Council of the European Union

**Brussels, 4 May 2026**
**(OR. en)**

**8851/26**

**ENER 218**
**FISC 161**
**ECOFIN 566**
**COMPET 522**
**ENV 449**
**IND 307**

**COVER NOTE**

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| From: | Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director |
| date of receipt: | 30 April 2026 |
| To: | Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union |
| No. Cion doc.: | SWD(2026) 126 final |
| Subject: | COMMISSION STAFF WORKING DOCUMENT Implementation Package Accompanying the COMMISSION RECOMMENDATION on supporting the development of energy communities and maximising the potential of self-consumption COMMISSION RECOMMENDATION on supplier risk management COMMISSION RECOMMENDATION on the protection of vulnerable customers and customers in energy poverty from energy disconnections and during planning and carrying out of the phase-out of natural gas or when natural gas distribution networks are being decommissioned COMMISSION RECOMMENDATION on the summary of the key contractual terms and conditions of energy supply contracts REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on market-based electricity supply prices, effective retail market competition and promoting remuneration of flexibility in retail contracts |

Delegations will find attached document SWD(2026) 126 final.

Encl.: SWD(2026) 126 final

EUROPEAN
COMMISSION

Brussels, 30.4.2026
SWD(2026) 126 final

**COMMISSION STAFF WORKING DOCUMENT**

**Implementation Package**

***Accompanying the***

**COMMISSION RECOMMENDATION on supporting the development of energy communities and maximising the potential of self-consumption**

**COMMISSION RECOMMENDATION on supplier risk management**

**COMMISSION RECOMMENDATION on the protection of vulnerable customers and customers in energy poverty from energy disconnections and during planning and carrying out of the phase-out of natural gas or when natural gas distribution networks are being decommissioned**

**COMMISSION RECOMMENDATION on the summary of the key contractual terms and conditions of energy supply contracts**

**REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on market-based electricity supply prices, effective retail market competition and promoting remuneration of flexibility in retail contracts**

{COM(2026) 850 final} - {C(2026) 2850 final} - {C(2026) 2851 final} -
{C(2026) 2852 final} - {C(2026) 2853 final}

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## INTRODUCTION

This Staff Working Document provides the background, analysis and evidence illustrating the set of Commission Recommendations on i) energy communities and self-consumption including an action plan on energy communities; ii) protection of vulnerable customers and customers in energy poverty from energy disconnection and during natural gas phase-out; iii) the summary of the key contractual conditions and iv) supplier risk management, as well as the report on market-based retail prices and remuneration of flexibility in retail contracts adopted on the same day as this SWD.

These documents are directly related to the Commission Communication COM(2026)115 on the Citizens Energy Package adopted on 10 March 2026.

European citizens benefit from strong consumer protection and empowerment thanks to EU laws – however, **implementation remains uneven**. Effective implementation of EU energy acquis is key to ensuring that citizens can fully benefit from their rights. The above-mentioned Recommendations supported by this Staff Working Document will further support Member States in effectively implementing the EU energy acquis.

The sections in this SWD concern several consumer rights in the electricity and gas sector, they are grounded on different articles of the Electricity Directive as well as the Gas Directive and address topics that vary in terms of technical and administrative contexts and procedures. Therefore, the approach and structure of each section reflect such diversities and are designed to best describe the concerned topic.

## SECTION 1: GOOD PRACTICES TO SUPPORT THE DEVELOPMENT OF ENERGY COMMUNITIES

### 1. INTRODUCTION

The European Union aims to achieve climate neutrality by 2050, with an interim target of a 55% net emission reduction by 2030. The European Green Deal[1] provides a strategy to achieve these goals, which were made legally binding through the European Climate Law[2]. Since energy production and use account for over 75% of the EU's greenhouse gas emissions, decarbonising the energy system is central to meeting climate objectives.

The **Clean Energy for All Europeans** package adopted in 2019, and the legislative packages that followed it, aim to place Europeans and communities at the centre of the energy transition. Public engagement in the transition can ensure fairness, inclusiveness and affordability, while also promoting energy autonomy and conscientious energy use.

Citizens now have the possibility to take control of their energy choices, not only as final customers but also as active consumers – individuals or groups that generate, consume, store and share renewable energy. Devices such as smart meters and advanced monitoring systems provide real-time data, enabling consumers to optimise usage, reduce bills and contribute to a balanced energy system. These options extend to collective action, with energy communities allowing citizens and local actors to co-invest, co-govern and participate in sustainable energy projects.

The **transition to a consumer-centric energy system has accelerated during the energy crisis after the invasion of Ukraine**. For instance, solar photovoltaic (PV) installed capacity grew by 130% over the period from 2021 to 2024[3].

As part of the **clean industrial deal[4]**, and as announced in the **affordable energy action plan[5]**, the **Citizens Energy Package** aims to further empower local communities and citizens to produce, consume and sell their own renewable energy, thereby contributing to EU energy and climate targets.

**Citizen energy projects in the energy sector in the EU vary in their legal, organisational and financial forms; energy communities represent an organisational form that allows for a collective of local actors and citizens to co-invest and participate in the governance and development of sustainable energy projects.**

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[1] Communication from the commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal, COM/2019/640 final.

[2] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999.

[3] Solar Power Europe, EU Solar Market Outlook 2025-2030.

[4] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation, COM/2025/85 final.

[5] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Action Plan for Affordable Energy: Unlocking the true value of our Energy Union to secure affordable, efficient and clean energy for all Europeans, COM/2025/79 final.

### 1.1. THE CONCEPT OF ENERGY COMMUNITIES

Two definitions of energy communities exist in the EU legal framework[6], they are legal entities that formed by individuals, small businesses or local authorities and that collectively own, produce, manage, store, supply and consume energy primarily from renewable sources. Their main goal is to deliver environmental, social and economic benefits to their members or to the local area where they operate, rather than maximising financial profit. They are typically characterised by **democratic governance, open and voluntary participation, and a strong focus on social and environmental objectives**.

Energy communities constitute an important means by which **citizens and local bodies can take an active role in the energy system to produce, share and sell clean energy and provide energy-related services**. By enabling collective investment and participation in renewable energy projects, they can democratise energy production and foster **local self-sufficiency and resilience**, enhancing energy security. By pooling resources, communities can access renewable energy technologies and benefit from energy efficiency measures in a more affordable and accessible way for all their members; this enhances social acceptance of the energy transition. Within the EU Mission on Climate Neutral and Smart Cities[7], many cities are already integrating community energy initiatives into their Climate City Contracts as part of their transition to climate neutrality.

**Rural areas offer a particularly fertile ground for such initiatives.**[8] The EU's new Vision for Agriculture and Food[9] explicitly calls for the possibility for farmers to produce, consume and sell electricity through energy communities and commits to update the forthcoming rural action plan, including an action to support energy communities in rural areas.

Community energy projects can also **stimulate local economies** while reducing greenhouse gas emissions. Some studies have indicated that community energy projects in the EU can generate local revenue as profits are reinvested locally rather than being transferred outside the community[10]. This reinvestment supports local businesses, creating jobs in the construction, operation and maintenance of energy infrastructure[11]. This is particularly relevant in areas suffering from depopulation.

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[6] Notably in Article 2, point (11) and Article 16 of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity, and Article 2, point (16) and Article 22 of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of energy from renewable sources (recast).

[7] See: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/climate-neutral-and-smart-cities_en.

[8] The EU Rural Pact provides numerous good practices on energy communities in rural areas, Rural Pact good practices.

[9] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'A Vision for Agriculture and Food: shaping together an attractive farming and agri-food sector for future generations', COM/2025/75 final.

[10] Local economic benefits of citizen renewable energy projects: benefits for the territories | Shared Energy (energie-partagee.org). See also: Social-Impact-of-EC-in-Greece_EN_FINAL.pdf.

[11] REScoop.eu. (2024). *Community Energy: a practical guide to reclaiming power.* Available at: https://www.rescoop.eu/uploads/rescoop/downloads/Community-Energy-Guide-update-2024.pdf.

Energy communities can lead to **lower or stable energy prices** for their members[12]. Because their main focus is on social and economic benefits rather than profit, they can help stabilise energy prices for their members and have the potential to involve vulnerable households and households affected by energy poverty and therefore help combat energy poverty. With their unique character, energy communities can also support the uptake of demand-response measures and innovative models like peer-to-peer trading, smart grids and shared mobility services.

Energy communities can also deliver other social benefits and innovations. **Local ownership can help overcome resistance to new projects, attract private investment and ensure that the benefits of clean energy are shared among local communities**. Energy communities can strengthen resilience at the local level by, for instance, shielding members from market shocks in periods of high energy-price volatility. Energy community projects can foster a sense of shared ownership and cohesion among members, enhancing the community spirit and trust that are essential for community resilience.

**Today, over 8 000 energy communities are active in Europe**[13]. The European federation of energy communities, REScoop.eu, claims to represent 2 500 of such communities, involving over two million citizens.[14] Its members, which mostly take the form of energy cooperatives, abide by the seven cooperative principles adopted by the International Cooperative Alliance in 1995. Beyond the production and storage of renewable energy from solar and wind, energy communities also engage in a wide variety of fields of activity,[15] such as electrical car sharing[16], one-stop-shops services for building renovations[17], and energy system operation[18]. Local authorities are increasingly taking a prominent role in setting up energy communities, often in collaboration with citizens, companies, NGOs and/or research institutes. This trend can be observed in countries such as Italy[19], Greece, Germany[20] and the Netherlands[21]. Examples also exist of farmers and small businesses grouping together to form energy communities[22].

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[12] Caramizaru, A.; Uihlein A. (2020), Energy communities: an overview of energy and social innovation, 10.2760/180576 (online).

[13] [TANDEM] Territorial Analysis of Decentralised Energy Markets | ESPON (2025), p. 11, this number is based on a looser conceptualisation of energy communities, going beyond the EU definitions alone.

[14] About us - REScoop

[15] Monica Musolino a, Gaetano Maggio b, Erika D'Aleo a, Agatino Nicita, 'Three case studies to explore relevant features of emerging renewable energy communities in Italy' (2023). (For example, Energy City Hall, CommON Light).

16 See for example: The Mobility Factory | A European Network of local, sustainable mobility cooperatives.

17 See for example: EcoVision: One-Stop Shop for Energy Upgrades/Retrofits in Ireland.

18 See for example: 100 % Ökostrom – Klimaschutz mit Rebellenkraft | EWS Schönau.

[19] For example, Municipality of Megara, Mandra, Agioi Anargyroi.

[20] For example, Neustadt an der Waldnaab.

[21] See for example: Biozon – Van stortplaats naar bron van duurzame energie!

[22] For example, Ijskoud Cooperative.

**Since the adoption of the Clean Energy for All Europeans package, also known as the Clean Energy Package, there has been a surge in the number of energy communities in southern**[23] **Europe and parts of central Europe**[24], where solar potential is high and conducive frameworks are in place that allow for virtual self-consumption of collectively produced electricity. The first energy communities are also emerging in eastern Europe and in the Baltics[25].

**The sector is expected to continue to grow. By 2030, energy communities could contribute around 8% of total renewable electricity generation**, a sharp increase from an estimated 1.5% in 2023.[26]

**However, this potential will not tap itself**. For energy communities to gain, strengthen and consolidate good market positions, they need to take a **substantial leap in scale and professionalisation**; they must also become **a broader movement** that is not associated with a particular political orientation or social economic background.

The early stages of energy communities are often characterised by a lack of financing and dependence on voluntary work by individuals who may **lack the financial or technical capacity** to start an energy project. Furthermore, the potential of energy communities is heavily favoured when there is an enabling administrative and legislative environment. Like other renewable energy projects, the successful realisation of energy communities also depends heavily on the **availability of grid capacity and the ability to integrate flexible assets and services.**

**For this reason, a comprehensive strategy with dedicated measures and policies to help overcome institutional, cultural, technical and socio-economic barriers and to allow energy communities to reach their full potential in achieving climate and energy transition objectives is needed at EU, national and local levels.**

Such a comprehensive set of measures could help energy communities to:

- overcome constraints of **technical capacity and access to finance**; these challenges impact the project-development cycle and the route to markets;
- maximise their potential for an **inclusive and just transition** by raising awareness, supporting social innovation and allowing citizens to take an active part in the energy transition.

Beyond these objectives there is a general need to raise **awareness** among the public and public officials of the potential of energy communities. Where there is willingness to act, it should be possible for citizens and local actors to set up economically viable sustainable energy projects.

[23] As of November 2022, there are 1 406 active energy communities in Greece established under Law 4513/2018. Energy Communities in Greece and its lignite areas, Review of developments, The Green Tank, January 2023. Available online: Surge of requests for self-produced energy from energy communities. Support by the state is urgently needed. - The Green Tank.

[24] In Austria there were more than 3000 renewable and citizen energy communities active in the beginning of 2025, up from only a handful three years earlier. In Czechia there are currently more than 100 energy communities compared to 22 at the end of 2024. Source: national administrations (ESPON TANDEM, 2025).

[25] For example, there are two energy communities in SK and 50 in PL (ESPON TANDEM, 2025).

[26] ENTEC study on the potential of citizen energy in the electricity sector [forthcoming].

**To keep up with momentum and deliver on the vision for a citizen-centred energy system, this staff working document (SWD) accompanies Commission Recommendation C(2026)2850 on supporting the development of energy communities and maximising the potential of self-consumption and is meant to support Member States in reaping the full potential of energy communities**. This document first introduces the concept of energy communities and the legal background in which energy communities operate in before elaborating on the importance of defining energy communities and how they differ from other structures. It then outlines good practices observed across the EU on how to create effective legal frameworks, assessing and monitoring barriers and potential of energy communities, permitting and licensing, grid connection procedures, development and operation of energy networks, energy sharing and access to relevant energy markets. The next Chapter gives an overview of the financial challenges faced by energy communities, with examples from Member States and EU-level funding programmes, followed by ways to achieve, effective awareness raising and capacity building for different stakeholders. Finally, the last chapters explore the potential of energy communities to support socially inclusive energy transitions and the role of digitalisation and innovation in the energy transition.

**In line with Regulation (EU) 2018/1999[27] (the Governance of the Energy Union Regulation), measures, policies and, where applicable, national trajectories and objectives adopted to implement the new recommendation on supporting the development of energy communities should be consolidated into a national approach and reported on in the National Energy and Climate Progress Reports (NECPRs).** These measures and trajectories should ideally cover all relevant kinds of energy community[28], generated by the approaches to implementation applied by Member States.

The **Clean Energy for All Europeans package** of 2019 introduced two categories of energy community[29]:

- **Directive (EU) 2018/2001[30] as amended by Directive (EU) 2024/1711 and Directive (EU) 2023/2413**, **the Renewable Energy Directive (RED)**, outlines an enabling

[27] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council, PE/55/2018/REV/1, *OJ L 328, 21.12.2018, pp. 1–77, http://data.europa.eu/eli/reg/2018/1999/oj*

[28] In Poland, for example, the legislation differentiates between energy clusters and energy cooperatives. Source: EC Facility –country fiche Poland.

[29] Recital 43 of Directive (EU) 2019/944: "This Directive aims to recognise certain categories of citizen energy initiatives at the Union level as 'citizen energy communities', in order to provide them with an enabling framework, fair treatment, a level playing field and a well-defined catalogue of rights and obligations."

[30] Directive (EU) 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, http://data.europa.eu/eli/dir/2018/2001/oj.

framework for renewable energy communities (**RECs**) operating in the heating and electricity sector based on renewable energy, including biogas and biomass[31];

- **Directive (EU) 2019/944[32], as amended by Directive (EU) 2024/1711**, **the Electricity Directive**, empowers citizen energy communities (**CECs**) to operate on the electricity market irrespective of the technology used.

When they implement an enabling framework for energy communities within the context of the recommendation, Member States should engage with energy communities, individuals, rural communities, local actors, civil society groups, market participants and system operators through targeted consultations to **discuss the different scenarios envisaged**.

### 1.2. LEGAL BACKGROUND

Energy communities often emerge through the motivation of an individual or small group of people, or of a local administration or an SME that might not have its primary activity in the energy sector. This means that such communities are often reliant on voluntary work and face significant barriers in the absence of an enabling framework. **The establishment of strong enabling and supporting legal, regulatory and policy frameworks across energy markets and sectors is of central importance to the development of energy communities at the national level and the facilitation of system integration**.

This requires removing unjustified barriers to create a level playing field for energy communities operating alongside traditional large-scale market actors. This includes improving access to finance and information, cooperation with distribution system operators and other market actors, and considering the needs of energy communities when regulating their activities and designing support schemes.

### 1.3. CLEAN ENERGY FOR ALL EUROPEANS PACKAGE

EU legislation provides for two models of energy community. There are some **fundamental differences** between them, and this allows them to capture the diverse ecosystem of community energy initiatives across the EU.

- RECs can in principle operate in both gas and electricity markets and the district heating and cooling (DHC) sector, while **CECs are limited to electricity markets**. This allows RECs to engage in combined heat and power generation based on renewable gas or other renewable fuels and to purchase electricity at wholesale market level.
- **RECs are bound by a requirement of geographical proximity to ensure local ownership of renewable energy projects** by communities that share a common geographical location; CECs, meanwhile, can draw in investors from across a Member State's territory, constituting communities that share a common interest (for example in mitigating climate change).

[31] In Slovakia, for example, a community producing energy from renewable sources could also be active in the electricity and gas market, including biomethane production. Source: EECF country fiche Slovakia_v3.pdf. See also: Section 11a(2) of Act 251/2012.

[32] Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, http://data.europa.eu/eli/dir/2019/944/oj.

- RECs have a governance model based on autonomy of individual members or shareholders in effective control and autonomy from investors, while CECs can in effect be controlled by a single actor (such as a municipality).
- REC membership is limited to natural persons, local authorities and SMEs, while **CEC membership is open to any type of entity, including universities, associations, regional administrations and large enterprises**[33].
- RECs need to own at least some of the installations in a renewable energy project; in the case of CECs, in contrast, all the installations can be leased, rented or owned by a third party as long as this does not undermine effective control of the community.
- Private undertakings cannot participate in a REC if it would constitute their primary commercial or professional activity according to Article 22(1) of the RED; large private undertakings can participate in CECs but cannot have any decision-making power as per Recital 44 of Directive (EU) 2019/944.
- RECs can also play an important part in the fields of **renovation** and **heating and cooling (HC).** The RED encourages Member States to implement specific measures aimed at promoting DHC networks powered by renewables and waste heat, and mentions RECs as vehicles to achieve this aim according to Articles 23(4)(k) and 24(6)(e) of the RED.

Most Member States have transposed the concepts of REC and CEC separately.

In cases where Member States prefer to take a different approach[34], CECs or nationally defined energy communities[35] can be used; RECs are then a subcategory in terms of membership structure, governance requirements and proximity[36]. Where there is an overall focus on stricter requirements in terms of governance and the local nature of energy communities, Member States could consider merging RECs and CECs into a single energy community with a separate definition[37].

The definitions of both RECs and CECs are **accompanied by enabling frameworks that facilitate their market integration and their right to perform all relevant activities in the energy sector**, including production, storage, sales and sharing of renewable energy. CECs are explicitly empowered to engage in flexibility, energy efficiency services, charging services and other energy services[38].

Article 22(2), (3) and (7) of the RED outline **more specific rights for RECs**, including an enabling framework in Member States that envisions:

- capacity-building support for local authorities;
- tools to facilitate access to financing and information;
- accessibility for low-income or vulnerable households;

[33] GLS Bank participation in EW Schönau and Greenpeace participation in Green Planet Energy.
[34] For example, to allow for the participation of large organisations and businesses.
[35] See the definition of 'sustainable energy community' in Ireland.
[36] For example, Estonia defined an energy community as a general concept and REC as a sub-category of that concept. See Article 12-2 of the Electricity Market Act.
[37] For example, in Luxembourg and the Netherlands, where a single umbrella concept of 'energy communities' aligns the membership structure and governance requirements of CECs with RECs while applying the rights and responsibilities granted to CECs in Article 16 of the Electricity Directive.
[38] For example, the organisation of energy sharing.

- removal of unjustified regulatory and administrative barriers.

In addition, Member States are required to carry out an assessment of the existing barriers to and development potential of RECs in their territories and to take into account the specificities of RECs when designing renewable energy support schemes.

Member States were required to transpose the EU definitions and legal framework for energy communities into their national legislation, and to establish enabling frameworks, by 31 December 2020 for the Electricity Directive and 30 June 2021 for the RED.

**The Clean Energy Package has now been partially or fully transposed in almost all Member States**. Member States such as **Italy** and **Austria** are leading by example with strong enabling and supporting frameworks in place for energy communities. Access to financial and technical support and the development of advanced frameworks for models of energy sharing have been instrumental in a recent surge in the number of energy communities in both Member States[39].

The Governance of the Energy Union Regulation requires[40] Member States to include in their integrated national energy and climate plans (NECPs), and to report in the biennial integrated energy and climate progress reports (NECPRs), a summary of policies and measures to promote and facilitate the development of RECs, as well as, where applicable:

- a description of policies and measures to promote the role of local energy communities in contributing to the implementation of energy efficiency obligation schemes, the promotion of energy services in the public sector, and contribute to achieving the indicative national energy efficiency contributions for 2030;
- a description of national trajectories and objectives, including for RECs; and
- the share of renewable energy produced by RECs.

**Almost all Member States include in their NECPs policies and measures they have put in place for energy communities**, or some form of community energy projects. However, only a few Member States have objectives or monitoring systems in place for the development of energy communities. Many Member States provide information on their support for energy communities: in **Czechia**[41], **Greece** and **Ireland**[42] there are specific financing programmes; **Bulgaria** has technical and capacity-building support in which support is planned specifically for public authorities to facilitate the establishment of energy communities[43]; in **Italy** a dedicated portal has been set up to guide local administrations in setting up new participatory collective actors[44]; and in **Spain** specific training programmes will be set up for the provision of technical advisory services for energy communities[45].

[39] [TANDEM] Territorial Analysis of Decentralised Energy Markets | ESPON (2025).
[40] Annex I, Articles 20 and Annex IX.
[41] New Green Savings Programme – SFŽP ČR.
[42] Small-Scale Renewable Electricity Support Scheme.
[43] NECP Bulgaria, p. 191 onwards.
[44] NECP Italy, p. 337.
[45] NECP Spain, p. 190.

### 1.4. 2030 FRAMEWORK FOLLOWING THE EUROPEAN GREEN DEAL

The **revised RED as amended by Directive (EU) 2023/2413** has some additional elements that support the development of RECs:

- grid connections for heat pumps of up to 50 kW installed by self-consumers are to be permitted within two weeks of notification;
- the permit-granting procedure for the installation of solar energy equipment up to 100 kW and heat pumps up to 50 kW must not exceed one month;
- simplified registration processes and reduced registration fees for guarantees of origin apply to small installations up to 50 kW and RECs;
- renewable based DHC networks established by RECs may be promoted through regulatory measures, financing arrangements and support according to Article 23(4)(k) of the RED, and by the creation of a coordination framework between DHC system operators and potential sources of waste heat and cold to facilitate the use of such sources; this coordination must ensure a dialogue with system operators, industrial sector enterprises, local authorities, scientific experts and RECs involved in renewable heating and cooling according to Article 24(6) of the RED.

The **Reform of the Electricity Market Design (**Directive (EU) 2024/1711 and Regulation (EU) 2024/1747) operationalises the right to energy sharing, allowing energy communities to virtually self-consume generated or stored electricity collectively.

**With regards to heating**, Directive (EU) 2023/1791, the **revised Energy Efficiency Directive (EED)**, includes provisions for developing the economic potential of **efficient district heating (DH)** as outlined in Article 14 and Annexes VIII and IX of the EED (as amended by the Commission Delegated Regulation). The EED also significantly strengthens the role of energy communities in the decarbonisation of heating and cooling systems by introducing new obligations and planning requirements that directly reference the potential and involvement of energy communities in achieving energy efficiency and renewable energy targets. For example, it requires all large municipalities (with populations above 45 000) to develop local HC plans that specifically assess the potential for energy communities to contribute to renewable energy-based heating projects according to Article 25(6) of the EED.

Adding to this, Directive (EU) 2024/1275, the revised **Energy Performance of Buildings Directive (EPBD)**, requires that new buildings be zero-emission buildings from 2030 (2028 for public buildings), to which renewable sources generated on site, in proximity to or from a REC can contribute. Having solar energy installations will become the norm for new buildings.

The EPBD further requires Member States to submit, following a public consultation, **draft national building renovation plans (NBRPs)** by 31 December 2025. These must include an overview of:

- the national building stock, with the number of renovation initiatives by RECs';
- implemented and planned policies and measures regarding the role of RECs and CECs in district and neighbourhood approaches.

The EPBD therefore directly addresses the role of energy communities in building renovation strategies. It requires national renovation plans to report on the role of energy communities in achieving renovation objectives. It also outlines the obligation on Member States to support training for local authorities, RECs and citizen-led renovation initiatives to promote the objectives[46].

The **Governance of the Energy Union Regulation**[47] requires Member States to report on the measures and policies and, where applicable, objectives for energy communities in their NECPs.

