". This favourable framework must be part of the national integration plans on climate and energy, and shall include certain measures set out in the Directive.

4.3. Renewable energy community (REC). Characteristics.

We have seen how consumers can act directly in the renewables marketplace, producing, consuming, storing and selling the energy produced. In these cases, they are called "self-consumers". A self-consumer may act individually or jointly because several persons may jointly produce, consume, store and sell as a group renewable energy generated at their own facilities, while still being self-consumers.

But European regulations also contemplate that a group of people constitute a renewable energy community. A renewable energy community was defined in the PDFER as "a local energy community", that is, an association, cooperative, company, not-for-profit organization or other legal entity that is in effect controlled by shareholders or local members, generally aimed at values more than profitability, and are devoted to distributed generation, conduct of activities typical of a distribution network manager, supplier or local aggregator, even at cross-border level (art. 2 PDMIE). However, the text that was finally approved dispenses with the expression "*local community*" and does not list possible legal forms.

The energy community is defined as an autonomous legal entity which, in accordance with the applicable national law, is based on open and voluntary participation and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects. These projects must be owned by the legal entity and be developed by it.

The members of the energy community can be natural persons, local authorities, including municipalities and SMEs, provided that, in the case of private companies, "their *participation* does not constitute their main commercial or professional activity".

Finally, the primary purpose of an energy community is "*to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits*".

Although cooperatives are not expressly stated, it is the legal form that can best meet the characteristics attributed to the energy community: voluntary and open accession, service to its members and the community, economic and social purposes, or democratic control (Cusa, 2018).

4.3.1. The recognition of renewable energy communities.

The DFER orders Member States to guarantee that final customers, in particular household customers, "*are entitled to participate in a renewable energy community while maintaining their rights or obligations as final customers*", and without being subject to unjustified or discriminatory conditions or procedures that would prevent their participation in a renewable energy community (art. 22.1).
In addition, Member States must guarantee that renewable energy communities are entitled to produce, consume, store and sell renewable energy; access all suitable energy markets both directly or through aggregation in a non-discriminatory manner, and share, within the renewable energy community, renewable energy that is produced by the production units owned by that renewable energy community.

Therefore, Member States cannot prohibit consumers from sharing energy or demand unjustified rates or guarantees, the amount of which discriminates against them, as is the case in Portugal and until recently also in Spain (Meira, 2018 and Fajardo, 2018).

4.3.2. The promotion of energy communities.

The DFER requires the Member States to carry out an assessment of the existing barriers and potential of development of renewable energy communities in their territory, which provide an enabling framework to

promote and facilitate the development of renewable energy communities. The main elements of this framework should form part of the updates of the Member States' integrated national energy and climate plans and progress reports pursuant to Regulation (EU) 2018/1999[9].

The Directive identifies some measures that should be included in this facilitative framework that are aimed at eliminating unjustified obstacles, guaranteeing a non-discriminatory treatment of energy communities; provide consumers with information and participation in communities, as well as access to financing. States with their promotion or restriction policies can achieve both the deployment of energy communities and their contraction, as experience shows (Hanisch, 2017).
Finally, the Directive provides that, when designing support schemes, Member States take into account specificities of renewable energy communities in order to allow them to compete for support on an equal footing with other market participants (art. 22.7).

If, moreover, we are faced with a local "electricity" community, the PDMIE will have to be considered, which establishes in article 16 certain obligations on States, such as guaranteeing that local energy communities:

a) have the right to own, create or hire community networks and to manage them independently;

b) may access all organized markets directly or via aggregators of suppliers in a non-discriminatory fashion;

c) benefit from non-discriminatory treatment in respect of their activities, rights and obligations as final customers, generators, managers of distribution networks or aggregators;

d) are subject to fair, proportionate and transparent procedures and to charges that reflect costs.
For its part, art. 16.2 PDMIE orders Member States to draw up a favourable regulatory framework which guarantees, among other things, that participation in a local energy community is voluntary; that shareholders or members of a local energy community do not lose their rights as domestic customers or active customers, being applicable in such cases, the rule governing the right to change supplier.

[9] This facilitating framework must guarantee, among others, that: "*a) unjustified regulatory and administrative barriers to renewable energy communities are removed; b) renewable energy communities that supply energy or provide aggregation or other commercial energy services are subject to the provisions relevant for such activities; c) the relevant distribution system operator cooperates with renewable energy communities to facilitate energy transfers within renewable energy communities; d) renewable energy communities are subject to fair, proportionate and transparent procedures, (…) and cost-reflective network charges, as well as relevant charges, levies and taxes, ensuring that they contribute, in an adequate, fair and balanced way, to the overall cost sharing of the system in line with a transparent cost-benefit analysis of distributed energy sources developed by the national competent authorities; e) renewable energy communities are not subject to discriminatory treatment with regard to their activities, rights and obligations as final customers, producers, suppliers, distribution system operators, or as other market participants; f) the participation in the renewable energy communities is accessible to all consumers, including those in low-income or vulnerable households; g) tools to facilitate access to finance and information are available; h) regulatory and capacity-building support is provided to public authorities in enabling and setting up renewable energy communities, and in helping authorities to participate directly, and i) rules to secure the equal and non-discriminatory treatment of consumers that participate in the renewable energy community are in place*" (art. 22.4).

