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SHAPING SMARTER GRIDS FOR YOUR FUTURE

**Position Paper**

# DSOs as facilitators of energy communities

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# Introduction

The European Commission has indicated a shift in the role of citizens from passive consumers to active participants as they are increasingly confronted with the changes of the energy transition. In the Clean Energy Package (CEP), the European Union (EU) acknowledges for the first time the role that energy communities can play in helping the EU to meet its climate and energy objectives while driving local social innovation.

The implementation of the EU's climate and energy policy objectives entails a transition to a low-carbon energy system in which renewable energy sources play an important role and new technologies are developed and implemented. As these changes mostly occur on the distribution grid, this new energy system contains a high level of decentralisation in which the roles of energy producers and consumers will inevitably have to change. The EU's starting point is that the customer is at the heart of the energy transition and some of them are already playing an active role, for example in the production of renewable energy or the management of local networks.

To this end, the CEP has introduced two new definitions: "*Renewable energy communities*" (RECs) and "*Citizen energy communities*" (CECs). The recast Renewable Energy Directive 2018/2001 (REDII)[1] and the recast Internal Market Directive 2019/944 (IMD)[2] contain provisions that establish a supportive legal framework for energy communities. As energy communities are a span-new concept and in most Member States, however, the application of the above legislation will be challenging. Many questions are currently being asked about what energy communities are, how to define them, what activities they should be able to participate in, how they should be regulated, and how their development should be supported.

**The leading electricity distributors as facilitators of the energy transition, represented by E.DSO, are closely following the development of energy communities across Europe**. **Those communities can create great value and help citizens become more actively engaged in the energy transition. DSOs have a key role to play in enabling their proper development**.

The aim of this paper is to illustrate the commitment of DSOs, as neutral market facilitators, to proactively enable the implementation of energy communities. To this end, it explores the newly implemented legal framework, the natural relationship of energy communities and DSOs and the opportunities and challenges that shape it.

## 1. Energy communities and the Clean Energy Package

The IMD defines the legal concept of "*Citizen energy communities*" (CEC) **in Article 2 (11)** and associates it with a set of rights, privileges, and responsibilities in Article 16. The RED II defines the legal concept of "*Renewable energy communities*" (REC) in **Article 2 (16)** and relates it to a set of rights, privileges, and responsibilities in **Article 22**.

Both definitions comprise a set of criteria that should be met to become an energy community. The first principle-based element for both concepts is the establishment of a legal entity. Additionally, the legal entity should be organised around specific ownership and governance principles and exempted from any (primary) commercial purpose. Together, both definitions convey a similar concept: a particular way to organise collective ownership around a particular energy-related activity. Consequently, some of the elements in the REC and CEC definitions are identical, or very similar. For instance, the REC and CEC

[1] https://eur-lex.europa.eu/eli/dir/2018/2001/oj
[2] http://data.europa.eu/eli/dir/2019/944/oj

frameworks were primarily intended to benefit citizens, small businesses, and local authorities – not larger utilities and energy service companies, or larger industrial and commercial businesses.

Nonetheless, there are also material differences between the REC and CEC. CECs can operate across the electricity sector and do not have a technology-specific focus, while RECs engage specifically on renewable energy (and thus extend beyond the electricity sector). Furthermore, RECs are rooted within a local context (close to renewable projects), while no such requirements explicitly exist for CECs. In governance terms, RECs represent a subset of CEC because RECs are generally stricter in terms of eligibility, requirements for effective control at local level, and democratic governance. When looking at permitted activities, CECs are enabled, if their Member State decide so, to own, operate and manage an electricity distribution network, while this is not possible for RECs.