Most recently, the **clean industrial deal** aims to increase energy security and affordability through the decarbonisation of energy supply to industry and the public.

The **affordable energy action plan puts forward energy communities as a solution to benefit from affordable renewable energy**, emphasising the importance of strengthening these initiatives to allow local communities, citizens and companies to collectively invest in clean energy projects at the local level, and to produce, sell and consume their renewable energy.

The **clean industrial deal state aid framework** (C/2025/7600) extends the special treatment in terms of eased participation requirements and possible exemptions for auction procedures under the climate, energy and environmental aid guidelines for projects up to 6 MW capacity in general and up to 18 MW for wind generation for RECs and CECs. Furthermore, Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty – the **General Block Exemption Regulation** – allows such state aid measures for energy communities without *ex ante* approval[48].

Lastly, the Regulation (EU) 2023/955[49] on the Social Climate Fund recognizes the role of energy communities as instruments to help reach vulnerable households and alleviate energy poverty.

## 2. CLEAR, INCLUSIVE AND RESILIENT DEFINITIONS

**Defining what energy communities mean in a national context – what characteristics need to be fulfilled for them to be considered as such – is a crucial first step towards certainty and**

[46] Article 29(3) of the recast EPBD.

[47] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance.)PE/55/2018/REV/1, OJ L 328, 21.12.2018, ELI: http://data.europa.eu/eli/reg/2018/1999/oj.

[48] EUR-Lex - 52025XC03602 - EN - EUR-Lex, Section 4.1.1, 59 and Section 4.1.2, 68. See also: EUR-Lex - 52022XC0218(03) - EN - EUR-Lex, 3.3., 75. See also: EUR-Lex - 02014R0651-20230701 - EN - EUR-Lex.

[49] Regulation (EU) 2023/955 of the European Parliament and of the Council of 10 May 2023 establishing a Social Climate Fund and amending Regulation (EU) 2021/1060, PE/11/2023/REV/1, *OJ L 130, 16.5.2023, pp. 1–51, http://data.europa.eu/eli/reg/2023/955/oj*

**clarity when developing an enabling and supporting framework. It is also important in avoiding abuse of the concept of energy community**.

Energy communities are new types of market actors designed to empower citizens, local authorities and SMEs in the energy transition. As explained in the introductory part of this SWD, there are two separate EU definitions of energy communities. The RED defined **RECs** and the Electricity Directive created the model of **CECs**, collectively known as **energy communities**[50]**.**

In essence, energy communities constitute a basic **organisational concept** that brings together citizens, businesses and local authorities to collectively participate in sustainable energy activities through a legal entity empowered to produce, consume, store, share, supply and aggregate energy and to provide energy-related services. However, in contrast to other market participants, **their primary purpose should be to provide environmental and socio-economic community benefits rather than financial profits.**

It is crucial to clearly articulate and communicate requirements of structure and governance in definitions of energy communities. **This will enable legal certainty and, where relevant, ensure coherence and complementarity between different legal categories of energy community**. Moreover, clear, coherent and inclusive definitions unlock the possibility to design potential incentives and rules without risking distortions of competition through unjustified support measures for other types of energy undertaking.

### 2.1. CLEAR DEFINITIONS

Both definitions in the RED and the Electricity Directive require open and voluntary participation, effective control by certain categories of actor, and the requirement to prioritise community or local benefits over profit-making. These unique characteristics make energy communities a part of the wider social economy[51]. RECs are additionally characterised by geographical proximity and autonomy.

The principles that shape the unique **membership structure, governance requirements and purpose of energy communities require further interpretation and implementation** in legislation or in the regulations or statutes of energy communities[52]. Only then can these principles work effectively and safeguard the unique character of energy communities.

#### 2.1.1. Proximity and autonomy

Proximity and autonomy are unique governance requirements of RECs, set out in Article 2(16) of the RED, which ensures democratic management and local ownership of renewable energy projects by citizens and local actors with the aim of nurturing local acceptance[53].

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[50] 'Renewable energy community' is defined in Article 2(16) of RED and 'citizen energy community' is defined in Article 2(11) of the Electricity Directive.

[51] See definition of social enterprises in SEAP - European Commission.

[52] Belgium, Wallonia: requirement to translate these concepts into statutes. Minimum provisions can be prescribed by government. Assumption of dependence introduced under specific scenarios.

[53] Recital 70 of Directive (EU) 2018/2001.

Member States have taken various approaches to the principle of **proximity**, defining it based on administrative boundaries, grid topology, a radius of a certain number of kilometres and/or on some other local factor, which may vary with the technology used and the geographical location (urban or rural, for example). **While certain activities in the energy sector can have technical limitations (such as energy sharing), the proximity requirement for RECs is an organisational feature.**

Member States can separate this principle from geographical restrictions imposed on energy sharing defined in the Electricity Directive, or collective self-consumption schemes defined in regulation. This could be done by aligning the criteria with the local context and the technology used within a pre-defined set of differentiated geographical boundaries.

For example, in **Czechia** members of a REC must have their residence or registered office or place of business in located within a territory comprising no more than three contiguous municipalities or within the territory of the capital city[54]. In **Wallonia in Belgium** the REC must demonstrate when registering with the Walloon regulator how the criterion of proximity is interpreted in the statutes, based on technical and geographical criteria[55]. In **Germany**, natural persons must reside in a postcode area that is wholly or partly within a 50-kilometre radius of the solar installations or wind turbines[56].

Recital 71 of Directive (EU) 2018/2001 clarifies that the requirement of **autonomy** serves the purpose of avoiding abuse and ensuring independence from individual members and other traditional market actors that participate as members or shareholders, or who cooperate through other means such as investment. The requirement of autonomy has an external and internal function. Some Member States have further **defined this principle to ensure the equitable distribution of voting rights and decision-making power between members having effective control.**

Member States such as **Croatia**[57] and **Czechia**[58] have further specified the autonomy requirement to mean 'one member, one vote', with the possibility to deviate therefrom for fair reasons and provided no member has more than 10% of the voting rights in **Czechia**. In **France**, the requirement of autonomy is interpreted in line with Article 3 of Annex I of the Commission Recommendation of 6 May 2023 concerning SMEs[59], limiting the level of involvement and decision-making power of private undertakings in RECs[60]. Moreover, a shareholder may not hold more than 25% of the voting rights.

[54] Zákon č. 458/2000 Sb.

[55] EC Facility – Country fiche Belgium (Wallonia).

[56] § 3(15) of the Renewable Energy Sources Act (EEG).

[57] Furthermore, the law clarifies that a shareholder or a member of the CEC may not have more than 40% of the shares owned by a legal entity of another shareholder or member of the same CEC. See Article 26(3) of the Law on the Electricity Market.

[58] Zákon č. 458/2000 Sb, Section 20c(1) and Section 20c(7).

[59] Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (Text with EEA relevance) (notified under document number C(2003) 1422).

[60] Enterprises cannot hold or control majority of voting rights, have no right to appoint or remove a majority of the members of the governing bodies, and no right to exercise dominant influence pursuant to contract or statutes.

### 2.1.2. Effective control

**Effective control concerns the decision-making power and actors who exercise decisive influence on the energy community, in accordance with the definition of 'control' in Article 2(56) of the Electricity Directive.** The requirement for effective control does not regulate the relationship between the individual effectively controlling members, contrary to the requirement of autonomy. It does, however, provide for protection from external interference from other members and shareholders that are not allowed to be in effective control, and from external actors, similar to the requirement of autonomy. Furthermore, for CECs, recital 44 of the Directive (EU) 2019/944 excludes from decision-making power members and shareholders that are engaged in large-scale commercial activity and for which the energy sector is a primary area of economic activity.

Because of the complexity of these terms, it might be helpful to further define **this principle in line with Article 2(56) of the Electricity Directive** and to clarify that effective control can be obtained through voting rights or contracts, and ownership or usage rights. **Some Member States further specify under which conditions effective control is considered to have been established.** In **France**, a certain category of members (i.e. a group of 20 local authorities, natural persons, or enterprises) is in effective control when it holds more than 40% of the voting rights, and when no other category of member directly or indirectly holds a bigger share of the voting rights[61].

Some Member States have put in place **specific safeguards to prevent companies or natural persons whose primary professional or economic activity is in the energy sector from exercising decisive influence.**

In **Denmark**, natural persons that are part of the management of other companies are excluded from taking decisions on behalf of the community. **Hungary** restricts the right of natural and legal persons involved in the electricity or gas sector to have ownership of energy communities, whether through majority ownership of a legal entity or a related undertaking, or by exercising a senior executive function[62].

Some Member States have put in place safeguards to ensure that **certain categories of members, in particular natural persons, have a minimum level of control**. In **Lithuania**, 51% of the voting rights must be held by natural persons[63]. In **Germany**, 75% of the voting rights in any CEC must be held by natural persons[64].

To strike **a balance between having minimum standards to ensure effective control and allowing sufficient flexibility** to take into account local contexts, some Member States, such as

[61] EC Facility – Country fiche France.
[62] Article 66B(5) and 66B(6) of Act LXXXVI.
[63] A roadmap for a policy and legal framework for energy communities, p. 20.
[64] Ibid.

**Belgium** and **Greece**, require energy communities to specify in their statutes how effective control is exercised by different members or shareholders[65].

Further information on how to establish safeguards to prevent undue corporate influence, including examples from Member States, is given in Section 1.4.

#### 2.1.3. Open and voluntary participation

**The requirement for open and voluntary participation ensures that all eligible members and shareholders have a pathway to enter and exit the energy community, preventing situations in which energy communities are only open to specific categories of member.**

Both RECs as defined in Article 2(16) of the RED and CECs, as defined in Article 2(11) of the Electricity Directive require open and voluntary participation.

The **openness** of an energy community may be subject to conditions imposed in the statutes of an energy community, including the price to be paid for obtaining a share[66], limits on the types of member[67] and on geographical proximity[68]; these may be informed by the generation capacity and technology used and by the administrative capacity.

**Article 22(4)(f) of the RED** provides for an additional requirement for RECs to be accessible to all consumers, including those in low-income or vulnerable households. It says Member States must put in place an enabling framework to facilitate accessibility in this regard.

The level of **voluntariness** is determined by how and when members can leave an energy community. Energy communities often set minimum membership periods and notice times, which vary according to specific conditions inherent in different technologies[69]. For example, for energy communities investing in district heating networks or wind turbines, longer minimum membership periods and notice times may be justified.

Some Member States have imposed minimum conditions to ensure open and voluntary participation while allowing energy communities the flexibility to define further conditions on entry and exit in their statutes or articles of association.

For example, in **Luxembourg** every energy community must outline the rules in their statutes; members have the ability to exit the community with a notice period of at least a year[70].

#### 2.1.4. Social, economic and environmental benefits

[65] ECR implementation roadmap.

[66] Joining usually requires buying shares, with costs in Germany ranging between EUR 50 and 3 000. Based on a survey of 113 energy communities in Germany. See: The struggle of energy communities to enhance energy justice: insights from 113 German cases | Energy, Sustainability and Society | Full Text.

[67] For example, EWS Schönau allows only customers and their families.

[68] For example, Amelander Energie Coöperatie.

[69] For example, Ecopower members can leave after six years with six months' notice.

[70] Article 9 of the Luxembourg Law of 9 June 2023, amending Article 8 (4) of the Luxembourg Law of 1 August 2007.

**Energy communities are required to provide social, economic or environmental benefits to their members or to the local area in which they operate.**

The social and inclusive character of the membership structure and governance requirement makes energy communities an ideal vehicle to improve public acceptance of and share the benefits of renewable energy projects with the local community. **Energy communities can and do make a profit**. Many successful energy communities pay dividends to their members or shareholders. However, these profits are often also or primarily used to further invest in renewable energy projects, to ensure energy prices are affordable, support vulnerable groups or invest in social activities and facilities for the local community.

Some Member States have put in place **safeguards to determine when and how profits can be distributed**.

In **Slovakia**, for example, an energy community cannot distribute more than 50% of its total generated profits, so as not to lose its 'not-for-profit' status under the law[71]. In **Czechia**, an energy community composed of cooperatives or other commercial legal forms may only distribute up to 33% of its profits among its members, and may do so only if this does not undermine the fulfilment of its purpose and the needs of its members, and provided a fund from the profits of at least 30% of the registered capital is created[72]. In **Latvia** the new Electricity Market Law requires energy communities engaged in energy sharing to consume at least 80% of the self-produced electricity. Where less than 80% of the electricity is self-consumed, at least 51% of the profits made must be allocated to the operational purposes of the energy community[73].

When such limitations are imposed, **complementarity with existing non-profit requirements of legal forms** can be considered by Member States. For example, in **Austria**, where non-profit status is not derived from the legal form, energy communities are required to stipulate the non-priority purpose of profit-making in the articles of the statutes of the legal entity[74].

### 2.2. INCLUSIVE DEFINITIONS

Some EU Member States have conceptualised other categories of energy community at national level, based on practices preceding the adoption of the Clean Energy Package. These include the 'sustainable energy communities' in **Ireland**, or the 'local energy communities' in Brussels in **Belgium** to support specific types of energy community with high potential.

In Member States such as Germany, the Netherlands, Luxembourg and France there is pre-existing experience with citizen-led initiatives and energy cooperatives, and frameworks for them sometimes exist in parallel, which may cause confusion and increase complexity. It will therefore be helpful to **consider, where relevant, existing actors or groups such as renewable energy**

[71] Section 11a(4) of Act 251/2012.
[72] EC Facility – country fiche Czechia.
[73] Paragraphs 36 and 37 of the Regulation No. 808; Energy Law, Article 17.1.
[74] Explanatory Notes to the Renewable Energy Expansion Act (EAG). See Implementation roadmap of ECR.

**cooperatives**[75] **in national definitions and enabling frameworks for RECs and CECs, to ensure that they can set themselves up as energy communities**.

Moreover, when these concepts are implemented, and with the purpose of facilitating system integration, **RECs need to be able to operate in all relevant energy sectors and markets where technologies are based on renewable energy**. This includes initiatives using renewable gas, as well as initiatives deploying renewable heating and cooling solutions, including through building renovations. Experience from **the Netherlands** shows the importance of allowing a wide range of actors to participate in energy communities when developing heating solutions, in particular system operators and heating companies[76]. This may merit a separate national definition for heating communities, or a parallel definition of CECs in the heating sector.

In the **Netherlands** a dedicated definition for heat communities is currently being envisaged in the upcoming Collective Heat Act; recently, the possibility of heating companies holding a minority share in the ownership of a heat community has been explored[77]. In **Poland,** energy communities are allowed to engage in energy efficiency measures, charging services for electric vehicles and the biogas sector[78]. In **France**[79] the definition of RECs refers to energy efficiency services and charging services for electric vehicles, and rules are defined for RECs that engage in the HC sector. In **Hungary**, the definition of RECs refers explicitly to electromobility services, and a definition of renewable heat community was included in the gas law[80].

### 2.3. RESILIENT DEFINITIONS

**There have been cases of energy companies that set up and effectively control energy communities and access tailored subsidies and enabling conditions** intended for citizen- and community-led initiatives (see chapters 1 and 2)[81]. These developments risk providing disproportionate levels of support to professional undertakings while dampening the potential of energy communities to nurture social acceptance of the energy transition.

Member States should ensure broad participation of stakeholders in energy communities while avoiding abuse of the concept.

Vague or generic definitions of energy communities in national legislation could allow a variety of legal forms and activities to emerge within energy communities. Such definitions might also jeopardise the true potential of energy communities to foster a citizen-inclusive and community-driven energy transition. Undefined and overly flexible concepts may also lead to the unwitting

[75] It is estimated that in 2023 around 4 000 renewable energy cooperatives with 900 000 members were active in the European Union, predominantly in rural areas in north-western Europe. (Koltunov et al., 2023).
[76] Warmtegemeenschappen: stevige positie in nieuwe wet - Buurtwarmte.
[77] Wet collectieve warmte | Overheid.nl | Wetgevingskalender.
[78] Act of 28 July 2023 amending the Energy Law and certain other acts – Chapter 2e – Citizen Energy Communities. Available at: https://sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/prawo-energetyczne-16798478/roz-2-e.
[79] Articles L291-1 to L294-1 of the Energy Code.
[80] See Article 3, definition 49k: 2008. évi XL. törvény - Nemzeti Jogszabálytár.
[81] Report on the corporate capture of energy communities.

creation of an uneven playing field, where those with more resources and market power exploit incentives and preferential treatments aimed primarily at citizens.

**The non-professional nature of energy communities justifies the special treatment enshrined in the enabling framework for RECs and CECs** (see Chapter 1).

- **RECs should be able to remain autonomous** from individual members and other traditional market actors that participate in the community as members or shareholders, or who cooperate through other means such as investment (see recital 71 of Directive (EU) 2018/2001).

The definition of REC deliberately limits membership to natural persons, SMEs and local authorities, including municipalities. Moreover, effective control is limited to shareholders or members located in the vicinity of the renewable energy projects that are owned and developed by that legal entity. **At the very least, some installations should be under full ownership of the members or shareholders of RECs**, notwithstanding the possibility of renting or leasing others and of being supplied by installations owned by third parties.

- While **the governance model of CECs leaves more options for membership (any entity may participate)**, control – meaning the possibility of exercising decisive influence – is also limited to certain actors, namely natural persons, local authorities/municipalities and small enterprises.

**Hence, clearly defining the term 'energy community' is a way to avoid the abuse of the term** (see Section 1.1). Restricting corporate ownership or having clear rules for decision making within the community, as outlined in EU legislation, can help to ensure this.

**Some Member States have already introduced specific conditions to avoid the abuse of the term 'energy community' (or related concepts) and the privileges associated with it.**

**Germany** has refined its definition of citizen energy companies[82], highlighting the need for at least 50 natural persons to be members or shareholders with voting rights in order for an entity to be recognised as energy community. It further exempts certain community-led renewable energy projects from auctions in its Renewable Energy Sources Act (EEG), implementing criteria to define energy communities, such as a percentage of voting rights or a maximum percentage of shares one individual company can hold as a voting right within an energy community[83]. The energy law in **France** allows only specific companies to be in effective control of CECs, such as mixed-energy companies (public limited companies), specific small enterprises that are autonomous, or those with a solidary enterprise of social utility licence. Furthermore, companies and their employees together must not hold more than 40% of the voting rights of an REC or CEC[84]. In **Denmark**, natural and legal persons who make decisions on behalf of the community cannot engage in extensive commercial activities or have the energy sector as their primary area of economic activity. This includes members of the management of companies whose primary economic activity is the energy sector. Furthermore, participants and shareholders who are

[82] Germany does not distinguish between CECs and RECs in its legislation but has decided to move ahead with a single definition.
[83] EC Facility – country fiche Germany.
[84] EC Facility – country fiche France.

involved in extensive commercial activities and have the energy sector as their primary economic activity cannot obtain a controlling influence in the community[85].

Moreover, independent oversight bodies, support for alternative financing models such as crowd funding or community bonds, safeguards for public private partnerships and national or international standards or certifications can help to avoid the abuse of the concept (see Chapter 2).

An official registry of energy communities at the national level, where an independent oversight body approves whether energy communities meet the standard set, could further protect the concept from abuse.

### 2.4. AN AGILE AND RELIABLE REGISTER FOR ENERGY COMMUNITIES

Due to the many forms and shapes energy communities can take, and the complexity of the definitions of them, establishing a registration process could lead to a better overview of the sector and protect the concept against abuse. While **putting in place a registry for energy communities goes beyond EU legislative requirements, it may help identify relevant obstacles and restrictions and monitor national targets for energy communities where those have been set.**

Different Member States adopt different approaches to registering energy communities. A proven successful approach is to **appoint a competent authority to manage a registry of energy communities and periodically validate compliance with national definitions** based on relevant documents (e.g. statutes) without imposing too great an administrative or financial burden on energy communities (e.g. through technical capacity or capital requirements). Registries can validate compliance periodically based on reporting duties on dissolution or when there are significant changes affecting the membership structure, governance or purpose of the energy community.

**Treating the registration of energy communities as separate from the licensing of specific activities** (e.g. energy production, supply or sharing) enables identification of an energy community independently of the specific activities it undertakes and facilitates the tracking of developments over time.

Where relevant, **registries can incorporate a monitoring function** to for keep track of the number of energy communities, their characteristics (e.g. legal forms and technologies used) and related impacts (e.g. number of citizens involved or installed renewable energy capacity). Such a monitoring function can help measure the contribution made to wider EU renewable energy and energy efficiency objectives, or even progress towards a specific target or policy objective for energy communities. In this regard, Article 20a(1) of the RED already requires distribution system operators (DSOs), where technically feasible, to make available data on the renewable electricity generated and fed into the grid by RECs.

[85] More information available here: Bekendtgørelse om VE-fællesskaber og borgerenergifællesskaber og forholdet mellem VE-fællesskaber og borgerenergifællesskaber og elhandelsvirksomheder og kollektive elforsyningsvirksomheder.

For example, in **Italy** a digital registration platform[86] is in place for the registration, management and monitoring of energy communities. The platform operator has to perform a compliance check with the national definitions and reply within three months of the registration request. Once registered, energy communities can apply for tailored incentives. An online map shows the registered energy communities[87]. In **Austria**, the Energy Communities Coordination Office[88] registers communities and depicts them on an online map, which shows both RECs and CECs by region. In **Belgium** (**Brussels**), energy community registration is managed online by Brugel, the national regulatory authority (NRA) and is processed within 60 days after submission of the statutes, the list of members (excluding individuals) and draft agreements governing the planned activities. The NRA provides detailed guidance on the criteria for qualifying as an energy community and on the procedures for submitting, withdrawing and renewing a registration. In **Czechia**, energy communities must apply for registration with the NRA, which checks compliance with the definitions and publishes a list of energy communities online[89]. In **Luxembourg**, the establishment and dissolution of, and significant changes to, the composition of an energy community must be reported to the NRA[90]. **Poland**, as part of a reform under its Recovery and Resilience Plan, established a comprehensive regulatory framework to facilitate the development of energy communities and decentralised energy models. This included establishing a dedicated register for energy communities and clear rules for cooperation with DSOs. Furthermore, a collective and virtual prosumer models were introduced, defining settlement methodologies and prosumer deposits to enable shared energy production in various locations[91].

### 3. EFFECTIVE ENABLING FRAMEWORKS FOR ENERGY COMMUNITIES

**Effective enabling and support frameworks are essential to empower energy communities to develop and connect community energy projects, to perform all relevant activities in the energy sector and to access all relevant and suitable energy markets. The effectiveness of such frameworks depends on an assessment of disproportionate and unjustified barriers and continuous monitoring of the removal of them.**

Both Article 22 of the RED and Article 16 of the Electricity Directive set out enabling frameworks for RECs and CECs at EU level. These frameworks are further complemented by later amendments to these directives, as well as by the EPBD and EED (see Section 1.1).

Since the permitting and licensing of production installations is already covered by the Commission Recommendation (EU) 2024/1343 of 13 May 2024 on speeding up permit-granting

[86] Mappa delle CER in Italia.
[87] https://www.rinnovabili.it/mercato/politiche-e-normativa/mappa-delle-cabine-primarie-gse-cer/.
[88] Koordinationsstelle für Energiegemeinschaften.
[89] Registry available here: https://eru.gov.cz/registr-energetickych-spolecenstvi
[90] Article 9 of the Luxembourg Law of 9 June 2023, amending Article 8quater(11) of the Luxembourg Law of 1 August 2007, form available here: Introduction - Communautés énergétiques - Formulaire de notification.
[91] Positive preliminary assessment of the satisfactory fulfilment of milestones and targets related to the second payment request submitted by Poland on 13 September 2024, transmitted to the Economic and Financial Committee by the European Commission, 12 November 2024, https://commission.europa.eu/document/download/d0a595f0-4006-42aa-b934-3dd1ef1bc6ad_en?filename=C_2024_7976_1_EN_annexe_acte_autonome_nlw_part1_v1.pdf, p. 173.

procedures for renewable energy and related infrastructure projects[92] and the Proposal for a Directive amending Directives (EU) 2018/2001, (EU) 2019/944, (EU) 2024/1788 as regards acceleration of permit-granting procedures[93], solutions for this type of barrier are not developed in detail here.

### 3.1. ASSESSING THE BARRIERS TO AND POTENTIAL OF ENERGY COMMUNITIES

According to **Article 22(3) of the RED**, Member States are required to carry out an assessment of the existing barriers to and the potential for the development of RECs in their territories. Although the RED does not specify a timeline, the assessment is intended to inform the development of enabling frameworks that support the establishment and growth of energy communities. Some Member States have carried out these assessments, but many others are yet to carry them out.

#### 3.1.1. Potential assessment

The assessment of the **potential** of energy communities can include measurements considering different factors[94]. The potential may vary across Member States depending on a range of factors, including culture, socio-economic situation, etc. **An assessment of the potential of energy communities can account for underlying geographic and demographic conditions, as well as relevant policy objectives** such as citizen engagement, renewable energy deployment or tackling energy poverty.