5. New perspectives for energy cooperativism in self-consumption in European Union countries.

As we have seen, European institutions are committing off late to the development of renewables and for active consumer participation in said sector, directly or as part of local communities which could be cooperatives.

To date, the promotion of renewables and self-consumption has depended on national policies, which generate/create major differences between States, as seen earlier. Some countries have promoted renewables more than others and among these, some have favoured decentralized production and other centralized production.

The promotion or not of one system of production or another does not arise solely from the existence of grants, but also from the information which is given to producers and consumers, from the facility to install, and from the financial conditions or taxes and fiscal levies and of other kinds that are applied. Normally these have been administrative barriers and lack of legal security in the face of sudden changes in support systems which have contributed most to discourage investment by savers in these new renewable energy generation systems.

Recognition by European institutions of the right to self-consumption in the proposed directives will oblige Member States to implement a legal framework that foresees the right of citizens to generate, consume, store and sell their own power, individually or in groups, including setting up energy communities.

In this new context where cooperatives take on greater prominence, and in particular for the generation and consumption of photovoltaic energy. This the most common technology for self-generation in the European Union. In 2013 almost a quarter of the additional solar capacity in Europe was installed in the residential sector: in single dwelling houses or housing comprising several storeys. Self-consumption has contributed significantly to the development of photovoltaic solar energy in countries like Germany, Denmark, Holland, Belgium and Italy.

A study drafted by the Critical Energy Observatory in October 2016 entitled "Self-consumption that democratizes the electricity system. Lessons learnt from international experience", analysed self-consumption in Germany, California (USA) and Cyprus, and highlighted that one of the main factors that has enabled the success of energy transition in Germany has been citizen participation. Of all the installed renewable power in Germany in 2012, 47% was in the hands of citizens and cooperatives, which enabled the evolution from a markedly oligopolistic system to a more democratic one. It also shows that one of the aspects that has favoured participation by citizens, farmers and consumer cooperatives is the existence of a simple and stable retribution system for the generated energy[10].

The European Economic and Social Committee, in an Opinion on "Prosumer Energy and Prosumer Power Cooperatives: opportunities and challenges in the EU countries" (2017/C034/07), highlighted the

[10]http://www.observatoriocriticodelaenergia.org/files_download/Un-autoconsumo-que-democratice-el-sistema-electrico.pdf

economic benefits of prosumer energy (the reduction in energy transmission costs, better use of local energy sources or professional activation of the local community), and proposed that one of the possibilities for intensifying the development of prosumers is the creation of prosumer partnerships, which take on the form of energy cooperatives or other legal entities. In this way, by working as a partnership, prosumers obtain better prices, are more efficient and participate directly in the improvement of local energy security. This Opinion analyses the characteristics of energy cooperatives, taking as a reference point those existing in Germany. It thus points out that the aim of cooperatives is not to maximize benefits but mainly, to provide economic aid and support to its members. Regarding funding, the examples analysed show that one in every four energy cooperatives was funded exclusively by contributions from their members, while others combined member funding and funding from credit cooperatives. Another prominent feature of these cooperatives is the presence of town councils as partners, and not only to ensure that municipal roofs and buildings are available for the installation of solar panels, but because often mayors are the ones who take the initiative to create energy cooperatives and try to convince the local population on the matter[11]. One of the reasons that lies behind setting up energy cooperatives is the opportunity to obtain energy at a lower price[12].

A study conducted in 2013 by the Cooperatives Unit of the International Labour Office (ILO) analysed the different types of energy cooperatives in view of whether they are production cooperatives, distribution cooperatives, energy purchasing or service provider cooperatives, and in view of the type of cooperative model (e.g. energy consumer cooperatives); energy source (e.g. solar cooperatives); activities and position in the value chain (e.g. purchasing cooperatives), and by actors or owners and services provided (e.g. rural electric cooperatives). Later on, it analysed a series of cases of electrification and production cooperatives in different countries of the world, as well as measured (direct and indirect) for promoting energy cooperatives by the State, the cooperative movement and international organizations. It highlighted that one of the reasons why these entrepreneurial initiatives for energy self-consumption opted for the cooperative model was because democratization of energy was being increasingly in demand, and cooperatives favoured the empowerment of people and their participation in management on equal terms; as well as, that there was an increasing public interest in finding community-based energy solutions under local ownership which had given rise to new energy regulations and support measures drawn up for renewable energy and an awareness of environmental issues and climate change.

The study concludes with several recommendations, but mainly demands a suitable legal framework for the development of these cooperative initiatives which include support measures, both technical and financial[13].