| | **Citizens Energy Communities (CEC)** | **Renewable Energy Communities (REC)** |
|---|---|---|
| **Legal basis** | Internal Market for Electricity Directive (IMD) | Renewable Energy Directive (REDII) |
| **Legal form** | Any | Any |
| **Purpose** | Social, economic, and environmental benefits for members/shareholders or the local area in which it operates | Social, economic, and environmental benefits for members/shareholders or the local area in which it operates |
| **Ownership** | Natural persons,<br>Local authorities,<br>including municipalities, or small enterprises and microenterprises | Natural persons,<br>Local authorities (*including municipalities, or small enterprises and microenterprises*),<br>provided that for private undertakings their participation does not constitute their primary commercial or professional activity. |
| **Autonomy** | Large energy companies cannot exercise any decision-making power | Explicitly mentioned |
| **Activities** | Generation, distribution (depending on the Member State decision), supply, consumption, sharing, aggregation and storage of electricity<br><br>Energy-efficiency services, EV charging services, other energy-related services (commercial) | Generation, distribution, consumption, storage, sale, aggregation, supply and sharing of renewable energy<br><br>Energy-related services (*commercial*) |
| **Geographical limitations** | No geographical limitation | To be located in the proximity of projects owned and developed by the community |
| **Technologies** | Technology neutral | Limited to renewable energy technologies |

As one of the fundamental assumptions of the energy community is to strive to meet the energy needs of its members, which means involvement in the production of energy for the needs of the community, it was rightly provided with the possibility of sharing energy amongst its members. Several opportunities provided by CEP to involve citizens in such ways in the energy transition exist, for instance individual renewable self-consumption and Collective Self-Consumption (CSC). These new concepts provide opportunities for all market actors, including commercial and non-commercial business models. Important for initiatives focusing on citizen and consumer ownership to be effective, national legislation and policy needs to clearly differentiate energy communities from other concepts.

The CEP brings significant benefits for the customer and the environment. It implements a legal framework for new concepts to their benefit, recognises the increasingly important role of DSOs, especially in integrating renewables into the system. Since more than 90% of the renewables are connected at the distribution level, a good cooperation between customers, market parties and DSOs are essential.

To operate effectively, energy communities should have access to all energy markets, directly or through aggregation, while their members maintain their rights and obligations as end-users, generators, suppliers, distribution system operators or market participants involved in aggregation. The energy community, being a legal market participant, should be financially responsible for the imbalance causes in the power system. This means that, as in the case of other market participants, the communities should be the entity responsible for balancing, and if not, it should delegate this responsibility to another party.

## 2. Current State of Play

Most of the provisions of energy communities have not yet been transposed in all EU Member States or, where they have been, have followed different legislative developments. Thus, **their concrete implementation is still ongoing.** Citizen energy communities have received less attention so far in the national legal processes, despite the earlier deadline for transposition of the IMD recast as compared to the REDII. However, at the time of writing legislative proposals for CECs are emerging in e.g. France, Austria, Belgium, and the Netherlands.

### 2.1 There are currently various types of energy communities.

Energy communities as a tool already exist in all shapes and sizes in the legislative framework of EU Member States. Many modalities in the implementation of the concept of energy communities result in strongly different concepts. In total, a dozen of different types of energy communities can be distinguished, ranging from collective trading and cooperative financing, over energy islands and municipal utilities, to energy-positive districts. Each of these types allows different business cases, different technologies, and different pathways to accelerate the energy transition. It can therefore be beneficial to distinguish between different types of energy communities. Below are some examples provided:

- **Size**: a small enterprise serving 100k consumers, or a cooperative run by several passionate volunteers who are active with a photovoltaic (PV) panels projects on a big building.
- **Portfolio**: focussing on generation and sharing of electricity and/or other portfolio elements such as offering flexibility to system operators.
- **Infrastructure**: with or without grid ownership.
- **Market Model**:
  - Being the energy supplier to its members and acting in that market model, ensuring that they are entitled to leave the community at any time.
  - A market model with multiple suppliers simultaneous active on one connection (but possibly different allocation points).
  - Sharing generated energy only within the community or also interacting with the market.

### 2.2 The benefit of flexibility for the whole energy system

The need for an increase in controllable generation and load on the demand-side, demand-side flexibility, is becoming more urgent due to the rise of intermittent renewables and an increased electrification. E.DSO considers that flexibility can be deployed for multiple purposes and be used to serve a variety of customers and energy markets. For example, flexibility can be offered to the DSOs, Transmission System Operator (TSO) or Supplier / Balance Responsible Party (BRP) who can then use it for their needs. Strong cooperation between energy communities and system operators is therefore essential to ensure that this new type of actor will contribute to the stability of the whole energy system by allowing it to offer its flexibility.