In **Ireland**, the Sustainable Energy Authority of Ireland has conducted an impact assessment of the growth of the sustainable energy community network, the areas and context in which energy communities are likely to emerge, and the extent to which energy communities have a positive correlation with the uptake of national grant programmes for home energy upgrades, solar PV and electric vehicles[95]. In addition, an assessment of barriers and development pathways specifically concerning RECs was conducted in consultation with the relevant stakeholders[96]. It includes a roadmap with suggested solutions specific to the national context and outlining the barriers identified, such as high grid-connection costs, financing challenges and reliance on volunteers. In the **Netherlands**, the Ministry of Economic Affairs and Climate commissioned a study that investigates the potential contribution of energy communities to wind- and solar-based electricity generation and heating solutions by 2030; it concluded that a growth from 500 to between 1 000 and 1 500 cooperatives is possible by 2030, covering 20-30% of all households and contributing substantially to the national targets for renewable energy sources (RESs)[97].

[92] This Recommendation recommends that Member States (i) stimulate the participation of energy communities in renewable energy projects, (ii) implement simplified permit-granting procedures and proportionate permit-granting requirements for energy communities, and (iii) reduce to a minimum production licensing procedures and requirements and similar operational permits or certifications for energy communities, while ensuring compliance with EU law.

[93] Proposal for a Directive of the European Parliament and of the Council amending Directives (EU) 2018/2001, (EU) 2019/944, (EU) 2024/1788 as regards acceleration of permit-granting procedures

[94] Member States could assess the potential in terms of the number of energy communities, total installed RES capacity, citizen engagement, impact addressing energy poverty, etc.

[95] https://www.seai.ie/sites/default/files/publications/secs-focused-impact-analysis.pdf.

[96] Renewable_Energy_Communities_in_Ireland_-_Existing_barriers_and_potential_of_developme.pdf.

[97] Verkenning_toekomstpotentieel_burger-energiebeweging_2030.pdf.

Some regions like **Brussels (Belgium)** have also assessed the benefits and potential at the level of the region[98].

These assessments can serve as a basis to **assess the potential contribution of energy communities to wider EU energy objectives** (e.g. EU renewable energy or energy efficiency targets). It can help align action by different government departments, create momentum for the concept, allow energy communities to unfold their full potential. It can also send a clear signal of the importance and benefit of energy communities for the energy transition and provide a basis to collectively develop an enabling framework for them, delivering legal certainty and increasing confidence. As outlined in Chapter 1, energy communities can help to ensure a citizen-inclusive transition and to accelerate the energy transition by mobilising private investments and increasing public acceptance.

The potential assessment can be leveraged to set **specific objectives for energy communities.** Some Member States have already set such objectives or targets[99].

**Ireland** aims to have 1 500 energy communities by 2030. Ireland's objective is also to support 10% of community-driven renewable electricity projects by 2030[100]. **Italy** has set an objective under the Recovery and Resilience Plan of signing agreements for EUR 795 500 000 to support collective configurations and energy communities located in municipalities of fewer than 50 000 inhabitants[101]. **France** has set the objective of 10 000 locally governed renewable energy projects involving communities and citizens by 2028 according to its roadmap for development of energy communities. In **Lithuania** the NECP sets an objective of 0 473% of total energy production in 2030 coming specifically from RECs that also implement projects to tackle energy poverty. In **Greece**, the NECP includes a quantitative target of 500 MW installed capacity by RECs by 2030.

Where applicable, objectives should be **specific, measurable, achievable, relevant and time-bound (SMART), and based on the assessment of the existing barriers to and potential of energy communities carried out as required in Article 22(3) of the RED** .

National targets or objectives vary in terms of 'SMARTness'. In some Member States there are also **regional and local objectives or targets** for energy communities. In **Spain**, the city of Valencia aims to establish 100 energy communities within the city by 2030. This objective is part of the city's broader plan for a fair and inclusive green transition, aiming to have at least one energy community per district[102]. In **France**, the city of Strasbourg has set itself the target of installing 1 MW of citizen-owned solar PV in the territory by 2030[103].

[98] Étude relative au potentiel, au développement et au fonctionnement des communautés d'énergie, y compris les éventuels obstacles et restrictions injustifiés à leur développement.
[99] ENTEC study on the potential of citizen energy in the electricity sector (forthcoming)
[100] Ireland's National Energy and Climate Plan 2021-2030, page 93.
[101] CER directive (Italian).
[102] REScoop.eu, & Energy Cities. (2022). *Community Energy Municipal Guide*.
[103] Eurométropole de Strasbourg. (2024). *Plan Climat 2030: Plan d'actions V2024*.

The progress towards the contribution to wider energy objectives or specific national targets or objectives could be monitored by the registry for energy communities (see Section 1.5).

#### 3.1.2. Barriers assessment

The assessment of **barriers** allows Member States to make informed policy choices on the measures necessary to establish an effective enabling framework. **Consultation of a wide range of stakeholders**, including energy cooperatives or communities and/or their representatives, civil society, local authorities, financial intermediaries and system operators is crucial in understanding the proportionality of and justification for identified barriers. Barriers may **cover a wide range of issues across the project-development cycle and licensing requirements for different types of activity**.

In **Croatia**, the Ministry of Economy and Sustainable Development has conducted an assessment with recommendations on removing barriers to the uptake of renewable energy, including for energy communities. The assessment includes solutions that consider the interest of other stakeholders and market principles[104]. **Latvia** included a list of common barriers in a community handbook developed as part of an EU project[105]. In **Finland**, the Ministry of Economic Affairs and Employment set up a dedicated working group to develop a coherent enabling framework for different types of energy communities following an earlier assessment of barriers and potential[106].

### 3.2. MONITORING THE REMOVAL OF BARRIERS AND THE ACHIEVEMENT OF POTENTIAL

Beyond the assessment required under Article 22(3) of the RED, continuous monitoring of barriers and the growth of energy communities considering their potential can be an effective instrument to ensure the legal framework is in tune with the development of energy communities.

Pursuant to Article 59(1)(z) of the Electricity Directive, the regulatory authority has the duty to monitor the removal of unjustified obstacles to and restrictions on the development of CECs and RECs.

There is no legal obligation on Member States to **monitor the growth and impact of energy communities**, considering their potential. However, such a monitoring exercise can provide a useful feedback loop to policymakers. Good practices involve for example continuously **updating the assessment of barriers and potential of energy communities as a 'living document'** and planning periodic reviews of the progress made. Legal, regulatory, policy and economic contexts evolve quickly, and the assessment can help adapt the framework to the evolving landscape. Some stakeholders, for instance energy regulators, can be crucial to monitoring the removal of barriers.

In **Slovenia**, the government has established a community enabling programme responsible for supporting the development of RECs[107] through identifying obstacles to and potential for the

[104] OIE - PROCJENA S PREPORUKAMA ZA UKLANJANJE PREPREKA verzija 3 FINAL.pdf
[105] https://rpr.gov.lv/wp-content/uploads/2020/04/rokas-gramata_28.04_lv.pdf.
[106] Energiayhteisöt ja erilliset linjat : Energiayhteisötyöryhmän loppuraportti.
[107] Article 44(1) of the ZSROVE. See also EC Facility – Country Fiche Slovenia.

development of REC[108]. The programme is responsible for removing barriers and administrative obstacles. The removal of the barriers is monitored by the Energy Agency of the Republic of Slovenia[109].

In **Austria**, the Federal Law on the Expansion of Energy from Renewable Sources (EAG) provides the legal framework for RECs[110]. Under this law, the Ministry of Energy is required to review support schemes for renewable energy production **every five years**. For these evaluations the regulator, network operators and energy communities must supply relevant data, and the assessment must address both RECs and CECs. The review should include their status and development, identify any barriers or limitations, and offer recommendations for improving legal requirements. Austria monitors compliance with these legal requirements for energy communities, and e-Control – the national regulator – has the authority to conduct random or targeted compliance checks. It also publishes an annual report detailing the establishment and operation of energy communities.

### 3.3. PERMITTING AND LICENSING

Directive (EU) 2024/1711 of the European Parliament and of the Council of 13 June 2024, has introduced a comprehensive framework to speed up planning and permit-granting for renewable energy projects, related grid infrastructure and storage assets as well as a new concept of renewables acceleration areas. It has shortened the deadlines for granting permits to such projects, especially for small-scale projects, mandates full digitalisation of permit-granting and introduces a presumption of overriding public interest. It has also reinforced the tasks and responsibilities of the single contact points for applicants, which include making available an online manual of procedures for developers of renewable energy plants, also specifically addressing small-scale renewable energy projects, renewables self-consumer projects and RECs. On the land-use planning side, Article 15b of the RED it introduces a new obligation to map domestic potential and the areas available to reach the targets, and Articles 15c and 16a introduce the concept of renewable acceleration areas (RAAs), where environmental impacts are assessed to be low and projects are in principle exempt from environmental impact assessments. These changes **could significantly ease the burden on energy communities when developing renewable energy and co-located storage projects.** Moreover, the public participation mandated by Article 15d(a) of the RED for the designation of RAAs offers an opportunity to engage with citizens on the possibility of setting up energy communities. The European Grids Package includes a legislative proposal to further streamline the permit-granting procedures, including for small-scale renewable energy and storage installations as well as recharging stations.[111]

[108] Article 55(3) of the EZ-2.
[109] Article 55(3) of the EZ-2.
[110] ECR country fiche - Austria. and E-Control-annual-activity-report-2024.pdf.
[111] Proposal for a Directive of the European Parliament and of the Council amending Directives (EU) 2018/2001, (EU) 2019/944, (EU) 2024/1788 as regards acceleration of permit-granting procedures, COM/2025/1007 final, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC1007&qid=1772700784024

Furthermore, the Commission Recommendation on speeding up permit-granting[112] encourages Member States to implement **simplified permit-granting procedures and proportionate permit-granting requirements for RECs and CECs.** These simplifications may concern the connection of community-owned plants to the grid, reducing production licensing procedures and requirements to a minimum, and similar operational permits or certifications, while ensuring compliance with EU law.

In **Portugal**, for example, RECs benefit from exemptions from prior control/communication, registration and operating requirements, depending on the installed capacity and the use of the public network for the injection of electricity in the case of self-consumption[113].

### 3.4. GRID-CONNECTION PROCEDURES

Energy communities, as other market participants, increasingly face difficulties finding available grid capacity for their projects. At least 15 countries in the EU are reportedly experiencing grid-connection queues, with the waiting time varying from several months up to a few years on higher-voltage levels[114]. This issue is aggravated for energy communities. Because of their frequent reliance on voluntary work and lack of technical capacity, they are particularly affected by sometimes complex procedures and differing levels of transparency about grid-hosting capacity. Article 22(4)(d) of the RED and Article 16(1)(e) of the Electricity Directive require Member States to establish proportionate, fair, transparent and non-discriminatory procedures, including grid-connection procedures for RECs and CECs. Article 31(2) of the Electricity Directive further, requires that DSOs not discriminate against RECs or CECs in favour of related undertakings.

While the Commission Notice on guidance on grid connections (C/2025/8473)[115] assesses in depth the challenges related to the existing treatment of grid connections for all producers and consumers, some elements specific to energy communities are analysed below.

#### 3.4.1. Financing and transparency of grid connections

Financing challenges in relation to grid access may include the level of the financial security deposit or guarantee required for a grid application[116]; high connection costs in general or delays in grid connection may negatively affect the financing of the whole project[117]. While deposits are

[112] Commission Recommendation (EU) 2024/1343 of 14 May 2024 on speeding up permit-granting procedures for renewable energy and related infrastructure projects.

[113] EC Facility – country fiche Portugal

[114] Source: European Commission: Directorate-General for Energy, Fraunhofer Institute for Systems and Innovation Research ISI, Guidehouse, Fraunhofer Research Institution for Energy Infrastructures and Geotechnologies IEG and Regional Centre for Energy Policy Research (REKK), *Study on network development planning, tariff structures and connection requests for electricity distribution grids – Final report*, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2833/9351025

[115] Commission Notice – Guidance on efficient and timely grid connections C/2025/8473

[116] A financial deposit is required to secure a spot in the waiting list. The financial deposit may be lost if the energy community abandons the project due to high connection costs. See The grid access of energy communities a comparison of power grid governance in France and Germany A. Wainer *,1 , D. Petrovics, N. van der Grijp.

[117] In Ireland one project received a connection offer amounting to EUR 4.5 million for a 5 MW solar PV project because the transmission grid needed to be upgraded, effectively halting the project. High connection costs were

often needed to avoid speculative connection requests entering the grid-connection queue, the issue is of particular interest for energy communities due to their non-commercial character. To address these challenges different measures can be taken.

- As highlighted in the grid-connection guidance, deposits should reflect the size of the installation and nature of the applicant, while also serving as a deterrent to speculative requests. For energy communities the **financial security deposit can be reduced when specific project maturity conditions are met by energy communities**, and/or it can be made possible to recover a deposit if the connection cost is deemed too high for the project to be viable.
- **Financial support** can be provided to energy communities. For example, zero-interest loans could be provided through public finance, to help de-risk the cost of concluding a grid-connection agreement[118].
- **Installed payment plans** can be used to provide energy communities with more time to obtain the necessary financing once their project is up and running[119].
- Measures can be introduced to speed up the grid-connection procedure itself, which can positively impact the business case, including for energy communities.

For example, in **Ireland**, under the national regulatory authority's **CRU Electricity Connection Policy – Generation and System Services (ECP-GSS)[120]**, energy communities can now enter the grid connection process as soon as they have successfully completed a planning application. This allows connection and planning procedures to proceed in parallel, replacing the previous two-year reservation mechanism.

**Transparency issues** with the grid-connection procedure are also raised by stakeholders[121] – in particular a lack of transparency on potential grid capacity and grid-connection costs, which put them in an uncertain situation risking waste of time[122] and money[123] and can discourage energy communities from moving forward with their project[124]. While the Electricity Market Design Revision introduced new requirements on transparency regarding grid-hosting capacities and on the state of connection requests; nevertheless, national implementation varies greatly. Grid-hosting

cited as a significant barrier in France (Sebi and Vernay, 2020), the UK (Brummer, 2018) and Spain. See ECR barriers and action drivers report. See also The grid access of energy communities a comparison of power grid governance in France and Germany A. Wainer *,1 , D. Petrovics, N. van der Grijp.

[118] ECR barriers and action drivers report.

[119] ECR barriers and action drivers report.

[120] Electricity Connection Policy – Generation and System Services Decision Paper CRU2024101_Electricity_Connection_Policy_Generation__System_Services_Decision_Paper.pdf

[121] The grid access of energy communities a comparison of power grid governance in France and Germany A. Wainer *,1, D. Petrovics, N. van der Grijp.

[122] Energy communities have to submit a grid connection application including several technical and administrative documents, often including planning permission. This means the energy community projects must be at a relatively advances stage. If the costs turn out too high, the project will need to be abandoned after sometimes more than a year of preparatory work.

[123] In some Member States, the deposit will not be refunded if the project is abandoned.

[124] See ECR barriers and action drivers report.

capacity maps have now been introduced in 22 Member States at the distribution level, but they do not always cover all voltage levels.

In this context, the EU already has a robust framework in place.

- **Article 31(3) to (5) of the Electricity Directive require that DSOs develop forward-looking and transparent network plans and grid capacity maps,** allowing energy communities to have clarity around the potential for developing projects in certain areas, in line with existing legal requirements of the Electricity Directive and the Electricity Market Regulation 2019/943[125] (EMR) and recommendations of the anticipatory investment guidance[126].
- **Article 33(4) of the Electricity Directive** requires DSOs to publish regular information on the state of play of grid-connection requests in their area of operation.
- **Article 25 of the Electricity Directive requires Member States to provide a single contact point** to allow energy communities to discuss their grid-connection questions and offer support for **local authorities**[127] to help simplify procedures and clarify questions related to broader permitting issues.

In addition, clarity on the **timeframe** by which the grid operators need to inform energy communities about connection procedures and costs can be beneficial to increase transparency. The timely communication of the estimated cost of obtaining a grid connection allows energy communities to integrate grid-connection costs at the pre-development stage when conducting feasibility studies[128].

### 3.4.2. Technical requirements and character of grid-connection procedures

In addition to the lack of transparency and financial issues, in some cases the **length and complexity** of grid-connection procedures were also identified as a barrier[129]. In line with the requirements of Article 31(3a) of the Electricity Directive, Member States must provide a fully digital option to process their connection requests[130]. The grid-connection guidance stresses that the process should be sufficiently clear and simple for all applicants. Given the specific nature of energy communities and the fact they frequently lack technical capacity, they may require additional assistance with grid-connection applications. In some Member States, public authorities

[125] Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast), http://data.europa.eu/eli/reg/2019/943/oj

[126] Commission Notice on a guidance on anticipatory investments for developing forward-looking electricity networks, C/2025/3179, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025XC03179&qid=1750695420666.

[127] The grid access of energy communities a comparison of power grid governance in France and Germany A. Wainer *,1, D. Petrovics, N. van der Grijp.

[128] ECR barriers and action drivers report.

[129] See The grid access of energy communities a comparison of power grid governance in France and Germany A. Wainer *,1, D. Petrovics, N. van der Grijp. See also ECR barriers and action drivers report, pp. 55-51.

[130] Article 31(3a) of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast) – available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02019L0944-20240716&qid=1724246232027.

and DSOs have put in place support structures to ease understanding and set up grid-connection procedures.

In **France**, some municipalities have organised cooperation agreements with the DSO to simplify procedures and clarify questions. In **Spain**, a Catalan DSO has created a service company[131] with a dedicated unit for energy communities with the aim of centralising all administrative requirements to register an energy-sharing project[132]. In **Ireland**, the Sustainable Energy Authority of Ireland has published a grid-connection report as part of the Community Energy Resource Toolkit, covering grid-connection feasibility, the application process, the connection method and costs[133].
Some Member States have put streamlined administrative or technical requirements in place for energy communities, like in **Portugal**[134] through a digital platform or in **Spain**[135] through a simplified licensing portal. In **Slovakia**, energy communities are exempt from normal permitting and licensing requirements, including regarding grid connections, if they produce or store electricity in a facility up to 1 MW. Instead of full permits and licensing procedures, a notification to the national regulatory office is sufficient[136].

**Procedures can also be expedited by streamlining approval processes and subjecting them to concrete approval timelines.** The RED already stipulates in this regard that the permit-granting procedure for the installation of solar energy equipment up to 100 kW and heat pumps up to 50 kW must not exceed one month (with an obligation to permit connections to the grid for heat pumps up to 50 kW within two weeks).

In **Luxembourg**, projects up to 30 kW, including those operated by energy communities, can benefit from expedited grid-connection procedures; if no objections are raised within one month of the application, the connection request is deemed approved[137].

### 3.5. DEVELOPMENT AND OPERATION OF ENERGY NETWORKS

**Article 16(2) of the Electricity Directive** enables Member States to allow CECs to **own, establish, purchase or lease distribution networks** and to manage them autonomously. Some Member States[138] have allowed this explicitly already.

Member States can choose to apply the exemptions in Article 38(2) of the Electricity Directive, including from regulated third-party access and market-based procurement of flexibility services.

[131] Elecsum: Especialistes en comunitats energètiques.
[132] ECR barriers and action drivers report.
[133] Available here: Community-Toolkit-Grid-Connection.pdf.
[134] EC Facility – Country fiche Portugal.
[135] EC Facility – Country fiche Spain.
[136] Catalogue of the best operating models of energy communities, p. 76.
[137] Art. 4(3) of the Luxembourg Law of 9 June 2023, amending Article 5(6ter) of the Luxembourg Law of 9 June 2023.
[138] See, for example, Italy.

Implementing this provision would allow **closed CEC networks** to be established[139]. This can be especially useful in areas where otherwise the grid is congested.

In the **Netherlands**, Schoonschip is an energy community that operates its own solar electricity system. Each household has a battery, which is owned and operated by the community. The community also operates the local grid and the community energy management system, which includes operation of the batteries, demand response and electricity exchange with the distribution system[140].

Furthermore, according to **Article 22(2)(b) of the RED**, RECs can be allowed to take up the role of DSO and have the right to not be subject to discriminatory treatment in terms of rights and responsibilities in this regard. **RECs can also operate HC networks** and have the potential to help electrify heat supply and operationalise neighbourhood projects that actively engage citizens and mobilise private investment. **Article 23(4)(k)** of the **RED** promotes renewable based DHC networks by RECs through regulatory measures, as well as financing arrangements and support.

In **Denmark**, the Heat Supply Act provides for the non-profit principle[141], and allows ownership of HC to be through various entities. Private companies and cooperatives hold an equivalent legal status and are bound by the same regulations governing the DH sector. DH networks in Denmark therefore tend to be in collective ownership, where either municipalities or citizens hold decision-making power. For example, **Avedore Green City** is a community in Denmark which applied for and was awarded an ELENA grant for the extension and modernisation of the DH network in their municipality. Their application was supported through a grant from the Danish Energy Agency, and the total investment for the project was EUR 33.4 million. The scope of the project included the extension of existing DH, a renovation programme for social housing and other modernisation works on existing networks.

Under **Article 25(6)(g) of the EED**, Member States must ensure that regional and local authorities prepare **local heating and cooling plans** in, as a minimum, municipalities having a total population higher than 45 000. These plans should as a minimum assess the role of energy communities and other consumer-led initiatives that could actively contribute to the implementation of local HC projects.

In the **Netherlands**, municipalities must develop a heat programme based on a neighbourhood approach[142]. In **Denmark**, the Danish Energy Agency supplies methodologies and socio-economic data for municipal heat planning through technology catalogues and additional guidance. The

[139] For example, in Portugal, CECs are allowed to operate closed distribution grids. See EC Facility – Country fiche Portugal.
[140] Schoonschip – Amsterdam.
[141] Meaning that revenues have to equal costs over time and any surplus has to be reinvested in the system or returned to consumers through lower tariffs.
[142] EU Tracker – Local heating and cooling planning in the Netherlands - Energy Cities.

Agency also offers targeted financial programmes to support consultancy services and project implementation[143].

### 3.6. ENERGY SHARING

Rising imbalances in costs and grid capacity constraints are in tension with the indiscriminate and static use of feed-in tariffs or premium prices. Consequently, some Member States have started phasing out feed-in tariffs or have shifted towards feed-in premium prices[144]. Where no operational support is available, energy communities and their members or shareholders often rely on remuneration by suppliers for surplus energy that is not self-consumed.

Faced with these new realities, energy communities have shifted towards new business models based on self-supply or -consumption. Emerging and smaller-scale energy communities often have limited capacity to obtain a supply licence or to enter into purchase power agreements (PPAs). Through energy sharing, community members and shareholders can access more easily renewable electricity that is produced by their energy community.

**Article 15a of the Electricity Directive regulates and facilitates energy sharing** as a service that can be provided by the energy community to its members, independent of a supplier. As the energy sharing must occur within the imbalance settlement period, energy sharing is essentially self-balancing of energy. In the event of excess demand or surplus production, the retail supplier of the members or shareholders of the energy community will be the balance responsible party (BRP).

**Member States are required to implement Article 15a of the Electricity Directive by 17 July 2026.** The implementation of a standardised approach to energy sharing ensures a level playing field for energy communities across different activities, including energy sharing, which some Member States have already implemented.

In **Austria**, collective energy sharing is enabled within a 15-minute imbalance settlement period for final customers acting jointly within the same multi-apartment building, or through RECs and CECs. In **Portugal**, energy sharing is enabled between two or more active consumers, whether organised through a REC or another organisational form, within a two-kilometre radius or when connected to the same transformer station; a four-kilometre radius for medium-voltage (MV) connections; a ten-kilometre radius for high-voltage (HV) connections; and a 20-kilometre radius for very HV connections. The energy values must be measured every 15 minutes and reduced by the allocated energy generated as part of an energy sharing arrangement.

[143] Sem Oxenaar, "Making Europe's Homes 'Hygge': Danish lessons on district heating overview of Danish district heating policy and regulation" (Regulatory Assistance Project 2025).
[144] See, for example, Austria, Italy and the Netherlands.

## 3.7. ACCESS TO RELEVANT ENERGY MARKETS

### 3.7.1. Sales of energy

There are several ways in which an energy community can be empowered to sell and resell energy to its members and other final customers, including through PPAs, peer-to-peer trading arrangements or through the wholesale and retail markets.

In practice, energy communities either self-produce and/or buy renewable energy to supply it back to their members or wider base of final customers. Some energy communities have concluded PPAs with local authorities and SMEs. To meet excess demand or sell surplus production, energy community suppliers also make use of market structures such as peer-to-peer trading platforms[145] or wholesale markets[146].

**Article 16(3)(a) of the Electricity Directive** entitles CECs to access all electricity markets, either directly or through aggregation, in a non-discriminatory manner. Furthermore, Article 16(3)(b) requires CECs to be treated in a non-discriminatory and proportionate manner regarding their rights and obligations as suppliers. Under Article 2(12) of the Electricity Directive, 'supply' means the sale, including the resale, of electricity to customers. Electricity markets include markets for the trading of energy, capacity, balancing and ancillary services in all timeframes, pursuant to Article 2(9) the Electricity Directive.