Neither can we forget the potential that cooperative associations and inter-cooperation has for the development of new cooperative experiences and learning by spreading best practices. In this respect it is worth quoting the existence of REScoop, the European Federation of Renewable Energy Cooperatives,

[11] Indeed, in many cases municipalities have been pioneers in acting and adopt policies to support renewable (ROMEA, J. "El papel del ciudadano en la Directiva como motor del cambio del modelo energético" en *Directiva Europea sobre Energías Renovables. Desafío y oportunidades*, Madrid, 14 de diciembre de 2016, p. 20)

[12] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016IE1190&from=ET

[13] http://www.uwcc.wisc.edu/pdf/providing%20clean%20energy%20through%20cooperatives.pdf

which brings together both individual cooperatives and federations of cooperatives, and which offers help to promote cooperatives of this kind (https://www.rescoop.eu/starters).

These new perspectives are contributing to Member States recognizing and promoting energy self-consumption and energy communities. A clear example has been Greece, which on 22 January 2018 passed Act No. 4513 on Energy Communities. These should be set up as cooperatives and whose exclusive aim is: to promote a social and solidarity-based economy and innovation in the energy sector; advance the struggle against energy poverty and promote sustainable energy; production, storage, self-consumption, energy distribution and supply; to increase energy self-sufficiency and safety in the municipalities of the islands; as well as the improvement of energy efficiency in final use in local and regional spheres (art.1). As Ifigenia Douvitsa summarizes (2018), the new law aspires to achieve the following goals: to enable the country's transition to green energy; to promote citizens, municipalities and local businesses to participate in the energy transition and energy planning through their direct active involvement; to address energy poverty, and to facilitate the island regions' energy autonomy.

Despite the uncertainty arising from the compatibility of the Greek energy community, as outlined in this act, with cooperative principles (Frantzeskaki, 2018) what is certain is that this law makes energy democracy possible and enables the local interested parties, as well as citizens, municipalities and local small and medium-sized companies to take an active part in the energy transition through energy projects, mainly from renewable energy sources.

The energy community allows projects to be developed which are not available for individual or group self-consumers, for instance, to possess power generators which are not found at the actual point of consumption but in the vicinity, or to share energy although not in the same building. But the energy community may, as in Greece, perform many other social activities typical of cooperatives, such as: *providing education and raising awareness on topics related to energy sustainability; supporting vulnerable groups of the population, and addressing energy poverty. Ultimately, the energy community, with its local and integrating focus on all the interested parties (citizens, municipalities, small and medium-sized businesses) is a valuable instrument for territorial development. A good example of an energy community in Greece is the Sifnos Energy and Development Cooperative, Coop. Ltd.* This community values in particular the legal form of cooperative (civil or urban) that they adopt, because this prevents them from being purchased as a capital company and because unlike social cooperatives they can, under certain conditions, distribute profits (http://sifnosislandcoop.gr/en/#legal).

6. Energy cooperativism in Spain.

"Cooperativism in the electricity sector has found presence in Spain since the beginning of the 20th century when it enabled energy to reach many homes and businesses. Many of these cooperatives have survived and have kept with the times. These cooperatives produce, distribute and sell 100% renewable energy to their members and have contributed effectively over these years to the welfare of their members and towards the development of the environment where they are located.

Along with these cooperatives, several new cooperatives engaged in the sale of renewable energy for their members, as well as those in its production were established by 2010.

Energy cooperatives offer several services to their members beyond energy supply from renewable sources, such as training and joint purchasing. Other cooperatives have also developed around the energy sector in the last few years, such as (mainly) associated work cooperatives that are engaged in advisory services, management and/or energy education.

Despite this progress, the regulations programmed by European institutions on energy matters seem to offer cooperativism with fresh opportunities for the development of activities that were until recently forbidden in Spain such as shared self-consumption; or were not recognized, such as energy communities".

In Spain, the rules governing the conditions for the production and self-consumption of renewable energies have not been as stable as they should have been so far in generating confidence in investors, nor have they promoted individual or collective self-consumption of renewable energies. Furthermore, self-consumption was recognized in 2013 (Act 9/2013 on the Electricity Sector) and was not developed until 2015 (Royal Decree 900/2015). But these regulations are not favourable, because they levy tax both on self-consumption (the "sun tax") and on energy storage; they oblige surplus energy to be supplied to the grid and expressly forbid shared self-consumption. This situation has started to change with the new government in Spain. Thus, in October 2018 (Royal Legislative Decree 15/2018) many obstacles to self-consumption were suppressed, especially to self-consumption that does not supply power to the electricity grid; it contemplates a net balance for installations with less than 100kW, and it expressly recognizes shared self-consumption. However, complete application of this law depends on the development of the rules to be drawn up. A proposed regulation was published for public consultation from 29 January 2019 to 8 February 2019, but on 15 February the dissolution of parliament was announced, and general elections were called. Hence, we will have to wait to know what the future of self-consumption of renewable energy in Spain.

Moreover, it must be pointed out that although the latest regulation passed in Spain favours self-consumption and even shared self-consumption, there is no mention of energy communities. Energy communities as defined in the Renewable Energies Directive (RED) offer possibilities which today a cooperative in Spain cannot undertake. Thus, it would be advisable that as in Greece, Spain too were to recognize and promote these organizations. However, as already stated, the political situation in Spain at the moment has created uncertainty about whether the renewable energy sector will continue to advance in its decentralization.

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