# 3. DSOs and Energy Communities: facilitating the energy transition together

As the electricity distribution network is the direct link between energy consumers on the one hand and electricity generation and transmission on the other, it comes as no surprise that distribution system operators (DSOs) often stress the key role citizens will play in the energy transition.[3] DSOs are the designated entities tasked with ensuring the independent operation and planning of the distribution grids as well as the non-discriminatory treatment of anyone who wishes a connection and transport capacity. DSOs can therefore be seen as neutral market facilitators.

Being natural partners, DSOs are committed to ensure a smooth cooperation with community and their successful integration into the distribution network (as well as the energy system as a whole). The following section deals with some of the opportunities and challenges that we currently perceive.

## 3.1 Energy communities as an important actor for the energy transition

Energy communities, set up by individuals or groups, private households, small businesses, and local authorities, are expected to play an important role in the energy transition and bring broad economic, social, and environmental benefits to local communities. An elaboration on some of the opportunities can be found below, including some specific contributions to the work of DSOs.

### *3.1.1 Benefits for the transition of the energy system*

- **Enable active customers**: Active customers are a fundamental and integral part of energy communities, and their increased participation is important for support for the energy transition. This so-called activation could either be explicit by the customer themselves or implicit through energy service providers. Experience from several demonstrations shows that customer activation is much easier and with greater impact when he/she connects with a local community sharing the same ambitions.

- **More valuable flexibility actors**: Customers do not only become more active on the supply side, but they are also a valuable source of flexibility for the energy system, adjusting demand patterns to system needs. With aggregated flexibility, the energy community could act on flexibility markets with lower risks and higher value to the benefit of not only the energy communities themselves, but also the other market actors including the DSOs and thereby the energy system as a whole. This is increasingly needed in the future where we anticipate an energy system that is mainly based on volatile renewable energy sources and that is highly electrified.

- **Connection optimization**: New connections could be realized faster as energy communities can aggregate and optimise their supply and demand. This optimization in conjunction with DSOs should make a positive contribution to the overall efficiency level of the energy system as opposed to building parallel infrastructures when there is little or no coordination/cooperation.

- **Improved quality of supply**: The expected flexibility within an energy community will support both the quality of electricity supply within the community itself as well as for the area surrounding it. This especially holds true for **isolated areas**: where the connection to the grid is subject to uncertainties, for instance for islands connected with subsea power lines, the implementation of an energy community combined with a grid connection increases quality of supply.

From a customer point of view, DSOs can provide them with high quality facilitatory services to help them become an integral part of the energy system. In the Clean Energy Package, DSOs have specifically been

[3] E.DSO (2020), 'Lead the Transition – Serve the Customers, available at: https://www.edsoforsmartgrids.eu/e-dso-publishes-brochure-on-dso-services-for-our-customers-lead-the-transition-serve-the-customers/.

called upon to cooperate with energy communities and to facilitate electricity transfers between their members.[4] While administrative facilitation of the energy markets is nothing new for DSOs - most of wholesale and retail processes in the energy sector depend on regulated data services provided by DSOs - facilitating these peer-2-peer transactions can be considered a novelty. It requires extensive tracking and tracing of electricity production and consumption with a much higher granularity than today. DSOs are fully committed to facilitating these decentralised energy exchanges with existing and new market facilitation services.

#### *3.1.2 Opportunities for the DSOs' mission*

Specifically for the DSO the opportunities could, if correctly enabled, be:

- **Improved load local balancing:** More predictable and balanced electricity profiles support the DSOs system operations.
- **More flexibility providers:** Market actors with lower risk, i.e. better control, provide higher value for the DSOs as providers of flexibility services. The optimization built into the energy communities support this lower risk profile.
- **Quicker connections:** More active customers, as part of an energy community or separate, willing to contribute to the flexibility needs in the system will be easier to accommodate as their supply and demand is already optimised on a connection level.
- **Investment optimization:** With better understanding of the network, profiles with a "built-in" aggregation of network utilization (through internal energy community flexibility) will help the DSOs to make the correct investment decisions in the right time.
- **Increase of resilience:** Through network connection development in conjunction with energy community flexibility, the increase in resilience could materialize faster in both day-to-day operations and in times of critical operation when temporary islanding would benefit all.

It should also be recognized that the above opportunities are expected to dynamically improve and mature as the energy transition progresses and new possibilities are innovated.