**Article 22(2)(c) of the RED** provides that RECs can access all suitable energy markets both directly or through aggregation in a non-discriminatory manner. Article 22(2) of the RED guarantees the right of RECs to sell renewable energy, including through renewables PPAs.

**Supply licensing**

The sale of energy often requires obtaining a supply licence. In this regard, the administrative and financial requirements for supply registration and licensing are often outdated and disproportionate for energy communities looking to sell or purchase limited quantities of electricity for a limited number of members or final customers within a confined geographical space[147,148].

Moreover, energy communities are faced with high administrative and technical complexity when taking up supplier obligations, as they are often too small to trade and operate on wholesale markets[149]. In addition, the high level of guarantees required to operate on the wholesale market poses a significant burden, and finding a suitable BRP can be difficult[150].

[145] ENTRNCE | The Platform.
[146] ECR barriers and action drivers report, p. 76.
[147] For instance, in Italy, it is estimated that break-even for a new cooperative supplier is around 6 500 supply contracts. (FSR, 2021).
[148] Hall, S and Roelich, K (2016). Business model innovation in electricity supply markets: the role of complex value in the United Kingdom. Energy Policy, Vol 92, May 2016, pp 286-298.
[149] For example, in Ireland the minimum volume to access hedging products in the day-ahead market is 1 MW per hour. See ECR barriers and action drivers report.
[150] In order to operate on the wholesale market energy communities need to pay a financial guarantee (in PT this is around EUR 200 000). See ECR barriers and action drivers report.

Some Member States have **granted exemptions from having to become a fully licensed supplier** where energy communities supply limited quantities of self-produced energy to a limited number of final customers, with the possibility to delegate balancing responsibility to a third party, in line with Article 5 of the EMR.

In **Belgium** (**Brussels**), energy communities can obtain a limited supply licence either to a capped quantity of electricity, when they wish to limit their financial guarantee, or to certain categories of customers, or to their own supply. Further criteria can be set by government decree and may relate to the good repute and professional experience of the applicant, technical and financial capacities, and the quality of the organisation[151].

In the **Netherlands**, self-produced electricity or gas can be supplied by energy communities if:

- it does not supply more annually than it feeds into the system;
- the supply targets members or shareholders of the energy community; and
- the community has a limited number of members or shareholders[152].

Furthermore, **cooperation between energy communities and main balance responsible parties (BRP)** can help to reduce financial, administrative and technical complexities that come with obtaining a supply licence. In **Germany**, for example, the standard balancing group contract used by TSOs allows for assignments of balancing deviations (i.e. main and sub-balancing groups), allowing energy communities to become a supplier without having to meet full collateral requirements or take on full balancing responsibility[153].

**Secondary or professionalised energy communities can also take on the role of supplier on behalf of local energy communities.**

For example, Energie VanOns in the **Netherlands** is a supplier that works exclusively with other energy communities[154]. In **Belgium (Flanders)**, the community supplier Ecopower works together with a third-party trader to meet excess demand or sell excess production on the wholesale market.

**Power purchase agreements**

Energy communities may wish to sell their self-produced electricity or buy in electricity as consumers to meet the demand of their members and other final customers. The benefits of PPA contracts include setting a fixed or predictable price for the customer for an agreed timeframe, while ensuring price visibility for producers, which contributes to unlock investments.

**Article 2(17) of RED defines a 'renewables power purchase agreement'** as 'a contract under which a natural or legal person agrees to purchase renewable electricity directly from an electricity producer'.

[151] Article 26 Electricity Ordinance in EC Facility country fiche BE (Brussels), EECF country fiche BE (Brussels).
[152] Wat zegt de Energiewet over participatie en energiegemeenschappen? | Energieparticipatie.nl - Dé leeromgeving voor participatie bij duurzaam opwekken.
[153] Netztransparenz > Electricity market design > Electricity Balancing (EB) > Balancing group contract.
[154] REGEN. *Local Supply: Options for welling your energy locally*, 3rd edition.

As producers, energy communities often lack legal or financial expertise and production scale and creditworthiness to enter into long-term PPAs. As consumers, they also face difficulties due to longer-term demand uncertainty, perceived financial instability, administrative and technical complexities (e.g. balancing responsibilities) and market access barriers.

**Article 19a(3) of the EMR** aims to address this by requiring Member States to ensure that instruments such as guarantee schemes at market prices, private guarantees, or facilities pooling demand for PPAs are in place to reduce the financial risks associated with consumer payment default and to ensure these are accessible to customers that face entry barriers to the PPA market and that are not in financial difficulty. The Commission is monitoring the implementation of these provisions by Member States and preparing recommendations on the removal of barriers in the PPA markets, including disproportionate or discriminatory procedures or charges.

In the design of support schemes for the deployment of renewable energy, Member States can also ensure access to certain categories of customer, especially those that face barriers to access the PPA market.

Some Member States **actively promote the cooperation of fully licensed suppliers and BRPs** with energy communities wanting to enter into PPAs.

For instance, in **Ireland** it is possible to register as a small supplier, if the supplier has less than 200 customers. The aim is to allow producers to enter PPAs for the direct sale of production to a final consumer without having to become a fully licensed supplier. This arrangement requires a fully licensed counter-party that can provide services such as balancing.

**Peer-to-peer trading**

Peer-to-peer trading can be an alternative, emerging pathway for energy communities to sell electricity to their members or other energy communities based on close to real-time data exchanges. Under **Article 2(18) of the RED** peer-to-peer trading is defined as the trading of renewable energy between two market participants based on a contract with pre-determined conditions which define the execution and payment of the transaction. This can take place between the two parties involved directly or through a third-party entity.

In the **Netherlands,** the Dutch DSO has created an online trading platform called 'ENTRNCE'[155] to facilitate the trading of electricity between energy communities. In **Austria**, the cooperative OurPower facilitates peer-to-peer trading between producers and consumers. For this it works together with a fully licensed supplier to provide balancing services[156].

The development of peer-to-peer trading platforms can be promoted based on smart contracts that automatically execute and enforce the terms of energy trade once conditions are met, as an alternative to traditional supply, whilst ensuring energy communities are financially responsible

[155] Available at: https://www.entrnce.com/.
[156] OurPower - die Energiecooperative. Mach Deinen Strombezug zur Strombeziehung.

for any imbalances they may cause. In this regard, cooperation agreements with fully licensed suppliers or balancing responsibility parties will still be required.

### 3.7.2. Flexibility services

Energy communities may wish to sell **flexibility services** (shifting load, or curtailing consumption, and storing or self-balancing self-produced electricity) on relevant energy markets, whether directly or through an aggregator, to **help support the grid, balance supply and demand, and unlock new revenue streams**. Unlocking these new value streams based on system benefits[118] can help to increase certainty and predictability of return on investment and profitability of projects, including community energy storage or EV sharing, also via bi-directional charging.

Pursuant to **Article 22 of the RED and Article 16 of the Electricity Directive**, RECs and CECs are entitled to operate as an aggregator, or to work through an aggregator to access energy markets to provide flexibility services.

However, in practice, many regulatory, structural and procedural **challenges** remain for energy communities to offer their flexibility on electricity markets[157]. These challenges include a lack of smart-meter roll-out, access to real-time data and automated control infrastructure, and market designs with minimum bid thresholds that are too high (e.g. 1 MW), difficulties in meeting pre-qualification criteria (e.g. financial guarantees) to enter energy, congestion management and ancillary services markets, and a lack of technical expertise to operate flexibility portfolios[158]. The absence of specific guidelines and standards (e.g. on data interoperability) and disproportionate licensing requirements for aggregators further restrict the practical involvement of energy communities[159].

To address some of these challenges, **the Commission is in the process of developing an Implementing Act on data interoperability and a network code on demand-response** to harmonise standards and procedures for the management of data, as well as to lower barriers to access electricity markets, and to foster the development of local service markets at DSO level that are accessible for active customers and energy communities.

The increasing uptake of Energy Smart Appliances (ESA) by energy communities can boost flexibility potential and interoperability plays a key role, guaranteeing smooth exchange of data among actors and placing in the market interoperable ESA models[160].

Through targeted financial and technical support, reliable access to data and infrastructure, and tailored or conducive regulatory frameworks, the flexibility potential of energy communities can be unlocked. **Regulatory sandboxes can help to identify the conditions, rights and**

[157] Through its Horizon programme, the Commission has also funded various projects to develop smart energy management tools that help energy communities to design, sell and operate flexibility service (e.g. RENNAISSANCE, TwinERGY, eCREW, LEC, ENPOWER, RESCHOOL and REScoopVPP).
[158] ENTEC Study on the potential of citizen energy in the electricity sector [forthcoming].
[159] ENTEC Study on the potential of citizen energy in the electricity sector [forthcoming].
[160] Code of Conduct for Energy Smart Appliances | JRC SES.

**responsibilities, and products that are conducive to energy communities offering their flexibility on electricity market.**

In **Italy**, the regulatory authority, ARERA, has adopted a comprehensive reform of the rules on dispatching with the aim of implementing incentive mechanisms for those who contribute to the system's flexibility and opening access to a larger number of participants, including RECs and CECs[161]. ARERA has also put in place rules to test the most appropriate regulatory solution for the provision of local ancillary services and remuneration based on pilot projects[162].

The **RomeFlex pilot project**[163] aims to manage the flexibility of the local electricity network and allows active participation of users offering flexibility services, including small-scale distributed energy resources (DERs)[164]. Within this pilot project, the **'Enostra' energy community acts as an aggregator** for each DER within its portfolio and communicates daily to the DSO the power that is made available at different time intervals by each resource via the balancing service provider platform. The members of the energy community receive a request to adjust their power in exchange for compensation.

Congestion management and ancillary service markets, where relevant, can be made accessible to energy communities by **lowering minimum bid sizes and ease pre-qualification requirements where possible**, especially for local service markets operated by DSOs. Where this is not possible, **cooperation between energy communities through secondary structures or partnerships with third-party aggregators or digital service providers** can help to aggregate small-scale DERs so that they meet the minimum size requirements for participation in these markets[165].

Furthermore, **economic incentives can help to unlock the implicit demand-response potential of energy communities**, limiting the need for procurement of flexibility. The Commission Notice on Guidelines on future-proof network charges for reduced system costs, network tariffs[166], together with the energy component of the electricity bill, can be used to incentivise changes in how the grid is used. By applying capacity-based charges or dynamic tariffs, energy communities and their members can be encouraged to shift their electricity consumption away from peak periods. This can also improve the economic viability of community energy assets, in particular storage and electric vehicles. To ensure energy communities can also react to such incentives, it is important that they can make use of **dynamic allocation methods when engaging in energy sharing**, to support dynamic management of consumption and responsive demand-response participation.

[161] Delibera ARERA 345/2023/R/2019 Approvazione del Testo Integrato del Dispacciamento Elettrico (TIDE) - Arera.
[162] Resolution ARERA 352/2021.
[163] RomeFlex, il progetto per i servizi di flessibilità locale | Areti.
[164] Platone - News.
[165] ENTEC study on on the potential of citizen energy in the electricity sector (forthcoming).
[166] C(2025) 4010 final, Communication to the Commission, Approval of the content of a draft Commission Notice on Guidelines on future proof network charges for reduced system costs, https://energy.ec.europa.eu/document/download/d911cc86-121d-445c-bd27-a14098ede7e2_en?filename=C_2025_4010_1_EN_ACT_part1_v3.pdf.

For example, in **Austria**, energy communities can opt for dynamic energy sharing based on the close-to-real-time consumption needs by participants[167]. Similarly, in **Portugal**, under specific conditions[168], energy sharing can be based on dynamic management systems[169], which allow for close-to-real-time management of electricity[170]. RECs are required to use platforms certified by the regulator to enable real-time dynamic energy sharing among members[171].

### 4. ACCESS TO FUNDING AND FINANCING

Energy communities have to take several steps to tackle the different barriers to access funding and financing required for their development through the project implementation cycle.

At the start, the community comes together to lay the groundwork and identify opportunities in a **business plan**[172]. Once the development phase has been reached, the community will have to obtain the **necessary permits** and comply with existing regulation, organise outreach campaigns to attract new members, and create partnerships with stakeholders[173]. During the construction phase, the community has to find the necessary **investment capital and/or bank loans** to help finance the renewable or energy efficiency project.

Energy communities mostly **rely on the capital, technical expertise and time of a few (volunteer) members** of the community to plan, develop and construct sustainable energy projects. Access to external funding for technical assistance or project financing at national level is often limited or heavily priced due to the small scale and relatively high number of requirements[174]. Access to loans is also hampered for energy communities in comparison to commercial developers given their lack of collateral and track record.

**Article 22(4)(g) of the RED** requires Member States to include tools to facilitate access to finance in the enabling framework for RECs. Moreover, **Article 22(7) of the RED** requires that Member States consider the specificities of RECs when designing support schemes to allow them to compete for support on an equal footing with other market participants. To meet the annual increase of the shares of RESs required in the HC sector, **Article 23(4) of the RED** provides that Member States may promote development of DHC networks by RECs, including through regulatory measures, financing arrangements and support. Due to the initial cost of heating projects, financial and technical support from other stakeholders or public actors becomes even

[167] See: https://energiegemeinschaften.gv.at/messung-und-aufteilung/.
[168] (1) access to metering data; (2) transparency on energy sharing or applicable sharing keys; (3) interoperability with the network operator's systems.
[169] For example, Wattshare and E-REDES.
[170] Article 87(2) of the Law 15/2022; Article 87(3) of the Law 15/2022; EECF country fiche Portugal; Article 87(4) of the Law 15/2022.
[171] See Law 99/2024.
[172] For example, conduct a needs assessment, legal and organisational set-up, technical feasibility study and financial planning.
[173] For example, DSOs, municipalities and utilities.
[174] Due to difficulties in identifying a viable business case, the value over a profit-driven business model, the limited and uncertain sources of private capital investments, and small project portfolios. See: Vandevyvere et al., 2021 in MuseGrid; REScoop.eu (2021). Finance Guide (Coolkit) – D4.1.2 – Compile, p 20.

more important in energy communities focused on HC projects (thermal energy communities, for example)[175].

**Many Member States have established funds and financing instruments**[176] to support energy communities across the different stages[177] of the project implementation cycle.

In **Ireland**, the Sustainable Energy Community Network provides support to plan, develop and finance energy efficiency and smart RES projects in accordance with a 'learn, plan, do' approach. Today there are almost 900 active sustainable energy communities[178]. Similarly, in **Spain**[179] there are multiple support schemes in place for energy communities, providing grants for feasibility studies (CE Planifica), technical assistance, and investments in storage and solar PV installations (CE Imlementa)[180]. In the **Netherlands**, several support instruments are in place, including operational support ('Subsidieregeling Coöperatieve Energieopwekking')[181], a revolving grant-to-loan scheme for developing renewable energy projects ('ontwikkelingsfonds opwek') and heat networks ('ontwikkelingsfonds Warmte')[182], as well as a loan facility ('realisatiefonds')[183]. In **Slovakia** grants for upfront capital expenditure (CapEx), concessionary loans for scaling, and a technical assistance grant are envisaged for small-scale and community energy projects across different programmes[184].

Some Member States have also **made use of EU funding to promote and support energy communities**, particularly the Cohesion Funds and the Modernisation Fund[185,186].

**Czechia** is using the Modernisation Fund to invest in energy communities through the KOMUENERG programme. The programme will support municipalities and local stakeholders in developing projects[187].

[175] Hartmann, K. and Palm, J. (2022), https://doi.org/10.3389/frsc.2022.1027148.

[176] For example, a revolving fund based on a loan-to-grant model, smaller low-cost loans, risk-free loans, public-private partnership grants, subsidies etc., e.g. Poland in its Recovery and Resilience Plan or through the Modernisation Fund, see EC Facility - country fiche Poland, Slovakia through its Recovery and Resilience Plan, see EC Facility - country fiche Slovakia, or Lithuania with its Energy Efficiency Fund, see EC Facility - country fiche Lithuania

[177] Pre-development, development, post-development, construction phase and operational phase.

[178] [TANDEM] Territorial Analysis of Decentralised Energy Markets | ESPON (2025).

[179] EC Facility – Country fiche Spain.

[180] Assistance is offered by the Institute for Diversification and Saving of Energy (IDEA), an agency of the Spanish Ministry for Ecological Transition. More information on the programmes is available here: Presentación de PowerPoint.

[181] Realisatiefonds voor energiecoöperaties - Energie Samen.

[182] Ontwikkelfonds Warmte geopend - Buurtwarmte.

[183] Realisatiefonds voor energiecoöperaties - Energie Samen.

[184] Slovak Green investment scheme, Komunita pre OZE grant.

[185] As energy communities can contribute to most of the objectives of the Modernisation Fund, they can be beneficiaries of national investment programmes.

[186] Projects co-funded by the EU.

[187] Modernisation Fund – SFŽP ČR.

**Cohesion policy supports the development of energy communities in the 2021-2027 programming period**, in particular under its policy objectives 'a Greener Europe' (PO2)[188] and 'Europe closer to citizens' (PO5) in Regional and Interreg programmes which are part of the European Regional Development Fund (ERDF). Under Cohesion policy energy community cooperation actions and cross-border energy communities are supported via Interreg, the key EU instrument for territorial cooperation. Actions supported include capacity-building and knowledge exchange as well as feasibility studies and investments.

The Commission's Cohesion for Transition Community of Practice Working Group on Energy has also published guidance on how to design public financing calls for energy communities to help managing authorities supporting the development of energy communities and other projects tackling energy poverty[189].

The Commission has recommended that Member States and regions, **when reprogramming under the mid-term review of the cohesion policy, to contribute to the affordable energy action plan by providing support for the setting up of energy communities**. Furthermore, the Commission has recommended that Member States strengthen support for collective and citizen-driven energy actions, for example through increasing administrative capacities to provide technical and financial advice[190].

**Interreg** provides additional bottom-up funding opportunities under its specific objective 'Better Cooperation Governance' (ISO1), small-scale projects and small project funds. **European structural and investment funds,** namely the ERDF and its Interreg programme, the European Agricultural Fund for Rural Development, and the Just Transition Fund can further help support the development of energy communities.

In **Italy**, the **region of Emilia-Romagna** has set up two calls under the 2021-2027 ERDF regional programme, one to finance planning and establishment expenses and another to build the PV plants up to 25% of eligible expenses for RECs[191]. The first call received 141 applications, mainly from local governments and groups of municipalities, resulting in the establishment of 53 RECs and seven plants financed at the end of 2024[192].

**Only a limited number of EU Member States have effectively used EU funding to support energy communities**[193].

[188] Investments under Cohesion funds in energy communities can be tracked under the dedicated common output indicator RCO97. However, Managing Authorities may also track these investments under the broader indicator RCO22 (renewable energy capacity).
[189] C4T_WG-Energy_Public-financing-calls-energy-communities_final_.pdf.
[190] communication-mid-term-review-2025_en.pdf.
[191] Support for investments in Renewable Energy Communities - Regional Programme European Regional Development Fund - ERDF.
[192] Presentation at the 16th edition of the Citizens' Energy Forum.
[193] The LIFE ACCE project has developed a mapping of EU funding sources for energy communities, available here: https://acce.rescoop.eu/resources/eu-potential-for-cefs-opportunities-for-energy-communities-in-the-current-eu-budget.

### 4.1. FUNDING AND FINANCING OPPORTUNITIES AT THE (PRE-)DEVELOPMENT PHASE

Energy communities often **face difficulties in raising capital from community members at the pre-development stage** of a sustainable energy project[194], when a business plan needs to be developed and the project feasibility assessed, including by means of planning considerations and grid-connection options, a legal analysis, a governance analysis, an engagement strategy and a clear identification of financing options. Projects that include heating or cooling networks, and citizen-led renovations, face financial barriers in the form of low returns on investment.

Once a project reaches the development stage, the energy community needs to **navigate lengthy and complex, and at times costly**[195]**, procedures to obtain the necessary permits** (typically environmental, building and grid-connection permits) and licences (for production, sharing and supply). In the absence of having obtained the necessary permits, financing institutions may be reluctant to take on the risk of giving loans to energy communities to help them implement the project in the early developmental stages[196].

Member States can provide **support to energy communities during the (pre-)development phase of energy efficiency and renewable energy projects through dedicated funding and financing programmes**, by leveraging national and EU funds, and by working together with federations and secondary structures of energy communities or energy agencies, where relevant.

#### 4.1.1. Technical assistance support

**Technical assistance support** has proven to be an effective instrument to help energy communities de-risk the development stage and mobilise investments for the construction phase. Technical tools for forecasting the behaviour of an energy community can help to this direction[197].

At **EU level**, the **Citizen Energy Advisory Hub** provides technical assistance support to energy communities for the development of sustainable energy projects, including capacity building support, investment and financial assistance, and legal, regulatory, organisational and outreach support. The **Energy Communities Repository**[198] and the **Rural Energy Community Advisory Hub**[199] together have provided direct technical assistance to over 50 energy communities. The LIFE Clean Energy Transition sub-programme[200] supports energy communities in different phases

[194] Coolkit, p 32.; Access to financing is one of the first and most difficult barriers mentioned in national case studies, for instance in the Netherlands as examined by Meitern (Meitern, 2022) and in Italy as examined by De Lotto et al. (De Lotto et al., 2022) in MuseGrid.

[195] Energy Communities Repository: 'In some Member States, the cost for a grid connection may change as time goes by. For instance, the project might start with an affordable connection cost, but if the community does not accept and pay for a connection offer at the feasibility stage of the project, it could be 3 or 4 times the cost when they get consent and therefore have a non-viable project.' Also, 'in order to secure a grid connection a large financial deposit is usually required.' See: RESCOOP 20-20-20 Financial Barriers and existing solutions, p 35.

[196] RESCOOP 20-20-20 Financial Barriers and existing solutions p 32 in ECR barriers and action drivers report.

[197] https://ses.jrc.ec.europa.eu/rectool.

[198] Energy Communities Repository - Homepage - European Commission.

[199] More information available here: Rural energy communities hub - European Commission.

[200] The **LIFE-CET Project Development Assistance** supports project promoters in preparing and launching investment pipelines of sustainable energy projects, i.e. energy efficiency and/or renewable energy projects. One of its target sectors is renewable energy production by energy communities and other citizen-led initiatives, clearly advancing beyond business-as-usual approaches.

of development, including maturing investment projects to effectively leverage private capital for innovative projects through project-development assistance. The ELENA Facility provides advisory services to develop energy efficient projects[201].

Furthermore, Member States have the opportunity to mobilise technical assistance through cohesion programmes. The **Cohesion for Transition**[202] initiative and the **Just Transition Platform**[203] provide targeted technical assistance to public authorities, supporting the development of project pipelines, including energy community schemes, to enhance access to cohesion funding.

### 4.1.2. Direct grant support

**Direct grant support**[204] can be an effective means to help bridge the gap between the project idea and the launch of community investment to make it a reality.

In **Ireland**, the Sustainable Energy Community Programme provides grant support to cover up to 100% of the cost of hiring an external consultant to help develop an energy master plan[205]. In **Germany**, the federal government has recently set up a funding programme to help cover the high costs in the development phase of wind turbines, in particular the costs associated with preliminary planning (feasibility studies, location analysis, etc.), an expert opinion to design the development plan, and legal and tax advisory services; there is a maximum funding limit of EUR 300 000 per project. In **Czechia**, the Ministry of the Environment has provided grant support totalling CZK 98.7 million covering part of the project-development costs for 55 community energy projects[206]. In **Spain**, the Recovery and Resilience Plan includes measures to strengthen the support system for stakeholders interested in the planning, creation, and development of energy communities. This includes support for pilot projects, and offices responsible for dissemination, advisory, and assistance tasks related to energy communities[207]. **Poland**'s Recovery and Resilience Plan includes a pre-investment programme for 162 renewable energy communities, which consists in grant support for developing a legal and organisational format, business models, and relevant analyses and documentation[208]. In **Czechia**, as part of the Recovery and Resilience Plan, technical support is provided to 4890 projects, including for project preparation of energy communities[209]. At **EU level**, the **Energy Communities Facility**[210] provides up to EUR 45 000 in grant support to help energy communities procure external services or employ full-time employees to develop business plans. The first call under the Facility has received 690 applications; they have come from most eligible countries. The next call will take place in May 2026.

[201] This instrument has had limited uptake by energy communities due to the high investment leverage factor (ELENA).
[202] Inforegio - Cohesion for Transitions (C4T).
[203] Inforegio - Just Transition Fund.
[204] CARES in Scotland: grants to support feasibility studies for projects. This type of support has been replicated in Netherlands, Germany, Denmark and Ireland.
[205] Sustainable Energy Communities Handbook.pdf.
[206] MŽP poskytlo 100 milionů na podporu komunitní energetiky, vznikla Platforma pro zakládání energetic….
[207] Presentación de PowerPoint.
[208] Poland's recovery and resilience plan - Reforms and Investments.
[209] Czechia's recovery and resilience plan - Reforms and Investments.
[210] https://energycommunitiesfacility.eu/.

#### 4.1.3. Revolving funds

**A revolving fund, combined with loan-to-grant products**, can fit well with the long development timelines of projects and can offer an effective way to reduce risk in the development phase of projects, while ensuring the support provided remains financially sustainable and cost effective.[150]

In **the Netherlands**, Energie Samen, a federation of energy communities, together with the Ministry of Economic Affairs, InvestNL and the Green Fund, has set up a development fund for specific types of energy community (energy cooperatives) based on a loan-to-grant model (i.e. when the project is completed, the interest-free loan is paid back, otherwise the loan is converted into a grant)[211]. Depending on the project stage, interest-free loans of between EUR 10 000 and EUR 30 000 are available (to cover up to 80% of development costs for wind and solar projects) for feasibility studies, project management, permit applications and other preparatory activities. When financial closure for the project has been reached, the energy community pays back the interest-free loan it received, together with a levy to allow the development fund to replenish itself.

### 4.2. FINANCING AND FUNDING OPPORTUNITIES DURING THE CONSTRUCTION PHASE

Once the necessary permits are obtained, **the energy community needs access to equity and debt financing to construct their projects.** The access to financing becomes especially important for more CapEx-intensive projects such as wind turbines or district heating systems. It is important to note, that DHC in particular requires a high upfront investment. **Equity and bank financing for the construction of projects is often difficult to access** when there is a lack of revenue certainty, the business model is focused on self-sufficiency, and the community energy project is on a smaller scale.

**Various approaches can be taken to address the financing needs of community energy projects at the construction phase.**

#### 4.2.1. Direct investment support

**Direct investment support in the form of grants** is already provided or is being planned in several Member States, several of which finance these activities by leveraging EU funds.

In **Spain**, subsidy opportunities are offered for up to 60% of the cost of community energy projects in the fields of renewable electrical and thermal energy, energy efficiency and/or electromobility[212]. In **Ireland**, the Community Energy Grant provides funding for improvements to buildings and facilities in terms of their energy efficiency and sustainability of

[211] Ontwikkelfonds voor energiecoöperaties | Nationaal Groenfonds. The national Green Fund provides loans from the development fund to Energie Samen, which manages the fund in collaboration with regional secondary structures of energy communities and project agencies. When financial closure for the project has been reached, the energy community funds the money they received in additional to a premium to allow the development fund to replenish itself.

[212] https://www.idae.es/ayudas-y-financiacion/comunidades-energeticas/programa-de-incentivos-proyectos-piloto-singulares-de.

energy use[213]. **Poland**'s Recovery and Resilience Plan includes a EUR 287 million direct investment support measure for energy communities, which consists in financing for renewable energy installations generating electricity, as well as associated infrastructure[214].

#### 4.2.2. Loan instruments

The Commission recommends that Member States **ensure low-cost loans are accessible for energy communities** for the construction of energy efficiency and renewable energy projects, in cooperation with federations or secondary structures of energy communities or energy agencies, where relevant.

Access to **public loans and guarantees** can be an effective means to help finance the construction phase, providing a bridge to the phase in which projects generate returns.

In **Denmark**, municipally owned companies or companies with a loan guarantee from the municipality can turn to the municipality bank (KommuneKredit), where the active energy community can give a loan guarantee to the developing energy community. KommuneKredit is a municipal association in which municipalities are liable to each other, therefore, allowing energy communities to borrow at a low interest rate. KommuneKredit offers construction credit loans (with a variable interest rate based on the risk of the construction stage)[215]. In the **Netherlands**, in 2009, Thermo Bello energy communities received a 100% loan, municipally guaranteed, from Culemborg, when it bought assets to establish a cooperative DH company[216].

Another alternative is to facilitate access to **private loans based on public guarantees** to help overcome this barrier in the short to medium term[217]. **Ethical banks can also channel private loans through a dedicated fund**.

In **Spain**, several energy communities have benefited from related financing for investments in (in)tangible assets[218]. In the **Netherlands**, the Realisatiefonds is a loan fund set up by private banks, a housing fund and the federation of energy cooperatives in the Netherlands (Energie Samen); the fund is dedicated to making available and accessible business loans up to EUR 1 000 000 to cover up to 75% of the costs incurred by specific types of energy community (energy cooperatives)[219].

At **EU level**, under InvestEU, the sustainability, social entrepreneurship, microfinance and SME competitiveness guarantee schemes provide the possibility for financial intermediaries to develop bank products for the construction of smaller-scale projects developed by energy communities.

[213] Community energy grant overview Community Grant Overview | SEAI; Ireland's National Energy and Climate Plan 2021-2030, page 133, available at: Ireland's National Energy and Climate Plan 2021-2030.
[214] Poland's recovery and resilience plan - Reforms and Investments.
[215] KommuneKredit | KommuneKredit.
[216] Barriers and drivers report.
[217] For example, the Sustainable Energy Community Programme in Ireland provides grants for the development of projects.
[218] Source: European Investment Fund.
[219] Realisatiefonds voor energiecoöperaties - Energie Samen.

### 4.2.3. Equity funds

**Equity funds can help energy communities to raise sufficient equity**. Public bodies, private banks and existing funds can take part in the launch and operation of such equity funds for community energy projects.

In **France**, EnRciT is an equity fund dedicated to investing in the implementation of citizen projects. The fund was founded by a joint investment of EUR 10 million by a public fund, an ethical bank and a pension fund. Today the federation of energy cooperatives in France (Energie Partagée) manages the fund[220].

## 4.3. OPERATIONAL SUPPORT SCHEMES

Once a project is operational, energy communities often rely on financial incentives[221], in particular operational support to secure their projects' economic viability[222].Feed-in tariffs or premiums have proven to be an especially effective means to accelerate the creation of energy communities. For example, in **Denmark**, **Germany** and the **Netherlands**, feed-in tariffs or premiums have contributed significantly to the emergence of community energy projects[223].

**Article 4(3) and (4) of the RED** require Member States to design support schemes for electricity from renewable sources in such a way that renewable energy producers respond to market price signals. Support can be granted in the form of a market premium that can be sliding or fixed. Member States can exempt small-scale installations from this requirement and thus, in principle, continue to apply static feed-in tariffs for small projects (up to 6 MW, and up to 18 MW for wind under current State aid rules). **Article 22(7) of the RED** requires Member States to consider the specificities of RECs when designing support schemes, to allow them to compete for support on an equal footing with other market participants.

Energy communities often struggle to compete with more commercial energy companies in competitive tenders for subsidies. Incorporating social criteria in these tenders can recognise and incentivise the realisation of the social potential by energy communities[224].

**Commission Recommendation (EU) 2024/2650 of 13 May 2024 on auction design for renewable energy** recommends that Member States consider, when using auctions to allocate aid

[220] https://enrcit.fr/; *Boyeldieu, A. (2023). Renewable Energy Source Project Development Guide (Version 1). ACCE – Access to Capital for Community Energy, RESCOOP EU ASBL. https://acce.rescoop.eu/uploads/rescoop/downloads/RES-Development-Guide-v1.docx.pdf[]*.

[221] For example, reduced network tariffs, tax exemptions or direct subsidies.

[222] MuseGrid, p. 5. 'Wierling et al. link the popularity of energy communities to financial support, guarantees, and funding opportunities. The large rise, but afterwards sharp decline in energy community projects in Denmark illustrates this trend.' See also favourable feed-in tariffs and participatory bonuses in France leading to 240 energy communities in 2019 (Sebi and Vernay, 2020) in 'The grid access of energy communities a comparison of power grid governance in France and Germany', A. Wainer *,1, D. Petrovics, N. van der Grijp. The authors also raise the point that as for RES technology, social innovation involving citizen participation may also need public support to become cost-efficient.

[223] Energy communities in Europe: a review of the Danish and German experiences - ScienceDirect.; Subsidieregeling Coöperatieve Energieopwekking (SCE) aanvragen| RVO.nl.

[224] ECR barriers and action drivers report.

to projects developed by RECs, to grant them flexibility on an objective basis regarding pre-qualification requirements and recalls that they may consider separate adapted auction envelopes for this type of project.

**The State Aid Guidelines for the clean industrial deal (C/2025/7600) further allow RECs and CECs that operate small projects to benefit from eased participation requirements or exemptions from auctions**. Such special treatment may include an exemption from auctions in order to ensure accessibility of operational support for energy communities[225].

In **Germany,** citizen energy companies are exempted from the tendering process to apply for subsidies and fixed feed-in tariffs. If it fulfils certain criteria[226], the citizen energy company can receive a guaranteed feed-in tariff for the electricity it generates without going through the tendering process[227]. In **Ireland**, the Small-Scale Renewable Electricity Generation Support Scheme was launched in 2023 as a non-competitive support mechanism in the form of a guaranteed feed-in premium for small-scale projects (from 50 kW up to 6 MW) developed by communities, farmers and SMEs[228]. In **Italy**, RECs are eligible for specific support schemes for shared electricity. Generation facilities of less than 1 MW owned by RECs can access support directly without having to participate in tenders[229]. In **Luxembourg**, community-driven solar PV projects that take the form of a cooperative or civil enterprises composed of at least seven members (i.e. natural persons, non-profit associations or foundations) can benefit from an increased direct feed-in tariff[230].

[225] 'A shift to competitive bidding as a precondition to access renewables support schemes in Germany placed a significant barrier on the further development of community renewables production, to the extent that their overall share of production continues to decrease.' - Holstenkamp, L. (2021). Community energy in Germany: from technology pioneers to professionalisation under uncertainty. In: Coenen F. H., Hoppe T. Renewable Energy Communities and the Low Carbon Energy Transition in Europe. Cham: Palgrave Macmillan. p. 119-152 in ECR barriers and action drivers report. See also: Arnould, J. and D. Quiroz (2022, September), Energy communities in the EU: Opportunities and barriers to financing, Amsterdam, The Netherlands: Profundo, p. 25.

[226] This includes criteria such as the amount of the tariff being equivalent to the highest successful bid of the respective segment in the previous year. This includes wind turbines on land owned by citizen energy companies with an installed capacity of up to and including 18 MW, if the Federal Network Agency has been informed that the onshore wind turbines are installations of a citizen energy company, this notification has been received by the Federal Network Agency no later than three weeks after the approval has been granted in accordance with the Federal Emission Control Act and the registration number is stated in the notification, and the citizen energy company and its voting members or shareholders, who are legal entities governed by private law, and the companies affiliated with them have not put any further onshore wind turbines into operation in the previous three years. All solar systems with an installed capacity of up to and including 1 MW and solar systems owned by citizen energy companies with an installed capacity of up to and including 6 MW are also exempt from competitive bidding, if the solar installations have been notified to the Federal Network Agency no later than three weeks after commissioning stating the registration number, and the citizen energy company and its voting members or shareholders, who are legal entities governed by private law, and the companies affiliated with them have not commissioned any other solar plants of the same segment in the previous three years.

[227] § 23b of the EEG; § 48 of the EEG. EC Facility – Country fiche Germany.

[228] Small-scale Renewable Energy Support Scheme – Solar Now.

[229] Article 5 of the DL 199/2021; Article 6 of the DL 199/2021.

[230] Photovoltaics: Participation in an energy cooperative.

### 4.4. COMBINING INVESTMENT AND OPERATIONAL SUPPORT

In line with the Guidelines on State aid for climate, environmental protection and energy[231], **an interrelated approach between investment and operational support is crucial to avoid double funding and ensure total support does not exceed the funding gap, i.e. the minimum amount necessary to make the project viable.**

In **Luxembourg**, the Klimabonus Wunnen provides subsidies of up to 50% of actual costs for solar PV systems operated for the purpose of self-consumption or energy sharing within energy communities. Energy communities installing PV systems are offered two options: (1) a 20% investment subsidy combined with eligibility for guaranteed feed-in tariff, or (2) a 50% investment subsidy that excludes access to the feed-in tariff[232].

Access to operational support may also help to unlock access to debt financing due to increased predictability of recovering the loan amount by lenders[233].

## 5. AWARENESS RAISING AND CAPACITY BUILDING

This chapter provides an in-depth overview of the challenges involved in raising awareness of energy communities among different stakeholders and outlines how to raise awareness through active communication. It provides details on capacity building for energy communities and local authorities and elaborates the concept of one-stop shops and how they have been applied in different Member States.

As stated in previous chapters, clear definitions, an effective enabling and supportive framework and access to funding and financing instruments are necessary to support the emergence of energy communities. Energy communities and stakeholders participating in them need certain capacities, such as technical knowledge of the energy market and infrastructure, knowledge of how to establish a legal entity, develop and manage a project and navigate administrative procedures, and how to become licensed to perform various activities. Because energy communities frequently rely on volunteer work, they often lack this technical and economic expertise. If volunteers or part-time employees cannot bear this burden, expertise in legal, financial or technical matters should be purchased from outside or obtained through technical assistance from specialised programmes. This imposes additional financial burdens.

The challenges faced by different parties to join and actively engage in energy communities are varied; the common challenge of a lack of understanding of the concept of energy communities occurs across different actors, however. **Citizens** may lack information on their rights in the energy system.

[231] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOC_2022_080_R_0001.

[232] Klimabonus 'Wunnen' et 'Mobilitéit': ce qui change à partir du 1er octobre 2024 - Le gouvernement luxembourgeois.; Klimabonus 'Wunnen': ce qui change à partir du 1er octobre 2024 - Wunnen Luxembourg. See also Energy Community Facility – Country fiche Luxembourg.

[233] Tisdale, M, Grau, T and Neuhoff, K (2014). 'Impact of Renewable Energy Act Reform on Wind Project Finance', Deutsche Institut für Wirtschaftsforschung (DIW Berlin), Discussion Papers 1387, p 12 in ECR barriers and action drivers report.

Similarly, and despite having emerged as pioneers in the energy transition, **local authorities** may be constrained by external barriers such as regulatory complexity and competing priorities, or internal factors such as limited resources or expertise. Municipalities therefore often lack the means to assist community-driven energy initiatives. As a result, many local authorities struggle to develop the infrastructure, capacities and supportive frameworks required for robust community energy ecosystems.

Energy communities can be a means for **private actors** such as **small and medium enterprises and farmers** to lower their energy costs and emissions. Private actors can often bring larger, complementary and predictable consumption profiles to build sustainable business models, as well as key resources (such as rooftop space or land on which to site projects, and financial and technical means). Similarly, **banks and other financial intermediaries** can become part of energy communities and play an important role in scaling up projects. However, a lack of awareness of the concept of energy communities and their potential and the frequent reliance on community volunteers makes them appear an unsafe investment to some. **Public bodies** such as public utility companies (such as heating companies) or universities[234] may also be key allies in setting up more complex projects (such as district heating systems).

**The full potential of energy communities to mobilise citizens and local actors has yet to be unlocked**[235]. A recent Eurobarometer survey[236] shows that overall willingness to join a REC remains limited, as only 23% of EU respondents said they had joined or considered joining a REC, despite 80% being aware of the concept. A recent policy paper from the Smart Cities Marketplace reports that 44 municipalities across 8 EU Member States had expressed a general interest in the subject of energy communities, but that only 8% had a precise understanding of the concept[237].

**Raising awareness, ensuring a common understanding of the concept and providing technical assistance and advisory services through one-stop-shop (OSS) structures or similar mechanisms can be an effective way to unlock this potential.**

### 5.1. AWARENESS RAISING

**Dedicated communication and outreach activities promoting the concept of energy communities** can help it to become more mainstream and help gain the trust of private actors and financial intermediaries. Moreover, **tailored information and guidance targeting a wide range of potential shareholders or members of energy communities,** including youth, communities, farmers, SMEs, social economy actors and municipalities, the number of energy communities can be increased significantly.

In addition to empowering citizens, energy communities can be a means for public authorities, SMEs, social organisations and farmers to lower their energy costs and achieve net-zero energy buildings. Since SMEs, farmers and local authorities can bring larger, complementary and

[234] Success story: Students invest in the first university energy cooperative in Denmark - REScoop.
[235] ENTEC study on the potential of citizen energy in the electricity sector (forthcoming).
[236] European's attitudes towards energy policies - September 2024 - - Eurobarometer survey, p. 10.
[237] New Policy Paper Release: 'Looking at Energy Communities through a Local Authority Lens' - Citizen-led renovation.

predictable consumption profiles and key resources (such as rooftop space or land to site projects, financial and technical means and natural resources), they can in turn help make the business model of an energy community more sustainable. This can then help in acquiring financing from banks or through crowdsourcing investment. There are examples of this in **Greece, Germany and Croatia**[238].

**Various practices to increase awareness already exist in various Member States.**

In **Belgium (Brussels)**, the NRA has developed guidance on each of the definitions of an energy community, with the aim of helping stakeholders to understand how to comply with and register the concepts. The NRA website also explains the applicable rules and procedures[239]. In **Austria**, the Austrian Coordination Office for Energy Communities offers information on types of energy community, how to set up projects, where to find existing energy communities, available funding opportunities and template contracts and agreements, etc[240]. In **Portugal**, the national Energy Agency and the Directorate-General for Energy and Geology have created a range of practical guides and resources for energy communities. These materials include step-by-step instructions, explanations of the regulatory environment and best-practice examples to make it easier for people and organisations to understand the procedures and requirements for setting up and running different types of energy community[241]. The Ministry of Climate in **Estonia** has established a working group at national level to raise awareness of the topic among key stakeholders. Bringing together the Estonian Association of Cities and Municipalities, research institutions and NGOs in 'community energy round tables' has supported the development of the sector. In **Romania**, central and local public authorities are responsible for organising information programmes regarding support measures for renewable energy produced by energy communities. The national regulator, ANRE, is responsible for organising – with the participation of local public authorities – information, orientation and training programmes to inform citizens about their rights, the potential advantages of and practical aspects of the development and use of renewable energy within energy communities[242].

### 5.2. PROVIDING CAPACITY-BUILDING SUPPORT FOR ENERGY COMMUNITIES

**Capacity-building support for energy communities is crucial to ensure their independence and resilience**. Such support is often provided by public entities, energy agencies and civil society organisations and can either be integrated into a single or several OSS structures or similar capacity-building mechanisms. These can be set up at national or local level.

**OSSs or similar mechanisms** can facilitate access to information, guidance and assistance to help set up, plan, develop and operate sustainable energy projects (including legal advice, licence

[238] Barriers and drivers report, p. 35.
[239] Brugel (2023). Guide d'interprétation relatif aux autorisations délivrées aux communatés d'énergie. Available at: https://energysharing.brugel.brussels/energysharing/communautes-d-energie-406.
[240] See Austrian Coordination Office for Energy Communities. Available at: https://energiegemeinschaften.gv.at/.
[241] See Agência para a Energy, or Energy Agency (ADENE) and Direção-Geral de Energia e Geologia (DGEG) (2022). Autoconsumo e Comunidade de Energia Renovável – Manual Digital. Available at: Manual-Digital-Autoconsumo-e-Comunidade-de-Energia-Renovavel-Guia-Legislativo_vs2.pdf.
[242] Article 18(1), (2), (5) and (6) of Emergency Ordinance No 163/2022.

applications, finance advice, technical assistance for planning and implementation, advice on building renovations, energy efficiency measures, business plan development, etc.)[243,244].

**Directive EU/2023/1791,** the **EED**, introduces and similar mechanisms to provide technical, administrative and financial advice and assistance on energy efficiency at national level. Similarly, **Directive EU/2024/1275**, **the EPBD**, asks Member States to put in place capacity-building initiatives for citizen-led initiatives and energy communities, in order to promote the objectives of the EPBD[245].

**Article 18(6) of the RED** requires Member States, with relevant local and regional authorities, to implement initiatives focused on **information dissemination, awareness raising, guidance and training**. These initiatives are intended to educate consumers on how to engage proactively in the energy market, offering practical insights and comprehensive guidance – both technical and financial – on developing renewable energy projects, including through self-consumption and RECs.

When setting up OSSs or similar mechanisms in line with EU legislation at national level, Member States can either integrate services for energy communities in said OSS or set up dedicated mechanisms. In any case, such services for energy communities are most effective when **integrated in existing OSS for community-led energy efficiency, building renovation and renewable energy projects** to ensure uniformity and the streamlining of information whilst accounting for their diversity.

The Commission has set up the **Citizen Energy Advisory Hub**[246] – a European OSS for citizen energy, focusing on operationalising energy efficiency, flexibility and renewable energy services carried out by citizen energy initiatives, including energy communities. The **LIFE Clean Energy Transition sub-programme** has provided over EUR 40 million of funding to establish local and regional support services helping more than 500 energy communities across the EU. The Energy Communities Repository has developed a useful guide to set up energy community OSSs[247]. The EU Rural Pact has helped disseminate information and good practices on energy communities to more than 3 600 members of the rural community.[248]

### 5.2.1. Scale

**OSSs that target energy communities can be established at the national, regional and local level**, depending on the constitutional structure and administrative set-up in Member States. Some Member States, such as **Italy** and **Spain**, have coordinated the national roll-out of local OSSs, while others have let them grow organically, or put in place a dedicated OSS structure at national level. OSS structures may be operated by regional agencies such as the Upper Austria energy

[243] D8.7_AdvancingRenewableEnergyCommunitiesEurope_EN_web.pdf (come-res.eu), p. 10.
[244] Pandelieva-Dimova (2021). Review of existing OSS Structures, Strategies, Tools, Policies and Projects – D2.1 – UPSTAIRS Project, p 14.
[245] Article 29(3) of the EPBD.
[246] Citizens Energy Advisory Hub - Citizen Energy Advisory Hub.
[247] DG Energy Documents - Library.
[248] EU Rural Pact.

agency or be standalone like in Osuna in **Spain.** Local examples of OSS structures can be found for example in Cork, **Ireland,** Barcelona in **Spain**, or in Asenovgrad in **Bulgaria**[249].

### 5.2.2. Actors involved

OSS services are sometimes delivered by public bodies and agencies and sometimes by civil society organisations and networks. They often cover community projects concerned with renewables, energy efficiency renovations and heating and cooling. Synergies can therefore exist between energy community OSSs and those linked to renovation (under the EPBD and EED) and OSSs providing advice and support to vulnerable consumers (under the EED).

**National, regional and local authorities and agencies** are well suited to the task of developing services to support energy communities in establishing themselves and embarking on project development. Member States can choose to put in place a **multi-level governance system**, involving national government bodies, energy agencies and local municipalities.

The Austrian Coordination Office for Energy Communities[250], a joint federal and state programme in **Austria**, was designed to boost independent public support for energy communities. It delivers and coordinates on-site advice through established energy agencies and institutes. The Office offers information, guidance and financial support to individuals and groups interested in starting energy communities, while working closely with municipalities and energy and technology providers to encourage collaboration and sustainable energy projects. Energy agencies act as key intermediaries, providing expertise in legal, technical and financial matters, assisting with project development and funding applications, and monitoring community progress to inform policy and share best practices.

In **Czechia**, three regional OSSs for energy communities and energy efficiency renovations are part of a reform under the Recovery and Resilience Plan and provide households, enterprises, and the public sector with technical support, legislative guidance, and assistance in accessing early-on finance to set up energy communities[251]. In **Cyprus**, as part of a reform under the Recovery and Resilience Plan, a single contact point for the participation of citizens in the electricity market is providing guidance and facilitation for interested parties during the entire administrative procedure that is needed for the creation and participation in energy communities[252].

**Secondary structures and federations of energy communities, and more mature, standalone energy communities, can also take on the role of an OSS**. Standalone 'mature' energy communities can play an important role in facilitating **citizen-led renovations** by taking on the role of OSS to structure their offer of services to their members. Under the EU's **Citizen-led Renovation initiative**[253], 10 organisations across eight European countries, including some

[249] The OSS creation was supported by the UP-STAIRS project, funded by Horizon Europe 2020.
[250] Austria also established a federal Coordination Office for Energy Communities (COEC) in summer 2021. Together with the public advisory institutions in the federal states, the COEC ensures that ECs can be easily set up and actively operate in energy markets. The COEC oversees and supports their development, reinforced by coordination hubs at federal state level.
[251] Czechia's recovery and resilience plan - Reforms and Investments.
[252] Cyprus' recovery and resilience plan - Reforms and Investments.
[253] https://citizen-led-renovation.ec.europa.eu/.

federations of energy communities and energy communities acting as an OSS have strengthened their organisational capacity, structure and expanded their service offer to communities, and developed viable business models for collective citizen-led renovation[254].

Examples of OSSs can be found at Member State level[255].

In **Ireland**, EcoVision provides OSS services to homeowners, businesses and community organisations, including providing access to grant support from the Sustainable Energy Authority of Ireland, sourcing contractors and overseeing the administration of energy upgrades and retrofits. Local communities can become a member of EcoVision. In **Belgium**, Energent is both an OSS for renovation services and a renewable energy cooperative with over 2 400 members. Energent has already organised 11 neighbourhood renovation projects, ensuring a hassle-free experience for homeowners in refurbishing their homes. It currently focuses on providing comprehensive support to residents throughout the renovation process, from start to finish.

**Federations or secondary structures of energy communities can facilitate an exchange of knowledge and best practices and internalise technical assistance services**, reducing dependency on public support. Local and regional energy agencies are important catalysts in this process.