## 4. Remaining challenges

There are some challenges that have previously been identified during the legislative discussions that remain unclear even after ongoing implementations at national level. Indeed, both the RED Directive and IMD Directive provide a regulatory framework to apply to energy communities, but some aspects have not been assessed yet. A right balance should be found between facilitating the implementation of these new entities in national legislation and at the same time ensuring the stability and safe operation of the energy system and not distorting the existing market. Two challenges that should be carefully addressed are dealt with below.

### 4.1 Specification of roles and responsibilities

We believe that a successful energy transition is built upon a foundation which is perceived fair by everyone involved. As the EU legal framework is not complete, the responsibilities and roles sharing between stakeholders is not yet defined. It brings complexity when the purpose to facilitate the implementation of energy communities takes precedence over the coherency of the rules and the current system. We believe that new players should be subject to fair and proportionate rules and should be covered by appropriate regulation where necessary. To that end, a clear definition of roles and

[4] Article 16(1d) of the IMD and article 22 (4d) of the RED II.

responsibilities is necessary to create a level playing field for all and to ensure the long-term stability of our energy system.

The CEP enables energy communities to procure several activities such as grid operation, supply, generation, linked to renewable energy or not, implying a risk for confusion of roles. Indeed, a legal entity could be the same supplier, generator, or distribution system operator within the community. From the distribution perspective, CECs, when allowed to become distribution system operators. (**Art. 16 Directive 2019/944**), should adhere to the same obligations and fulfill the same responsibilities as other distribution system operators.

The need for a clear separation, or "unbundling" which has been previously expressed in EU legislation (Third Energy Package), aims at separating competitive activities from activities where competition is not possible or allowed, preventing monopolistic activities. Separation ensures equal access to infrastructure for all competitors (especially suppliers and generators) to the benefits of end-users. **Having unbundled activities, grants consumers protection of their rights.** They have - for instance - the possibility to change supplier and here to leave the energy community. We believe that when decision makers want to facilitate the development of these communities, they should also take into consideration other regulations which are in place to protect consumers' interest.

Roles and responsibilities applying to ECs should be the same than those applying to other "classical" utilities. As concrete examples, providing energy communities with a "distribution license" with adapted tasks and responsibilities could threaten the national network system's balance secured by tasks and obligations imposed to DSOs. These responsibilities have their "*raison d'être*" and creating exemptions to certain energy community DSOs will eventually impact the service provided to all consumers. If an energy community wishes to act as a DSO, it should comply with the same rules applying to them, including the same administrative and regulatory processes since they are a guarantee of security of supply and high quality of supply standards. In addition, when an energy community operates grids, it should be entitled with the same responsibilities as DSOs. Energy communities acting as a DSO should thus take on all the tasks inherent to the operation of the grid, such as billing and managing the digital infrastructure.

The possibility given to the energy community to also withdraw from the network management activity and then pass on the incumbent DSO should be treated with caution as it could imply for the latter to take back an infrastructure when it is not cost-efficient anymore. Energy communities owning distribution networks should invest and manage their grids following similar criteria to provide high quality of supply standards and not deviate from the mission to which they are committed. At the end of the day, it this is not done, and they would seize to exist, this could create heavy (financial) burdens on other consumers and create inequalities. This should be avoided.

Considering the above foregoing concerns, E.DSO believes that the following principles shall be followed:

- DSOs should facilitate energy communities in their ambition to be able to fully participate in energy markets (e*.g., deliver flexibility to DSOs and TSOs).* This includes new types of market facilitation services offered by DSOs.

- If energy communities intend to also take the DSO role and responsibilities, they should also comply to existing and future regulatory requirements for DSO operations. This is to maintain a level playing field in the market and not jeopardize existing unbundling principles and purposes. Network users should not perceive different grid experiences depending on whether they belong to a energy community or not.
- Energy communities should work closely with DSOs and provide good quality data for capacity planning while keeping their own responsibilities. In doing so grid capacity planning is executed much more efficiently and the energy transition can be accelerated in a cost-efficient way.

- The end customer should be entitled to freely select energy supplier and at the same time decide to become a member of an energy community or, should the customer no longer wish to be part of the energy community, be allowed to leave it without unnecessary burdens.