In **Spain,** Osona Energía, a secondary cooperative (a cooperative of cooperatives), was founded in 2022 to support and empower local energy communities across Catalonia; it started with the Osona region and expanded to include cooperatives from multiple surrounding areas[256]. Its core role is to aggregate smaller energy cooperatives, enabling them to pool resources, share expertise and access professionalised administrative, technical and financial support services that would otherwise be out of reach for individual communities[257].

### 5.2.3. Service design

The **service design** of OSS structures or similar mechanisms ranges from those that mainly provide advice and information and those that offer some assistance during the project planning phase, to those that include hands-on support for technical implementation and operation. The presence of OSSs can be physical, online or hybrid, and their services are tailored to the maturity level of the energy communities they support – whether helping new groups get started or assisting established communities to scale up their activities.

[254] This may include bundling projects to create collective purchasing groups, organising self-renovation training, assisting in contractor selection, facilitating access to financing and subsidies and coordinating project implementation. By anchoring renovation dynamics in trusted local networks, enablers will accelerate the emergence of a citizen-led renovation market and act as multipliers across Europe.

[255] See One-stop shops | Energy Communities Facility.

[256] Osona Energia Cooperativa. (n.d.).*Qui som* [About us]. Retrieved 3 June 2025, from https://www.oecoop.coop/qui-som.

[257] Osona Energia Cooperativa. (n.d.).*Serveis* [Services]. Retrieved 3 June 2025, from https://www.oecoop.coop/serveis.

**Key features** that OSSs can include to provide an integrated service across the value chain covering all necessary knowledge and expertise while allowing for efficient support services are as follows:

- a map to identify and a network to link different energy communities;
- trusted advisors and experts that perform feasibility checks and provide technical, financial and legal advice;
- information on suitable land and available grid capacity[258];
- guidance documents on business plan development, technologies, stakeholder engagement, community building and organisation, financing, and production and grid connections;
- model contracts and agreements for co-development, PPAs, energy sharing, fiduciary rights, and maintenance and operation of installations[259];
- awareness raising and capacity-building support for key stakeholders such as local authorities;
- dedicated funding mechanisms to finance project development and/or construction; and
- a channel of communication with legislators, regulators and system operators to make administrative procedures more efficient, faster and transparent.

In **Spain**, community transformation offices (OTCs) are specialised support structures established under the national recovery, transformation and resilience plan to facilitate the creation, development and consolidation of energy communities and citizen-led energy initiatives[260]. Launched in 2022 with a budget allocation of EUR 20 million euro from NextGeneration EU funds, OTCs act as OSSs that provide information, technical and legal assistance, capacity building and guidance on funding and permitting for citizens, local authorities and SMEs interested in participating in energy communities. These offices received funding for two years and play a crucial role in overcoming common barriers such as lack of technical expertise, legal uncertainty and problems accessing finance.

### 5.3. PROVIDING CAPACITY-BUILDING SUPPORT FOR LOCAL AUTHORITIES

**Local authorities can be both actively involved in an energy community and operate as an actor helping to overcome barriers politically, financially and administratively**[261]. They can interact with energy communities as co-owners, clients or partners.

[258] For example, Mapa solarnog potencijala (solarnamapa.hr).
[259] See for example: handreiking samenwerkingsovereenkomsten.pdf.
[260] https://planderecuperacion.gob.es/.
[261] Barriers and drivers report.

In Member States that have witnessed a recent boom in energy communities, municipalities are often a driving force in setting up or helping to set up energy communities. This trend can be observed in Italy[262], Greece[263], Germany[264], the Netherlands and France[265].

The **City of Strasbourg in France** has invested in the citizen-led cooperative (*société par actions simplifiée*) Energies Citoyennes de l'Eurométropole de Strasbourg (EnCES), known as 'Les Brasseurs d'Énergie' to accelerate the local energy transition by developing renewable energy projects, primarily solar installations. The **City of Lisbon** has adopted an ambitious solar strategy aimed at maximising the city's renewable energy potential while promoting democratic access to energy production. The strategy includes the deployment of photovoltaic systems for self-consumption in social housing, schools and hospitals, the establishment and support of municipal energy communities and producer cooperatives, and efforts to create a more enabling framework for collective self-consumption solutions[266]. The **City of Budapest** plays an active role in advancing energy communities through initiatives such as the Kazán Energy Community, which facilitates stakeholder engagement and supports citizen participation in local renewable energy projects[267].

Considering local authorities are key actors in the uptake of energy communities, supporting them to have the right knowledge and skillset to establish and support energy communities is important to help drive the development of energy communities.

**Article 22(4)(h) of the RED** requires that Member States provide regulatory and capacity-building support to public authorities in enabling and setting up RECs and helping authorities to participate directly.

Local authorities and SMEs are explicitly allowed to participate directly in energy communities as founders, members or co-owners, provided that the community remains open to other participants. Pursuant to **Article 2(11) of the Electricity Directive and Article 2(16) of the RED**, local authorities and small enterprises can retain effective control over a CEC. In case of a REC, decision making should be balanced with other interests, and membership should be accessible for consumers, including low-income families.

Municipal support is also a key success factor for the uptake of community-driven HC networks (see Section 2.5). Local authorities can help with the development of cohesive and efficient planning strategies, mobilising equity to improve investment attractiveness and structured and coordinated engagement with a large number of households.

[262] Monica Musolino a, Gaetano Maggio b, Erika D'Aleo a, Agatino Nicita, 'Three case studies to explore relevant features of emerging renewable energy communities in Italy' (2023) (for example, Energy City Hall, CommON Light).
[263] For example, Municipality of Megara, Mandra, Agioi Anargyroi.
[264] For example, Neustadt an der Waldnaab.
[265] For example, BioZon.
[266] Lisbon's Climate City Contract, https://netzerocities.app/resource-4423.
[267] Budapest Climate City Contract, https://netzerocities.app/resource-4650.

In the **Netherlands, Thermo Bello** received a 100% municipal guaranteed loan from Cuelmborg when it bought assets to establish a cooperative DH company in 2009[268].

**Capacity building for municipalities can aim to (i) increase awareness** of energy communities and their potential role and impact in accelerating the energy transition at the local level, for renewable energy deployment, building renovations and DHC networks[269]; **and (ii) provide wider technical support measures** such as training initiatives, guides and communication campaigns, or even assign dedicated staff to engage with citizen initiatives.

**EU programmes have produced a variety of guidance documents that can support Member States**, including the Community Energy Municipal Guide developed by the Horizon 2020 project SCCALE 203050, which developed train the trainers modules to equip municipal stakeholders with the skills needed to kick-start community district heating projects.

The **LIFE LOOP** scheme recognises municipalities that demonstrate a commitment to advancing energy communities under a 'community energy accreditation' scheme. Participating municipalities sign a charter, take part in a training programme and become certified. The programme is free for local authorities and has been designed to minimise the time commitment required from municipal staff[270]. A total of 57 municipalities have signed the charter and 48 have completed the full process and earned their accreditation. In addition, 302 municipal actors have enrolled in the 'community energy espresso' training course, the capacity-building programme designed to enhance municipal skills. The course covers in-depth topics in six modules around financing and co-investment, communication and facilitating techniques for citizen engagement, processes to give access to municipal assets, and public procurement. The scheme will be continued under the follow-up project LIFE SHINE.

Good practices can be found across a range of Member States, covering a range of different services, initiatives and tools, such as contact points, practical guidance, training and workshops.

In **Czechia** the KOMUNERG programme will assist and guide municipalities in establishing energy communities. Capacity-building support includes technical training, legal guidance for project set-up and the use of funds[271]. In **Italy** municipalities are provided with resources, tools and workshops as part of an eight-step support pathway to help them set up RECs more easily[272]. The energy agency of **Portugal** (ADENE) has founded the ADENE Academy, in partnership with the NRA, ERSE, and the DSO, E-REDES. The academy offers specialised training sessions and workshops. These capacity-building initiatives are designed for municipalities, public institutions

[268] Barriers and drivers report.
[269] European Commission: Directorate-General for Energy, *Looking at energy communities through a local authority lens – Perceptions, experiences and needs*, Publications Office of the European Union, 2024, https://data.europa.eu/doi/10.2833/401434.
[270] LIFE LOOP - CSICY.
[271] EC Facility – Country fiche Czechia.
[272] https://www.gse.it/servizi-per-te/autoconsumo/crea-o-partecipa-a-una-cer.

and other stakeholders, equipping them with the technical, legal and administrative knowledge necessary to successfully establish and manage energy communities[273].

Furthermore, in **the Netherlands** practical support is provided through the development of municipal guidance. Citizens must be able to reach the right contact point within a local authority, who can in turn connect them to energy project initiators in the region. In **Sweden**'s work with regional and local energy planning there has been a support scheme for energy communities, directed towards regional authorities and municipalities[274]. In its NECP, **Spain** mentions its plan to establish a mechanism for promoting heating and cooling networks in the development of RECs linked to air conditioning networks, including technical training at the municipal level[275]. Furthermore, the Spanish government's institute for diversification and energy saving has published a guide for the development of instruments to promote of energy communities[276]. Another example is the guide for promoting energy communities with a municipal perspective produced by the regional government of Barcelona[277]. The province of Flemish Brabant in **Belgium** has launched the LICHT Vlaams-Brabant initiative to help municipalities achieve their sustainable energy and climate action plan targets under the Covenant of Mayors. By aligning and coordinating existing and new support measures, the province has established multiple LICHT-groups across the region, providing municipalities with practical guidance on creating, managing and financing local energy communities.

### 5.4. ENCOURAGE COOPERATION BETWEEN ENERGY COMMUNITIES

#### 5.4.1. Inter-energy community cooperation

At the early stages, energy communities are often structured around investments in solar PV installations for the purpose of sharing or collectively self-consuming energy, with individuals, municipalities and OSSs as driving forces. Emerging energy communities need to go through the process of gradually professionalising in terms of services, project portfolio and scale, and intercommunity cooperation. The more mature forms of energy cooperatives, many of which predate the Clean Energy Package, have achieved high levels of professionalisation and independence. **EW Schönau in Germany**, for example, engages in wind and solar PV development, operates a distribution grid and supplies electricity and gas to its members or customers, which are spread nationwide[278].

**To help accelerate the process of professionalisation, energy communities are cooperating within and across borders** to pool investments, deliver market services and provide OSS services to other energy communities. They invest in a wide variety of technologies, including more CapEx-intensive ones, such as biogas anaerobic digestion installations and onshore and offshore wind turbines, and at times also operate local heating and electricity networks. This cooperation

[273] https://poupaenergia.pt.
[274] https://www.energimyndigheten.se/utlysningar/inbjudan-att-lamna-in-projektforslag-inom-omradet-energiplanering/.
[275] Spain - Final updated NECP 2021-2030 (submitted 2024) - European Commission.
[276] https://www.idae.es/publicaciones/guia-para-el-desarrollo-de-instrumentos-de-fomento-de-comunidades-energeticas-locales.
[277] https://www.diba.cat/.
[278] 100 % Ökostrom – Klimaschutz mit Rebellenkraft | EWS Schönau.

can take the form of secondary structures of energy communities, federations or coalitions of energy communities, and European energy communities.

**Secondary structures or federations of energy communities can help deliver information, support capacity building and facilitate access to funding and financing for emerging energy communities.**

In **France,** the ecological transition agency ADEME, together with most regions and regional ADEME delegations, cofinances the national energy communities and citizen energy support network Energie Partagée, which is dedicated to citizen projects and energy communities. Energie Partagée manages an investment fund that has invested EUR 46 million in over 160 renewable energy projects. Furthermore, it coordinates regional networks that support awareness raising and capacity building on the ground[279]. In the **Netherlands** EnergieSamen, a federation of energy cooperatives, works together with secondary structures at regional level to provide OSS services to energy communities to develop projects and access to dedicated funding and financing opportunities[280].

**Cooperation between more professionalised energy communities and emerging energy communities can also help mutualise services, pool resources and create a pathway for growth**.

In **Belgium** SeaCoop is a secondary structure that brings together 34 local energy communities from the regions of Flanders, Brussels and Wallonia to co-invest in offshore wind. The energy supplier Onze Energie was set up to supply offshore-generated wind to the members of local energy communities[281].

At **EU level**, European cooperative enterprises such as REScoop MECISE and the Mobility Factory bring together energy communities from different EU Member States to work on energy, e-mobility and access to financing.

### 5.4.2. Cross-border cooperation

**Cross-border cooperation** acts as an enabler for setting up energy communities in border regions and fosters EU integration and solidarity. **Cross-border energy communities (CBECs)** offer numerous benefits to border regions with specific needs. Examples of these benefits are listed below.

- They provide efficiency gains and economic benefits in terms of system cost savings linking distribution systems across borders. In particular, the complementarity of border regions can reduce system costs and help integrate energy sources cost-effectively;.
- They offer new development opportunities in terms of jobs and business development in the context of the energy transition, RESs, smart grids and related value chains.

[279] EC Facility – Country fiche France.
[280] Home – Energie Samen.
[281] Homepage – Onze Energie.

- They tap into the better natural resource potential of neighbouring countries or access higher market values on the other side of the border.
- They pool knowledge and technology resources in the cross-border region, which might facilitate access to better financing conditions and lower capital costs, thus reducing overall project costs.
- They lower the barrier of entry for technologies requiring a critical mass of consumers (district heating networks, for example).

At EU level, CBECs contribute to realising the Energy Union, to building trust among communities in neighbouring Member States and to fostering EU values and a sense of European identity.

As an example of successful cross-border cooperation, at the border between **Spain** and **Portugal**, the Efiduero Energy cooperative uses a binational model (shared generation and trading in Galicia and northern Portugal) to integrate village-scale projects, foster economic and environmental benefits through efficient energy trading across the Spain-Portugal border and strengthen sociocultural ties by promoting regional integration and cooperation[282]. At the border of **France** and **Germany**, Altora PV has enabled a German and a French energy community to jointly finance solar PV installations on public roofs in the French region: the 'Zusamme Solar Colmar' project demonstrates how effective cooperation can multiply energy community projects across borders[283].

Despite these and other success stories, inadequate infrastructure for cross-border energy exchange, procedural inconsistencies, lack of coordination between neighbouring Member States and sociocultural barriers present challenges.

Setting up CBECs largely depends on building supportive enabling frameworks at national and regional level to remove legal and administrative obstacles. A starting point is the full transposition into national law of Article 22 of the RED and Article 16 of the Electricity Directive, as to where Member States may allow energy communities to be open to cross-border participation[284].

**Interreg[285]**, the key EU instrument for cooperation, can support energy communities across borders through a wide range of actions: from capacity building, community building and

[282] Handbook_on_Cross-border_Energy_Communities.pdf, p. 28.
[283] Handbook_on_Cross-border_Energy_Communities.pdf, p. 29.
[284] For renewable energy communities: Article 22, Directive (EU) 2018/2001 of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (Text with EEA relevance), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=EN. For citizen energy communities: Article 16, Directive (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast) (Text with EEA relevance), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0944.
[285] Interreg, or European territorial cooperation, is one of the two objectives of cohesion policy and aims to strengthen cooperation between EU regions and to increase European integration and cohesion. For the 2021-2027 programming period, 86 Interreg programmes are being implemented at cross-border, transnational and interregional level and in the outermost regions, with a total budget of EUR 10 billion. These cooperation programmes are implemented in shared management between the European Commission and the managing authorities in Member States or

knowledge exchange to feasibility studies and hard investments. It provides funding opportunities under Cohesion Policy Objective 2.2, Interreg Specific Objective 1 on 'Better cooperation governance' (ISO1) and bottom-up tools such as small-scale projects and small project funds, which are closer to citizens and open to new types of beneficiaries.

The Commission has recently published a **Handbook on CBECs** to provide knowledge and know-how to citizens, local actors and policymakers[286]. Furthermore, the Commission has set up dedicated calls to provide technical assistance to community energy projects across borders, namely the CBECs pilot action[287], the enlargement in the Western Balkans initiative[288] and the integration of local agri-food and retail SMEs[289]. More information can be found in Annex 1.

Despite current challenges, the growing number of Interreg-supported projects, pilot projects and other initiatives demonstrates that there is an appetite for cross-border cooperation in this field and interest in its potential benefits. These pioneering initiatives are providing valuable lessons for future development and finding creative solutions for cooperation across borders.

## 6. SOCIAL INCLUSIVENESS AND CITIZEN PARTICIPATION

The transition to renewable energy is not only a technological and economic transformation – it is also a social and generational project. **Achieving climate neutrality and the EU's energy objectives requires the active participation of citizens in all their diversity**, including young people, vulnerable consumers and people affected by energy poverty.[290]

Energy communities, by design, stand at the intersection of the social economy and the clean energy transition, **enabling citizens to take collective ownership of energy production, consumption and supply**. As democratic, not-for-profit entities that prioritise social and environmental objectives, they can act as a bridge between local participation and EU energy objectives.

**The energy transition is also a generational opportunity**. The engagement of young people, as consumers, innovators, students, researchers, entrepreneurs and community organisers, is critical for the long-term sustainability of energy communities. **Mobilising youth participation can have multiple benefits**: it strengthens intergenerational solidarity, increases digital and social innovation capacity and ensures continuity in community leadership. Education, training and participatory programmes that connect youth initiatives with energy communities can nurture a

participating countries. Managing authorities choose which projects to finance and take responsibility for day-to-day management.

[286] New Handbook Supports Cross-Border Energy Communities in the EU – European Commission. Annex: Border Fiches.

[287] border-energy-communities.eu

[288] 'Better cohesion through development of energy communities in the Western Balkans'.

[289] Call for Proposals: Agri-Food and Retail SMEs – Renewable Energy Communities – European Commission. To boost the participation of SMEs in energy communities, the Commission has launched a new call to help set up local or regional RECs by integrating agri-food and retail SMEs.

[290] Citizen Engagement in EU Collective Action Energy Projects | MDPI.

new generation of citizens who view renewable energy as both a civic responsibility and a socio-economic opportunity.

The 2024 **Young Energy Ambassadors network** sent a letter to Commissioner Jørgenson with 12 recommendations, including the recommendation to support the participation of vulnerable groups in RECs and to reserve shares in renewable energy projects for citizens[291].

Energy communities are a means of **mobilising engagement in the energy transition by vulnerable households and households affected by energy poverty**, which are most affected by high energy bills and the impacts of climate change[292]. By integrating principles of solidarity, partnership and benefit sharing, they can help make the transition socially fair, inclusive and accepted[293].

For instance, the **City of Milan** integrates energy communities into its broader climate neutrality strategy, combining extensive renewable energy deployment with initiatives designed to ensure social benefits. Through initiatives such as the Affori Niguarda Solidarity Renewable Energy Community, a share of the generated revenues supports vulnerable households, thereby combining emissions reduction with greater social equity[294].

However, most energy communities currently do not address energy-poor and vulnerable households[295], despite a willingness by some to do so[296].

Combining social economic principles, inclusive access mechanisms and participatory ownership models can ensure that energy communities act as both drivers and guarantors of social inclusiveness and citizen participation. By engaging all citizens, and particularly the next generation and the most vulnerable, they can help deliver a fair transition that leaves no one behind.

### 6.1. SUPPORT STRUCTURES TO FACILITATE THE INVOLVEMENT OF VULNERABLE HOUSEHOLDS AND HOUSEHOLDS LIVING IN ENERGY POVERTY

Socially inclusive energy communities can provide socio-economic benefits for citizens by capping or lowering energy bills for members of the community during crises, making home upgrades affordable, putting in place measures to increase gender inclusiveness or sharing surplus electricity with vulnerable households for free. Energy communities tend to focus their social

[291] Young Energy Ambassadors Recommendations – European Commission.
[292] It is important to consider socio-technical factors for energy poverty alleviation policies, see JRC Publications Repository - Energy justice from the bottom up: developing a framework to guide energy poverty policy and JRC Publications Repository - Energy justice insights from energy poverty research and innovation experiences.
[293] JRC report on social innovation: final_jrc_report_si_et_26_11.pdf, p. 12, and (ESPON TANDEM, 2025), which indicates that there is a general willingness of energy communities to become more socially inclusive.
[294] Milan Climate City Contract, https://netzerocities.app/resource-4445.
[295] Do renewable energy communities deliver energy justice? Exploring insights from 71 European cases (sciencedirectassets.com), p. 8.
[296] (ESPON TANDEM, 2025).

purpose on alleviating energy poverty, while fewer of them focus their inclusion on different demographic groups[297].

**Article 22(4)(f) of the RED** requires Member States to put in place an enabling framework to ensure that RECs are accessible to all consumers, including those in low-income or vulnerable households. In relation to the **Social Climate Fund (SCF)**, both the guidance on drafting the social climate plans[298] and the 'do no significant harm' (DNSH) SCF technical guidance[299] also identify energy communities as a potential vehicle to help reach vulnerable households and households affected by energy poverty.

**Achieving accessibility requires supportive regulatory and financial frameworks** that lower barriers to participation and reward social value, for smaller energy communities with limited resources and capacity in particular[300]. Dedicated support structures, including tailored funding, have been identified as important instruments for increasing social inclusiveness. Although such structures are important for empowering energy communities through capacity-building programmes, evidence has shown that energy communities seem to be unsuccessful in using non-financial support to attract vulnerable groups[301]. However, partnerships between local authorities, social institutions and energy communities can also help identify and engage the households most in need[302].

The **Recommendation on energy poverty**[303] outlines solutions such as financial compensation or zero-interest loans to facilitate the participation of vulnerable households and households affected by energy poverty in energy communities as well increasing communication and awareness-raising efforts among citizens. **Financing and support schemes for energy communities should, wherever possible, incentivise the inclusion of vulnerable households and households affected by energy poverty.** Policies and technical assistance can further enable inclusion through, e.g., specific support for awareness raising in vulnerable groups or by supporting cooperation with public authorities and social institutions and organisations that can facilitate cooperation with households affected by energy poverty.

Member States can design dedicated **funding programmes or subsidies** for energy communities that engage citizens or address vulnerable households and households affected by energy poverty.

[297] TANDEM Final report – Policy brief, p. 17.
[298] Guidance on the Social Climate Plans – European Commission.
[299] DNSH technical guidance to the SCF – European Commission.
[300] Energy communities addressing these groups have, on average, 500 members, while those that do not address them have fewer than 300 members. See The struggle of energy communities to enhance energy justice: insights from 113 German cases | Energy, Sustainability and Society | Full text.
[301] TANDEM Final report – Policy brief, p. 18.
[302] The PowerUp project explored different local energy market player models involving vulnerable households, some of which involved energy communities (Campania, Valencia, Eeklo) and some other forms of inclusive energy models (e.g. collective self-consumption in social housing or public RESs for energy-poor households): https://www.socialenergyplayers.eu/wp-content/uploads/2025/12/POWERUP_D5.2-December-2025.pdf.
[303] SWD (2023) 647 final.

In **Lithuania** the state provides sliding grant support and a soft loan of up to 50%[304], depending on the share (not less than 30%) of the power plant allocated to socially disadvantaged people and to municipalities and their institutions responsible for implementing the RES project that are part of an energy community. The municipality is responsible for identifying the vulnerable groups who receive social assistance, and those affected would then receive electricity from the RESs[305].

**Capacity-building support** may also be tailored to facilitate the participation of vulnerable households and households affected by energy poverty. **The Horizon 2020 SCCALE 20 30 50 project** has developed an inclusivity diversity guide for energy communities[306].

In **Italy** Legislative Decree No 210/2021 refers to vulnerable consumers, specifying that local authorities that participate in CECs should adopt initiatives to promote participation of vulnerable consumers in the community so as to enable them to access the environmental, economic and social benefits provided by the community itself. To help implement this public support, GSE, the Italian agency for energy transition, offers dedicated information services, including information guides and tools, as part of the territorial assistance it gives to municipalities.

Support may focus on **promoting and strengthening cooperation between energy communities and local actors representing public or social interests**. Local authorities can, for example, help with pre-financing shares for vulnerable community members, while local charities can help identify vulnerable households in order to better target and tailor communication and engagement activities.

The **EU solar energy strategy communication (COM/2022/221)** calls on Member States to support partnerships between local authorities, energy communities and social housing managers to facilitate collective and individual self-consumption schemes.

### 6.2. SOCIAL CRITERIA IN PUBLIC AUCTIONS FOR RENEWABLE ENERGY, SUPPORT SCHEMES AND PUBLIC PROCUREMENT OR CONCESSIONS

Citizen participation is not a given in energy communities[307]. Beyond minimum requirements for citizen participation in the legal definitions (see Section 1.4), **citizen participation in energy communities can be strengthened through public policy instruments that recognise and reward social and local benefits**, such as social criteria in public auctions for renewable energy, support schemes and public procurement or concessions for the deployment of RESs. These criteria need not be limited to energy communities alone, but can serve as a broader mechanism to ensure that public funds and incentives generate local investment, engagement and acceptance.

#### 6.2.1. Social criteria in public auctions and support schemes for renewable energy

[304] If more than 80% of all vulnerable customers in the municipality are included, the possibility of receiving a 50% subsidy applies.
[305] Presentation by the Ministry of Energy, 6.3.2025.
[306] Horizon 2020 SCCALE 20 30 50 project inclusivity diversity guide for energy communities, sccale203050.eu/wp-content/uploads/2024/01/Inclusivity-Guidebook_SCCALE203050_updated.pdf.
[307] Report on the corporate capture of energy communities.

Public tenders for financial support are often based on a compulsory price criterion that seeks the greatest value at the lowest cost. **Including social criteria in the selection process could help make the public view the energy transition positively. Furthermore, concepts with the potential to provide local benefits, such as energy communities, may tap into that potential to support, for example, the alleviation of energy poverty and vulnerable households.**

**Public and local authorities can decide to include social criteria, such as supporting energy communities**[308], in renewable energy auctions or tailored pre-qualification criteria for accessing financial support for energy communities. This is already being done by some Member States and local authorities.

With the aim of including low-income and vulnerable households, **Spain** considers the fight against energy poverty to be one of the criteria for receiving financial assistance under the CE Implementa programme[309], which is specific to REC development. In **France** the auctions for feed-in premiums consider non-price criteria[310] which are favourable to the membership structure of energy communities, such as the share of the capital of the legal entity owned by or offered to residents and authorities in proximity to the project. Wind projects with fewer than six turbines, each with an installed capacity of up to 3 MW, that are controlled by energy communities are exempted from the auction and can benefit directly from the feed-in premium. For cooling and heating networks, ADEME, the national environmental agency, applies 10% of the points for projects that involve citizens[311].

### 6.2.2. Social public procurement

EU public procurement rules[312] are relevant to energy communities, as cooperation with public authorities, through either indirect support or direct financial participation, is frequent. Public authorities and utilities can procure services, supplies or works from energy communities.

Furthermore, in order to ensure citizen participation, including by vulnerable households and households affected by energy poverty, public procurement tenders can include both **proportionate and inclusive selection criteria that allow energy communities to bid for contracts**[313] and **social award criteria** that assess tenderers' proposed mechanisms, tools and strategies to effectively engage citizens and communities in the financing and/or governance of the project. Procurement can be aligned with broader local and EU policy objectives, including mobilising community or citizen participation and providing derived benefits to local communities.

[308] Social criteria can be structured around local participation opportunities for public authorities and inhabitants in proximity to the project in their public auctions for renewable energy support.
[309] CE Implementa is an incentive programme for pilot projects of energy communities within the framework of the recovery, transformation and resilience plan. More information available at https://www.idae.es/ayudas-y-financiacion/comunidades-energeticas/programa-de-incentivos-proyectos-piloto-singulares-de.
[310] EC facility – Country fiche France.
[311] Ibid.
[312] Directives 2014/24/EU and 2014/23/EU.
[313] For example, lowering the barriers of qualification to participate in the bidding process.

**Article 10 of the the EPBD** sets a solar integration target in order to make public buildings zero-emission. **Article 11(7) EPBD** allows the total annual primary energy use of zero-emission buildings to be covered by energy from renewable sources generated nearby or provided from an REC. **Article 15a(5) of the RED** encourages local authorities to use public procurement to promote cooperation between local authorities and RECs in order to mainstream renewable energy in the building sector.

However, **legal uncertainty and complexity regarding the application and scope of national public procurement rules** have been reported by stakeholders as a barrier to the uptake of social public procurement of energy services, supply and related works[314]. In particular, it is often unclear how to design and implement social criteria in accordance with public procurement rules.

Where an energy community provides services, goods or works for a public body, it will be subject to relevant EU public procurement rules as transposed by the Member States. Unless **energy communities are controlled by public bodies, they may be excluded** from the scope of EU public procurement rules subject to the conditions outlined in Article 12(1) and (3) of Directive 2014/24/EU and Article 17(1) and (3) of Directive 2014/23/EU.

Where the EU public procurement rules are applicable, contracting authorities must **treat economic operators equally and without discrimination** and act in a transparent and proportionate manner[315]. According to the Commission's **social economy action plan**[316], contracting authorities can take different actions to help level the playing field for energy communities in public procurement, including[317]:

- making use of the **most economically advantageous tender (MEAT) approach**, which allows contracts to be awarded on the basis of a combination of price and qualitative criteria, such as social and environmental benefits[318]; and
- applying **simplified procedures** to smaller contracts, making it easier for energy communities to participate, and dividing large contracts into lots in order to better match their capacity.

Where the main aim of energy communities is to socially and professionally integrate people with disabilities or disadvantaged people, public bodies can **reserve a contract** for energy communities[319]. To benefit from the reservation, **at least 30% of the employees of the energy community must be people with disabilities or disadvantaged people**[320].

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[314] See D'Herbemont, S. and Roberts, J. (2022), *Procurement Guide for Community Energy – Based on the Municipal Guide of the H2020 COMPILE Project*. See also: Proka, A. (2023), n 50 on p. 26.

[315] See Article 18 of Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.

[316] SEAP – European Commission.

[317] Providing enough information to the market and competitors.

[318] REScoop.eu, H2020 COMPILE project (2022), *Procurement Guide for Community Energy*.

[319] Article 20 of Directive 2014/24/EU and Article 24 of Directive 2014/23/EU.

[320] For example, young people, people in long-term unemployment, people with a lower level of education, people over the age of 50, single parents, people of minority genders within sectors or professions, people of ethnic minorities, people at risk of poverty or severely deprived or vulnerable people. See the Public Procurement Directive and the Public Concession Directive.

Member States where social public procurement is more widely implemented often exhibit shared success factors. These include the adoption of procurement strategies that focus on social objectives, the setting-up of specialised support centres or networks offering guidance and expertise to contracting authorities and the setting of specific minimum targets.

By the end of 2025 **France** aims for 30% of its procurement contracts to include at least one social consideration[321], such as the involvement of citizens and local authorities in renewable energy and DHC[322]. Additional points (up to 5 points out of 100) are awarded to renewable energy projects involving local authorities and citizens. The more local actors and citizens are involved, the higher the bonus[323].

Local authorities from different EU Member States are already applying social criteria in public procurement procedures in the energy sector.

In **Belgium the municipality of Eeklo included** 30 points for the assessment of the participative mechanism of the contractor based on the opportunities for ownership offered to local citizens and the credibility of the engagement plan. For the financial criteria, a financial contribution had to be made to the inhabitants of the municipality through a dedicated fund. The municipality also included social objectives and criteria as part of its concession procedures for the purpose of developing and operating district heating networks that allow for citizen participation. The municipality benefited from an advisory board for public procurement at federal level and the procurement specialist team at the level of the Region (Flanders). In **Spain**, in the **municipality of Crevillent**, the local electricity cooperative Grupo Enercoop was involved in a public procurement process for rooftop solar installations on municipal buildings. The initial collaboration took the form of a land-use agreement for a solar installation. The city then issued a public tender for a long-term concession (of up to 75 years) to use municipal building roofs for solar PV installations. A key criterion of this tender was that the electricity produced had to be shared with the inhabitants of the city[324]. In **France Strasbourg** included social considerations in the award criteria for the installation of a solar PV plant on the city's public roofs[325]. Another example can be found in **Italy**, where the **city of Rome** has created a framework to provide a space for energy communities fighting energy vulnerability. In July 2024 Rome City Council adopted a regulation for the provision of public areas and photovoltaic solar plants in the capital to 'solidarity RECs'. These entities focus on addressing energy poverty by redistributing renewable energy benefits to vulnerable households.

[321] Climate and Resilience Act.

[322] Fond Chaleur ADEME, available at Le Fonds Chaleur – La chaleur renouvelable, c'est profitable.

[323] See EC Facility – Country fiche France. For instance, some tenders from the Energy Regulation Commission include a 'shared governance' criterion. See NEW REPORT: Community Engagement and Fair Benefit Sharing of Renewable Energy Projects – CAN Europe.

[324] El Ayuntamiento de Crevillent adjudica a Enercoop el uso de 21 espacios públicos para el despliegue de la Comunidad Energética COMPTEM – Grupo Enercoop.

[325] Eurométropole of Strasbourg (2021). Ville de Strasbourg – Appel à manifestation d'intérêts portant sur l'octroi d'une convention d'occupation du domaine public relative à la pose et l'exploitation de panneaux photovoltaïques par une communauté énergétique citoyenne sur la toiture de l'école élémentaire Louvois, Pièce 1 – Règlement de consultation (16 Juin 2021).

To further increase the uptake of social public procurement in the energy sector, and within energy communities in particular, specialised training sessions, workshops, events and guidance are needed to enhance the professionalisation of procurement officers. Additionally, an online information tool and national competence centres or specific working groups dedicated to advancing social public procurement in the energy sector can be an effective means of building capacity.

### 6.3. BENEFIT SHARING THROUGH CO-OWNERSHIP

Structural mechanisms for co-ownership and participation can further strengthen the role of citizens in renewable energy and energy efficiency projects. Member States and local authorities can set **targets for local or community co-ownership or encourage voluntary benefit-sharing** arrangements that ensure a fair distribution of the economic value generated by sustainable energy projects. Such measures not only improve social acceptance, but also foster long-term public trust in and collective commitment to the energy transition.

**Articles 15d(2)** of the RED requires Member States to promote public acceptance of renewable energy projects by means of direct and indirect participation of local communities in such projects.

When citizens perceive renewable energy projects as fair, transparent and beneficial to their community, they are more likely to support them and participate in them. Energy communities are an essential way of achieving public acceptance. Voluntary benefit-sharing measures are increasingly widespread in the EU, and in some Member States regions are going one step further by requiring some degree of local ownership in renewable energy projects under certain conditions.

In the Canary Islands[326] and the Balearic Islands[327] in **Spain**, for projects exceeding 2 MW participation, developers are required by law to demonstrate at least 20% local ownership by residents or businesses in the municipality where the renewable energy installation will be located[328].

**Co-ownership of renewable energy projects by energy communities** can be an effective way of addressing financing needs, engaging in more large-scale projects and facilitating access to innovative services and affordable energy for a larger group of citizens.

In **Ireland** cooperation by renewable energy generators with local sustainable energy communities is encouraged through a Community Benefit Fund[329]. In **Belgium** a group of 34 energy communities have set up SeaCoop as an investment vehicle to participate in offshore wind

[326] Proyecto de ley Islas Canarias: IP – Proyecto de Decreto de participación local en el desarrollo de energías renovables.
[327] Ley Islas Baleares: BOE-A-2019-5579 Ley 10/2019, de 22 de febrero, de cambio climático y transición energética.
[328] Fundeen completa la financiación del parque Santa Eulalia en Mallorca – pv magazine España.
[329] EC Facility – Country fiche Ireland.

development. SeaCoop has already bought into 10% of the capital of Aspiravi Offshore, the equivalent of five wind turbines at a production capacity of 15 MW[330].

Member States may also **consider providing co-investment opportunities in larger-scale projects on the basis of relevant social criteria** in RES auctions, permitting or public procurement procedures to allow energy communities to overcome competition with commercial developers in terms of accessing suitable areas.

**Regional and local targets** for community involvement can be observed in several Member States.

In Flanders (**Belgium**) at least 10 municipalities adopted a resolution striving for at least 50% direct citizen participation through cooperatives in all renewable energy projects on municipal land[331]. In the **Netherlands** the 2019 Climate Agreement set a target of 50% local ownership of renewable energy projects[332].

## 7. DIGITALISATION AND INNOVATION

Digital technologies and artificial intelligence are key enablers of active participation of energy communities and can significantly enhance their contribution to the energy transition[333]. By engaging in such activities, energy communities can, in turn, offer flexibility services to the grid (see Section 2.7.2). Furthermore, because they often operate on a small scale, energy communities can explore innovative services and technologies to enhance local energy markets and increase energy-system resilience[334]. Overall, there is evidence to suggest that public funding in research and development has a positive impact on the development of energy communities[335].

Horizon Europe 2020 pilot projects that have explored integrating digital tools into energy communities and providing benefits to the energy system have uncovered an array of challenges that have still to be faced. The fragmented roll-out of digital tools across Member States and the lack of access to relevant data for energy communities mean that it is not possible to fully exploit the potential of energy communities to contribute to energy-system resilience.

Article 23(1) of the Electricity Directive requires Member States to specify the rules on access to data of the final customer by eligible parties. Such data include metering and consumption data, as well as data required for switching, demand response and other services, such as energy sharing, within 24 hours. Article 24(2) of the Electricity Directive empowers the Commission to adopt

[330] Press release: Belgian energy cooperatives are today launching Our Energy: 'By participating in offshore wind turbines, we will give half a million Belgians control over energy production by 2030' – SeaCoop.
[331] REScoop procurement report, p. 23.
[332] Microsoft Word - 20190816 Klimaatakkoord - EN, p. 228.
[333] Considerations will have to be made to the potential impacts of digital technology and artificial intelligence on safety, privacy, transparency, fairness or accountability. Those risks should be identified and preventive measures developed. See: JRC Publications Repository - Energy justice for AI: a framework.
[334] Completed and ongoing Horizon Europe 2020 projects explore topics such as the integration of energy services for citizens (NEON), peer-to-peer trading between energy communities (NRG2peers), direct-current grids and microgrids (DCNextEve) and virtual power plant technology empowered by AI algorithms (FleXunity).
[335] (ESPON TANDEM, 2025).

implementing acts defining interoperability requirements and non-discriminatory and transparent procedures for access to relevant data.

The Commission has already adopted the first implementing act on data interoperability regarding access to consumption and metering data for final customers[336]. Such data may be shared with third parties when permitted by the final customer for the purpose of flexibility or energy-sharing services and without prejudice to EU law, including the GDPR[337]. Furthermore, the forthcoming common European energy data space (CEEDS) will propose to allow authorised parties, including energy communities, to access and share relevant energy-system and consumption data through secure, interoperable infrastructures. In addition, the Code of Conduct for the interoperability of ESA sets the rules for data exchange for various use cases, thus unlocking the flexibility potential of final users, playing a key role for energy communities. By relying on standardised data models and open, machine-readable interfaces, energy communities can operate within a common digital environment.

In the context of the Electricity Directive and its implementing acts on interoperability, as well as the interoperability provisions of the Data Act[338], smart metering systems have helped enable energy communities to integrate DERs, energy sharing and local flexibility platforms. This facilitates the use of digital twins, AI-based forecasting and optimisation tools to manage collective self-consumption, flexibility and storage resources in real time. Open-source solutions, shared data architectures and forecasting software tools[339] will further reduce transaction costs, stimulate innovation and ensure that smaller actors can participate on an equal footing with larger market players.

To fully harness these opportunities, Member States can create an enabling digital ecosystem for energy communities, building on EU interoperability requirements and data protection standards. Public authorities and regulators should foster the development and uptake of open-source digital platforms and standardised application programming interfaces (APIs) that support energy sharing, peer-to-peer trading, demand forecasting and flexibility services.

Cooperation between public and private actors, including through innovation partnerships, regulatory sandboxes and pilot schemes, can also accelerate the testing of AI-based and smart-grid

[336] Regulation (EU) 2023/1162 on interoperability requirements and non-discriminatory and transparent procedures for access to metering and consumption data. Furthermore, in accordance with Article 24(2) of the Electricity Directive, the Commission may adopt implementing acts on data required for customer switching and data required for demand response.

[337] The Commission has adopted an implementing act to improve access to metering and consumption data.

[338] Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act)

[339] Such tools can help in designing an energy community, by forecasting its behaviour. They can help identifying decisive parameters for optimizing the functionality of an energy community and can give a clear picture for eventual flexibility potential, for optimizing self-consumption. The European Commission has already built such a tool, which is open access and online, thus helping stakeholders in designing or improving an efficient energy community, https://ses.jrc.ec.europa.eu/rectool.

applications in real-life community settings, generating evidence for future regulatory improvements.

Ensuring trust, cybersecurity and responsible data governance will be essential to make digitalisation a driver of social innovation and allow energy communities to play an integral role in a smart, decarbonised and citizen-centred energy system.

In order to make progress towards those objectives, the EU has already provided support to facilitate the uptake of digital innovation by and for energy communities through various Horizon Europe projects. The topics explored range from smart building ecosystems[340], integration of energy services for citizens[341], peer-to-peer trading between energy communities[342], direct-current grids and microgrids[343], sector coupling and district heating networks, and virtual power plant technology empowered by AI algorithms[344]. These projects have the potential to accelerate the deployment of cutting-edge technologies and provide evidence for regulatory adaptation and market design improvements. Beyond technological and digital innovation, Horizon Europe projects also target social innovation potential, such as innovative approaches to addressing energy poverty and governance and management of RESs. In addition, the European Commission can provide further scientific support for the development of energy communities[345].

**REScoopVPP** has developed a prototype of a community-driven smart building ecosystem, based on local controller and online tools, to enable flexibility services provided by energy communities[346]. The ongoing **U2Demo** project is helping to advance open-source peer-to-peer trading and energy-sharing platforms with consumer-centred management strategies[347].

[340] The project combines front-runner energy communities to create the most advanced community-driven smart building ecosystem for energy communities. More information is available here: REScoopVPP project.

[341] NEON will exploit building energy efficiency, renewable energy generation and storage, and demand flexibility to increase energy savings, reduce $CO_2$ emissions and provide cost savings across sectors. The project will engage grid stakeholders, service providers and final consumers and work with them to put in place the cross-sectoral arrangements and underlying service concepts. More information is available here: NEON.

[342] More information is available here: https://www.nrg2peers.eu/.

[343] The primary technical research objective of the DCNextEve project is to design and analyse novel methods for the management and control of multiple building-scale DC microgrids operating on a defined territory. More information is available here: DCNextEve.

[344] The FleXunity project proposed an energy community approach which promotes active participation of end users (community members) by evaluating their flexibility and energy-sharing actions. These will be supported by secure transaction mechanisms with technologies such as blockchain to validate energy transactions. More information is available here: FleXunity.

[345] Energy communities | JRC SES

[346] Horizon Energy: REScoopVPP – Smart Building Ecosystem for Energy Communities – European Climate, Infrastructure and Environment Executive Agency.

[347] Use of open-source P2P energy-sharing platforms for energy democratization | U2Demo | Project | Fact Sheet | HORIZON | CORDIS | European Commission.

## SECTION 2: GOOD PRACTICES TO MAXIMISE THE POTENTIAL OF SELF-CONSUMPTION AND ENSURE A STANDARDISED APPROACH TO ENERGY SHARING

# 1. INTRODUCTION

## 1.1. BACKGROUND

The **Clean Energy for All Europeans package**[348], adopted in 2019, empowers active consumers to exchange seamlessly surplus energy with their neighbours or collectively invest in distributed energy technologies, forming energy communities. These communities not only promote self-sufficiency and resilience, but also create social cohesion among individuals, strengthening the fabric of society. Online peer-to-peer marketplaces, which may be blockchain-based or managed by a third party, enable consumers to make value-based choices, rewarding sustainable practices and encouraging market competition.

Self-consumption is set to play a major role in contributing to the Commission's objective of ensuring access to affordable energy, as set out in the **affordable energy action plan**[349]. Through smart appliances and automated systems, energy-consuming activities can be optimised to align with periods of high renewable energy self-generation. This not only benefits the consumers themselves by **optimising energy bills,** but also contributes to **grid stability** and the **efficient utilisation of renewable resources.**

For this to happen, **self-consumption needs to be integrated into the wider energy system and to benefit from appropriate support**.

This Section of the Staff Working Document aims to provide **background information to the European Commission Recommendation on behind-the-meter self-consumption and virtual self-consumption via energy sharing**. The first part of this section addresses the legal and policy context for the self-consumption of renewables, investigating barriers to its development and providing examples of Member States' practices on how to address them.

***The term 'self-consumption' is used to describe the general phenomenon of near-real-time consumption of renewable electricity generated on either the same or other premises by individually or jointly acting final customers, in particular households, SMEs and local authorities. Although self-consumption is possible using various technologies, the focus in this section of the SWD is mainly on electricity generated from solar PV installations***[350]***. Self-consumption can occur behind the meter or by making use of the grid. The guidance and examples of good practice are relevant to all types of self-consumption, including energy sharing or other types of self-consumption arrangement set out in national regulations.***

[348] Communication - Clean Energy for all Europeans.
[349] Affordable energy – European Commission.
[350] The SWD may in places be relevant to solar PV installations combined with storage, including thermal storage, smart heating appliances, such as heat pumps, and smart and bidirectional electric vehicle recharging that can help optimise electricity self-consumption.

### 1.2. CONTEXT FOR SELF-CONSUMPTION

From a consumer point of view, self-consumption can help **save costs in consumer energy bills** through reduced exposure to wholesale price volatility and reduced reliance on the grid[351]. It is also a means of **engaging citizens, businesses and public authorities** in the energy transition. With appropriate support mechanisms, self-consumption can also help **address energy poverty**.

From a system point of view, self-consumption has the potential to **increase affordability of supply** by providing access to cheap renewable electricity, creating **resilience against price shocks** by reducing dependence on fossil fuels and their volatile pricing and **reducing reliance on external energy sources** for meeting energy demand. When combined with storage and remote control, self-consumption rates **can be optimised to further support system efficiency and reduce network and system costs**. Furthermore, final customers can **improve the economic viability** of their flexible installations by strategically selling their self-generated electricity during periods of increased market value.

The transition to a consumer-centric energy system has accelerated during the energy crisis. Solar PV installations grew by 47% in 2022. It has been estimated that by 2022 a total cumulative small-scale PV capacity of 127 GW had been installed across Member States. An estimated 86 GW of installed capacity is being used for the purpose of self-consumption. Most of these small-scale solar installations are residential[352]. **The solar industry estimates that around 225 GW of solar PV capacity had been installed on rooftops in the EU by the end of 2024[353].**

**It is estimated that since 2021 the number of prosumers in the EU has more than doubled to 7 million[354].** During the energy crisis, extended or collective self-consumption schemes boomed across Member States. In **Czechia,** there were 5 492 groups of active customers sharing 1 059.49 MWh of electricity in 2024[355]. In **France** there were 304 collective self-consumption schemes in operation covering almost 3 700 consumers and 600 producers in 2024. The majority of the schemes are managed by local authorities, social landlords and energy communities[356].

For final customers that generate, consume and sell their own electricity, the **Clean Energy for All Europeans package** puts in place an enabling framework. Energy sharing by renewables self-consumers has been recognised in the legal framework within a multi-apartment block or an REC.

The Commission launched the **REPowerEU plan** on 18 May 2022, which proposed measures to make Europe independent of Russian fossil fuels well before 2030 through energy savings, diversification of energy supplies and an accelerated deployment of renewable energy. As part of that plan, the **Recommendation on speeding up permitting-granting procedures and**

[351] Provided that solar PV installations are combined with storage capacity.
[352] *Study on mapping of regulatory frameworks and barriers for individual and collective renewables self-consumption in EU Member States* – Publications Office of the EU, pp. 40-46.
[353] EU Market Outlook for Solar Power 2024-2028 – SolarPower Europe.
[354] Eurelectric Power Barometer: Power Barometer 2025: In shape for the future – Eurelectric – Powering people.
[355] Elektropower Data Centre, a. s.
[356] Presentation by the Ministry of Energy, France.

**facilitating power purchase agreements**[357] and the **EU solar energy strategy**[358] called on Member States to increase individual and collective self-consumption schemes, maximising solar value for EU citizens.

Most Member States have now put in place frameworks for final customers that consume, produce and sell their own electricity. The frameworks have had varying degrees of success in **increasing the uptake of small-scale solar PV** installations (with more success in some countries than in others)[359]. However, not all the electricity generated by this installed solar PV capacity is self-consumed behind the meter. A – sometimes substantial – portion of it is fed back into the grid due to mismatches between supply and demand.

The **growth of small-scale solar PV installations has started to slow down** for a variety of reasons, including the **phase-out of static operational support**[360]**, increased imbalance costs** resulting from the variable nature of renewables, **grid capacity constraints** at distribution and/or transmission system level[361] and the **declining market value of solar electricity** injected during the day. Accordingly, across Member States, there is a noticeable **shift from remunerating the feed-in of surplus generation towards schemes that seek to optimise the self-consumption of electricity**[362]. Additionally, in many Member States, self-consumers **lack the framework to share their surplus electricity with** – **or sell it to** – other final customers or to **participate in flexibility schemes**, thus limiting their options for optimising the value of self-generated renewable electricity.

Accordingly, Directive (EU) 2018/2001, as amended by **Directive (EU) 2023/2413 of the European Parliament and of the Council**[363]**,** hereafter the renewable energy directive (RED), puts increased emphasis on creating a level playing field for small, decentralised electricity generation and storage systems to participate in electricity markets, including flexibility markets, and facilitates the uptake of renewable energy technology and integration into spatial environmental planning and the grid.

The more recent reform of the electricity market design in Directive (EU) 2019/944, as amended by **Directive (EU) 2024/1711 of the European Parliament and of the Council**[364], hereafter Electricity Directive, continued in the direction taken by the EU in 2019 by reinforcing the options

[357] Guidance to Member States on good practices to speed up permit-granting procedures

[358] EUR-Lex – 52022DC0221 – EN – EUR-Lex.

[359] *Study on mapping of regulatory frameworks and barriers for individual and collective renewables self-consumption in EU Member States* – Publications Office of the EU, p. 42.

[360] Where renewables self-consumers inject surplus electricity into the grid, they have traditionally received a fixed payment over several years that does not reflect the current price of solar PV electricity.