By applying the same rights and obligations to all electricity actors, especially when it comes to distribution activities, the stability and affordability of the system can be ensured. E.DSO is committed to support energy communities in their mission to provide environmental, economic, or social community benefits to their members. DSOs will support their actions by providing existing and new market facilitation services as well as technical expertise to ensure they can thrive.

### 4.2 Network tariffs applying to energy communities

In its report on distribution tariffs network methodologies in Europe[5], ACER highlights those new activities such as *"energy communities use the distribution system and as such their treatment in the tariff methodologies may play a role in their uptake"*. If network tariffs should not hinder the implementation of energy communities, they should not involve difference of treatment between network users. The 2019/944 Directive states that energy communities "*are subject to (…) non-discriminatory and cost-reflective network charges in accordance with Article 18.1(e) of Regulation (EU) 2019/943, ensuring that they contribute in an adequate and balanced way to the overall cost sharing of the system a*nd *"For the purposes of point (e) of the first subparagraph, where electricity is shared, this shall be without prejudice to* ***applicable network charges, tariffs*** *and levies, in accordance with a transparent cost-benefit analysis of distributed energy resources developed by the competent national authority."*

Energy communities should be differentiated from collective self-consumption since they are entitled to other activities such as generation, supply, distribution, aggregation, consumption, energy efficiency or energy storage, or charging service. Tariffs should reflect the real use of the network by energy communities (*injection of electricity in the public distribution grid and/or withdrawal of electricity*).

We believe that a right balance is to be settled between the need to reflect the use of the network considering the benefits brought by the energy community to the system. While energy communities play a key role in achieving the energy transition, wide tariff exemptions should be prevented to not distort competition and affecting other network users. To ensure a level playing field, cost-reflective grid tariffs should apply to everyone equally, independent of whether a customer is part of an energy community or not.

## 5. Conclusions and Recommendations

Energy communities are a cornerstone of the future highly decentral, multimodal, and people-driven sustainable energy networks and can re-shape the roles of the current key players such as DSOs fundamentally. Not only will they bring environmental, economic, and social benefits to their members, they will also provide a valuable contribution to the energy system and decarbonisation of our economies. As highlighted in this paper, some questions remain regarding their specific role in the energy market, their relationship with other market stakeholders as well as the topic of network tariffs. It is up to all of us to strike the right balance between the opportunities and challenges they bring to the energy system.

To continue the proper functioning of the energy system and markets and set the foundation for a system perceived as fair by everyone involved, E.SDO recommends energy communities to have the same rights and obligations as other actors to ensure a level playing field. Exchanges of good practices and feedbacks from Member States' implementation will be useful to better apprehending the future challenges before

[5]ACER, Report on distribution tariffs network methodologies in Europe, (2021) https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20on%20D-Tariff%20Methodologies.pdf

considering an evolution of energy communities' models. To ensure that Energy Communities can thrive, DSOs are fully committed to assisting them with existing and new market facilitation services, including technical expertise.

**E.DSO believes that the role of DSOs as the facilitator of ECs shall rely on the following convictions and recommendations:**

- DSOs stand ready to facilitate energy community, an important new type of energy actor, with existing and new type of market facilitating services.
- Close cooperation between DSOs and energy communities shall contribute to higher participation levels of customers which is to benefit support for the energy transition.
- Implementing "locally generated energy for local use" (possibly through local energy markets) shall contribute to an affordable and more efficient energy system. To that end, energy communities should behave as grid supportive as possible by optimizing supply and demand to minimize and possibly reduce constraints on the public grid by offering flexibility services.
- DSOs and energy communities working closely together shall contribute to the transition towards a customer centric market model as well as more cost-efficient planning of local grid expansions. If energy communities are to also take the role of DSO, they should carry the same responsibilities and comply with existing and future regulatory requirements as other DSOs.
- A level playing field is important for all customers in the energy system and social fairness should not be forgotten as regular customers should not be disadvantaged for not being part of an energy community. Moreover, members of energy communities should have the same rights as non-members, including – for example - the right to switch supplier.
- General principles specifying the shape of the energy community, its rights, obligations, and responsibilities as well as its place on the energy market in the existing mechanism of connections between market participants should ensure a level playing field. Excessively complicated requirements should be avoided as much as possible, and we should learn as much as we can from national experiences in order to find out the right balance.

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