[361] Small-scale installations are connected to distribution grids which are often not fit for large-scale integration of distribution energy resources.

[362] *Study on mapping of regulatory frameworks and barriers for individual and collective renewables self-consumption in EU Member States – Publications Office of the EU.*

[363] Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652, http://data.europa.eu/eli/dir/2023/2413/oj.

[364] Directive (EU) 2024/1711 of the European Parliament and of the Council of 13 June 2024 amending Directives (EU) 2018/2001 and (EU) 2019/944 as regards improving the Union's electricity market design, http://data.europa.eu/eli/dir/2024/1711/oj.

for active customers to self-consume off-site-generated or -stored electricity injected into the grid. The **right to energy sharing** enshrined in **Article 15a** of the Electricity Directive is ensured to active customers operational in the electricity market and is extended beyond (multi-)apartment buildings and RECs and CECs, for which it had already been recognised by **Article 21(4), Article 22(2)(b) of the RED and Article 16(3)(e) of the Electricity Directive** respectively, creating a pathway to increase the number of final customers associated with a single generation or storage facility.

The **affordable energy action plan** aims to ensure that citizens and communities have access to affordable energy, including by producing, consuming and selling their own renewable energy. Self-consumption can increase energy autonomy, conscious energy use and the accelerated deployment of renewable energy through social acceptance and by mobilising private capital.

### 1.3. CREATING AN ENABLING FRAMEWORK FOR SELF-CONSUMPTION

The following chapter outlines the existing legal framework in the EU and explains the main and supporting provisions for self-consumption.

Member States should ensure **comprehensive coverage of all aspects of self-consumption**. This should include setting out the characteristics and limits necessary to qualify as a self-consumer, the rights granted to self-consumers, the regulatory framework for their activity and how they can participate in the electricity market.

In the **RED** the **Clean Energy for All Europeans package** has put in place an enabling framework for final customers that generate, consume and sell their own renewable electricity. Energy sharing by renewables self-consumers is explicitly recognised within a multi-apartment block or an REC. **The Electricity Directive** recognises final customers that are operational in the electricity market as active final customers and grants them an enabling framework to facilitate their integration into the electricity system, including their participation in flexibility and energy efficiency schemes.

**The RED** defines the concept of **renewables self-consumers and jointly acting renewables self-consumers** in **Article 2, points (14) and (15). Article 21 of the RED** expands on the rights of renewables self-consumers and how they can operate, by granting them the right to **produce, sell and store self-produced electricity** and to **receive payment** for surplus electricity injected into the grid. It also allows jointly active renewables self-consumers to **engage jointly in those activities** and to **arrange energy sharing** among themselves. **Third-party ownership** of installations used for the purpose of renewables self-consumption is explicitly enabled by Article 21(5) RED.

**Article 2, point (8) of the Electricity Directive** defines the concept of **active customers**, while **Article 15** of the Electricity Directive puts in place an **enabling framework** that focuses mainly on the interface with the relevant energy markets and systems by regulating grid-connection procedures and applicable charges for storage facilities. This ensures both proportionate and non-discriminatory treatment regarding charges, procedures and technical and administrative requirements and the application of network charges that account for electricity fed into and

consumed from the grid with the mandatory phase-out of net-metering schemes beyond the imbalance settlement time frame.

The more recent **Article 15a of the Electricity Directive** introduced the **right to energy sharing** by active customers, with and between each other, of off-site-generated or -stored electricity for the purpose of self-consumption. Energy sharing should, as such, be seen as a new element **in Article 21 of the RED and Article 15 of the Electricity Directive** that **reinforces and extends the existing EU frameworks for final customers that generate, consume and sell their own electricity**. It puts in place minimum harmonisation rules for renewable electricity sharing between jointly acting renewables self-consumers and RECs, and enables active customers to self-consume shared electricity generated or stored on premises other than the same (multi-apartment) building. This will not adversely affect any existing national regulations on collective self-consumption schemes created on a voluntary basis by Member States at national level.

The Directive (EU) 2023/2413[365] adds new elements to the framework set out by the Clean Energy Package by introducing additional rights for renewables self-consumers. Grid connection for heat pumps of up to 50 kW installed by renewables self-consumers are to be permitted within two weeks of notification under certain conditions[366]. The permit-granting procedure for installing solar energy equipment on artificial structures and co-located storage must not exceed three months, and for the installation of solar energy equipment up to 100 kW and heat pumps below 50 MW it must not exceed one month. Moreover, a simplified registration process and reduced registration fees for guarantees of origin apply to small installations of below 50 kW and to RECs.

In addition, the revised **Directive 2024/1275 of the European Parliament and of the Council (EPBD)** requires new buildings to be zero-emission from 2030 (and public buildings from 2028). Renewable sources generated on site or nearby can help achieve this. In accordance with **Article 10(3) of the EPBD**, installing solar energy installations will gradually become the norm for new and existing buildings from 2026 to 2030. **Article 10(5) of the EPBD** requires Member States to put in place a framework providing the **necessary administrative, technical and financial measures** to support the deployment of solar energy in buildings.

The first part of this SWD is focused primarily on **final customers active in the electricity system using solar PV technologies operated within their premises, the same multi-apartment building or other premises**[367]. Some good practices and recommendations aim to help active customers play a more 'active' role in the electricity market, however, or may be relevant to collective or extended self-consumption schemes beyond multi-apartment buildings defined at national level. The second part of this SWD will focus solely on the right to energy sharing enshrined in **Article 15a of the Electricity Directive** with the aim of ensuring a standardised approach.

[365] Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652, http://data.europa.eu/eli/dir/2023/2413/oj.

[366] In other words, 'provided that the electrical capacity of a renewables self-consumer's renewable electricity generation installation amounts to at least 60% of the electrical capacity of the heat pump'.

[367] Subject to the relevant provisions of Article 21 of the RED, Article 15 and 15a of the Electricity Directive.

## 2. DEVELOPING CLEAR, ACCESSIBLE AND COHERENT DEFINITIONS AND FRAMEWORKS

Defining what 'renewables self-consumers' and 'active customers' mean (i.e. what characteristics they need to have) is crucial to give **certainty and clarity to final customers** engaging or looking to engage in self-consumption. It is also the first step to be taken towards an **enabling and supportive framework for renewables self-consumption** – a step considered essential to accommodate the increasing number of final customers involved in self-consumption schemes and the rising importance of the activity.

**Inadequate, unclear or non-existent definitions** of renewables self-consumers and active customers in relevant national legislation **can impede the uptake of self-consumption**, as the rights of such consumers and customers may not be properly recognised in the legislation. Moreover, other relevant actors, such as DSOs, may not be fully aware of the applicable rules, potentially complicating interactions.

Furthermore, people without direct access to a roof, such as tenants, or with financial constraints, such as people affected by energy poverty, face further barriers. In such cases, allowing final customers to operate across different premises through **energy sharing**, or **promoting the installation of plug-in systems**, can **increase accessibility**. Clear definitions are also necessary to **distinguish individual final customers generating, consuming and selling their own electricity from other entities**, such as jointly acting final customers, suppliers and energy communities.

**The RED** provides definitions of both **individual and jointly acting renewables self-consumers**. Both individual and jointly acting renewables self-consumers are **final consumers who produce or store renewable electricity for their own use**. They can also **store or sell** the renewable electricity that they produce, provided that – unlike suppliers – it is **not their main commercial or professional activity**. Individual renewables self-consumers **typically operate within a single (multi-apartment) building**, though they **may also operate in other locations**, if allowed by Member State regulations. By extending renewables self-consumption beyond (multi-apartment) building level, more consumers can benefit from renewable energy solutions.

Similarly, the **Electricity Directive defines active customers** as **final customers that produce or store electricity for their own use. It allows them both to sell their self-generated renewable electricity** and to **participate in flexibility or energy efficiency schemes**, provided that this **does not constitute their primary commercial or professional activity**. With the introduction of the **right to energy sharing** in the **Electricity Directive**, active customers are now entitled and enabled to **operate in other locations** for the purpose of organising virtual self-consumption.

### 2.1. CLEAR DEFINITIONS

Member States should review national legislation to ensure comprehensive coverage of all aspects of renewables self-consumption. This should include **defining the characteristics and setting the limits** necessary to qualify as a self-consumer.

In order to qualify as a 'renewables self-consumer' or 'active customer', sales of electricity **must not constitute the consumer's or customer's primary commercial or professional activity**. In other words, final customers cannot self-generate electricity or set up a business for the primary purpose of selling renewable electricity. This distinguishes them from commercial suppliers and may justify differentiated treatment. **Czechia**, for example, does not require power plants with an installed capacity of up to 100 kW to have a licence for generating electricity.

**Member States' approaches to limiting the commercial character of final customers that self-generate electricity** vary from requiring minimum levels of self-consumption[368] to limiting the total amount that such customers can inject into the grid or be paid for[369]. In this regard, Member States impose a limit in proportion either to total yearly consumption or to total electricity generation.

### 2.2. COHERENT DEFINITIONS

The EU framework has introduced two relevant concepts for final customers that generate, consume and sell their electricity: active customers and renewables self-consumers. Active customers are defined in **Article 2, point (8) of the Electricity Directive** and renewables self-consumer and jointly acting renewables self-consumers are defined in **Article 2, points (14) and (15) of the RED.**

Both concepts overlap considerably, as far as self-consumption of renewable electricity is concerned. They may therefore be used interchangeably to talk about increasing the uptake of self-consumption by final customers. However, the framework in **Article 15 of the Electricity Directive for active customers** is tailored specifically to **integration into the electricity market**, allowing for power installations that generate electricity from fossil fuels[16] and encouraging storage system integration and participation in flexibility and energy efficiency schemes. **Article 21 of the RED**, on the other hand, covers **renewable electricity mainly for the purpose of self-consumption**.

Member States have taken different approaches. Some treat renewables self-consumers as a subset of active customers. Others distinguish clearly between one framework for renewables self-consumers and another for broader active customer activities (e.g. flexibility). **Some Member States have subsumed 'renewables self-consumers' under 'active customers'**, combining the frameworks for renewables self-consumption and wider active customer activities into one. In **Flanders (Belgium)**, for example, the regional Energy Decree introduces a single definition of 'active customers' when allocating the rights and responsibilities of renewables self-consumers[370].

Where 'renewables self-consumers' and 'active customers' are combined in a single concept, Member States should **take care to ensure that the conditions, rights and responsibilities of the enabling framework in both Article 21 of the RED and Article 15 of the Electricity**

[368] At least 80% of the electricity fed into the grid by energy communities should be used for self-consumption. Presentation by the Ministry of Climate and Energy (2025).

[369] In Czechia PV systems of less than 10 kW are not authorised to feed excess electricity into the grid: https://www.zakonyprolidi.cz/cs/2016-16.

[370] Artikel 4.4.2 Vlaams Energiedecreet.

**Directive apply**. Special attention should be paid to the particular characteristics of the enabling framework in **Article 21** for renewable energy-based self-consumption with regard to:

- the possibility for **third-party ownership**, provided that the third party remains subject to the renewables self-consumer's instructions;
- the right of jointly acting renewables self-consumers to **share electricity at least within a multi-apartment building;**
- the general prohibition, with some exceptions (Article 21(3) of the RED), on applying **charges or fees** in relation to **renewable electricity remaining within the premises of renewables self-consumers**.

Furthermore, as a result of the extension of self-consumption to a wider group of final customers on the basis of Article 15a of the Electricity Directive on energy sharing and the application of different rights and responsibilities, Member States may consider **further differentiating between individual and jointly acting final customers generating, consuming and selling their own electricity, provided that this is proportionate and duly justified** (Article 21(4) of the RED)**.**

### 2.3. ACCESSIBLE DEFINITIONS

Self-consumption can bring benefits to all types of final customers, ranging from large enterprises to households. For those consumers with more limited financial resources or without access to suitable space, however, the benefits of self-consumption are limited from the outset.

On the basis of **Article 2, point (14) of the RED** and **Article 2, point (8) of the Electricity Directive,** Member States may allow for **self-consumption of electricity generated or stored off-site. Article 21(4) of the RED** explicitly allows jointly acting renewables self-consumers to share renewable energy within the same multi-apartment building.

There are several potential solutions for widening access to self-consumption, even for consumers who do not own their own roof. In **Germany,** homeowners and tenants are allowed to install mini-solar plug-in systems on their balconies. According to the German Solar Association, more than 1 million balcony power plants were registered in 2025[371].

Member States may also allow for the **consumption and storage of electricity generated on other premises.** Several Member States[372] have taken the step of broadening the scope of self-consumption beyond (multi-apartment) buildings through energy-sharing schemes for jointly acting final customers and energy communities, or other types of collective or extended self-consumption schemes, as laid down in national legislation.

In **Lithuania** consumers can acquire shares in remote solar parks. To increase the transparency of the system and promote energy literacy, consumers can access historical consumption and

[371] 1 million plug-in solar devices registered in the market master data register – All about plug-in solar, balcony power plants and solar!

[372] Including Belgium, Italy, Luxembourg, Austria and Portugal.

generation data online[373]. In **France** a definition of collective self-consumption has been laid down in national legislation, outlining specific rules on the operational boundary of such schemes, which goes beyond the minimum requirements of the RED: up to 2 km in general and up to 20 km in rural areas, provided that the installed capacity does not exceed 3 MW. There are also rules on the distribution of electricity among participants and the sale of excess electricity. The legislation also clarifies that jointly acting final customers engaged in collective self-consumption are exempt from holding an operational licence, clearly distinguishing them from suppliers[374]. In **Brussels (Belgium)** energy sharing is defined as consumption, shared between active customers acting jointly or members of an energy community within a 15-minute period, of electricity produced by one or more production facilities connected to the regional transmission network or distribution network[375].

The introduction of the **right to energy sharing in Article 15a of the Electricity Directive**, to be transposed by 17 July 2026, has now put in place an **EU minimum harmonisation framework for all types of virtual**[376] **self-consumption schemes between – or within groups of – final customers**.

## 3. STRATEGIC CONTRIBUTION OF SELF-CONSUMPTION TO EU OBJECTIVE(S) ON THE BASIS OF POTENTIAL ASSESSMENT

An **assessment of the potential for self-consumption** may be useful for many purposes. It can be the first step towards **setting a target**, which, in turn, can send a **political signal** of the importance of self-consumption and **provide certainty for investors.** It can help **monitor progress made in self-consumption** towards achieving the target or – by contrasting it with the identified potential – understand whether there are still regulatory or non-regulatory hurdles that may prevent it from being achieved.

**Article 21(6) of the RED** requires Member States to **carry out an assessment of the potential of renewables self-consumption and the unjustified barriers** hindering its development. The results of such an assessment are to be used to put in place an enabling framework addressing the identified regulatory and non-regulatory barriers related to various aspects, such as the financing of projects or accessibility for low-income or vulnerable households. Member States could use this assessment to draw up a strategic road map with a comprehensive set of measures and policies to promote self-consumption that considers their potential to provide flexibility to the system.

Member States can use a small number of tools developed and maintained by the European Commission's Joint Research Centre to determine the potential for self-consumption. The **Energy and Industry Geography Lab** provides various layers of data, including solar potential, detailed to the scale of MW/km$^2$. The **Photovoltaic Geographical Information System (PVGIS)** is

[373] Lithuania: Consumer platform for purchasing solar energy in remote PV plants.
[374] *Guide pratique (Synthèse) à destination des collectivités territoriales*, ADEME (December 2023).
[375] Brugel – Energy Sharing.
[376] The administrative matching of production (injected into the grid) and consumption (taken out of the grid) by final customers within the same imbalance settlement period.

another valuable resource for gathering information on solar radiation and photovoltaic system performance at building scale.

In order to effectively monitor the development of self-consumption, **Member States could consider collecting and making available data on at least the following: (i) the alternating current (AC) and direct current (DC) capacity of connected final customers** in each segment (residential, commercial and industrial); (ii) the number of self-consuming installations in each segment; (iii) the number and capacity of installations not used for self-consumption in each segment; and (iv) the total electricity injected into the grid by RES installations. Currently, **many Member States do not report granular data on self-consumption** and the data collected, when made available, are of different types and presented in different units.

**Article 20a(1) of the RED**[377] requires Member States to ensure that the **data on the share of renewable electricity in each bidding zone are made available** as accurately as possible in intervals equal to the market settlement frequency. **Where technically feasible, DSOs are also to make available anonymised and aggregated data on renewable electricity generated and injected into the grid by final customers.** The Commission communication on guidance on Article 20a (C(2024) 5041 final)[378] explains that ensuring that this information is available will benefit consumers, as they will have access to it in a simple and efficient way and it will be updated in near-real time. Furthermore, Member States are asked to ensure data interoperability.

An example of good practice can be found in **Spain,** which issued its national road map for self-consumption in 2021. The road map is based on a study carried out by the Institute for the Diversification and Saving of Energy (IDAE), which assessed the potential for self-consumption and the challenges to its deployment. The road map includes the objective of reaching 9 GW of installed capacity for self-consumption purposes by 2030. In its national energy and climate plan, Spain raised this target to 14 GW. The road map also sets out measures to address the challenges identified, such as the publication of guidance for municipalities and professionals to promote self-consumption. In order to draw up the road map, the IDAE analysed data from the urban land registry, power density, generation curve assumptions, electricity prices, demand from different types of consumer, payback and other barriers. Spain will also introduce a publicly accessible online national register for self-consumption to monitor the activity from an economy and system point of view and its contribution to the renewable energy integration objectives[379].

Furthermore, in order to tap the potential of self-consumption and deliver on EU energy objectives, it is important for Member States to recognise the role of self-consumption in the transition and to **consider its potential and expected growth in other relevant strategies and planning documents,** such as their national contributions to achieving the EU's renewable energy targets and the NBRPs. They must also report on progress made in implementing their NECPs.

[377] RED, as amended by Directive (EU) 2023/2413.
[378] efcd200c-b9ae-4a9c-98ab-73b2fd281fcc_en.
[379] Article 19(1) of Royal Decree 244/2019.

## 4. ENSURING ACCESS TO FINANCING AND INVESTMENT SUPPORT

Solar PV costs have decreased by 82% over the past decade, making it one of the most competitive sources of electricity in the EU. Nevertheless, the **upfront investment costs** of a solar PV installation for self-consumption purposes is **still too high for certain segments of the population**, in particular low-income or vulnerable households and small and medium-sized enterprises.

The **growing frequency of negative and low electricity prices** during periods when solar installations are actively generating electricity is resulting in **lower remuneration** for the electricity they inject, in some cases also affecting the viability of this business model. Nowadays, in order to make them more financially attractive, solar PV installations are often **accompanied by co-located energy storage**. This can help accelerate the return on investment, especially in markets where energy storage systems can trade in the electricity market and earn revenue for the services they provide to the grid. However, it **substantially increases the initial investment costs**.

**Article 21(6) of the RED** requires Member States to put in place an **enabling framework** to promote and facilitate the development of self-consumption. The enabling framework must **address unjustified barriers to the financing of projects** and **set out measures ensuring: (i) access to finance**; (ii) non-discriminatory access to relevant existing support schemes for self-generated renewable electricity fed into the grid; and (iii) accessibility of self-consumption for all final customers, including those in low-income or vulnerable households. **Article 21(5) of the RED** and **Article 15(2)(d) of the Electricity Directive** allow final customers to make use of a **third-party investor or manager** to install, operate and maintain an installation.

**Support and enabling policy frameworks** for prosumers take various forms: **investment subsidies, feed-in tariffs, exemptions from certain taxes** or the possibility **of selling excess electricity** to other consumers or directly in the market. The following sections will explore these forms of financing and investment support.

### 4.1. INVESTMENT SUPPORT

Member States have several options to make these projects more accessible and facilitate the initial investment to be made by final customers, the most common ones being **investment support** through **grant schemes** or **tax reductions in the purchase of solar PV installations**.

#### 4.1.1. Grant schemes

Faced with increasing grid capacity constraints and rising imbalance costs, several Member States have **integrated support for storage facilities and solar PV installations** into grant programmes.

In 2025 **Malta** launched a grant scheme for consumers that covers 50% of the cost of solar PV installations and 80% of the cost of hybrid solar PV and energy storage installations, up to a certain ceiling. Member States can also make use of EU funding opportunities to provide investment support for self-consumption. **Romania**'s recovery and resilience plan includes a measure aimed at providing financial support, in the form of vouchers, to small-scale solar PV and storage installations (with an installed capacity of at least 3 kW and 5 kWh respectively). To reduce energy

costs and increase competitiveness, Romania has also mobilised EUR 310 million from the Modernisation Fund to provide investment support for solar installations below and above 5 MW, wind energy and hydropower[380]. **Bulgaria**'s Recovery and Resilience Plan includes a measure aimed at providing direct grants to households for installing a solar PV, including solar thermal, and storage installations[381]. In **Poland** the 'My Electricity' (Mój Prąd) programme provides cofinancing in the form of grant support to prosumers that use the net-billing system to purchase and install PV installations of up to 10 kW and devices that support self-consumption, such as heat pumps, heat storage, energy storage facilities and solar collectors[382].

The level of investment aid may be linked to the access to operational support. In **Luxembourg** the Klimabonus Wunnen subsidy provides up to 50% investment aid for solar PV installations used for behind-the-meter self-consumption or energy sharing. Final customers can choose between a 20% investment subsidy in combination with a guaranteed feed-in tariff and a 50% investment subsidy without access to the feed-in tariff[383].

#### 4.1.2. Tax reductions

**Council Directive 2006/112/EC, as amended by Directive (EU) 2022/542[384]** on rates of value added tax allows Member States to **apply reduced VAT rates, super-reduced rates (below 5%), and exemptions from VAT to a limited number of goods and services**, including the **supply and installation of solar panels on and adjacent to certain categories of buildings[385].**

Some Member States are making use of this option. Since May 2023 **Ireland**, for example, has applied a zero rate of VAT in domestic solar PV installation contracts[386].

### 4.2. THIRD-PARTY FINANCING

Member States can also facilitate access to finance by explicitly allowing third-party schemes. In **Portugal** a third-party investment model is implemented by the energy supplier Greenvolt Comunidades. Under that model, the energy supplier finances the solar PV installation of the energy-sharing scheme and the participants of the scheme pay the supplier a consumption-based energy-as-a-service fee for a given period of time. At the end of that period, the final customers can purchase the solar PV installation at a reduced price. In **the Brussels Capital Region (Belgium)**, Brusol, a company and energy supplier, offers to install solar panels on private rooftops at no cost. It recovers the investment through the sale of green electricity certificates and up to 1 000 kWh of self-consumed electricity at a fixed price. In **Flanders (Belgium)** the social housing

[380] Romania opens €310 million investment call for self-consumption installations – pv magazine International.
[381] Bulgaria's recovery and resilience plan - Reforms and Investments.
[382] About the programme – My Electricity.
[383] Klima-Agence - Subsidy simulator
[384] Council Directive (EU) 2022/542 of 5 April 2022 amending Directives 2006/112/EC and (EU) 2020/285 as regards rates of value added tax, ST/5442/2022/INIT, http://data.europa.eu/eli/dir/2022/542/oj.
[385] In line with Directive (EU) 2022/542 of the European Parliament and of the Council on rates of value added tax and consistent with the maximum net expenditure growth rates endorsed by the Council under Regulation (EU) 2024/1263, the corrective net expenditure path under Regulation (EC) No 1467/97 where applicable, and the objective of ensuring sound and sustainable public finances under the EU fiscal framework.
[386] Ministers McGrath and Ryan announce a zero rate of VAT for the supply and installation of solar panels for private dwellings from 1 May 2023

cooperative ASTER is investing in installing solar PV installations on social housing units to help address energy poverty[387]. Similarly, the energy community Klimaan raised EUR 250 000 in investments to equip the Otterbeek social housing district in the city of Mechelen with rooftop solar PV installations. Investments are indirectly recovered through on-rent financing[388].

### 4.3. COLLECTIVE FINANCING

Final customers can also pool investments to cofinance renewable electricity projects for the purpose of self-consumption. With the introduction of the right to energy sharing in **Article 15a of the Electricity Directive**, jointly acting final customers can then benefit from a reduction in the energy component of their electricity bill in proportion to the electricity shared within the imbalance settlement period.

To facilitate access to private financing, **Member States must transpose the article on energy sharing promptly, by 17 July 2026, and ensure that an enabling framework for active customers and renewables self-consumers that engage in energy sharing is in place**, in accordance with Article 21(4) of the RED and Article 15(3) of the Electricity Directive. This requires Member States to ensure that all the rights and obligations under Article 15 of the Electricity Directive apply to final customers engaged in energy sharing. Member States may differentiate between individual and jointly acting final customers in terms of enabling conditions (e.g. application of charges), provided that this is duly justified and proportionate. In **Latvia**, for example, dedicated frameworks have been set up for associated active users and jointly acting active users that can participate in energy sharing[389].

Examples of community energy sharing can be found across the EU Member States, although the arrangements for implementing the data-management approach, net-metering and financial settlement periods, eligibility of final customers and geographical scope vary. In **Portugal** the Telheiras REC has pooled investments from local residents to install 7.15 kWp solar panels on the rooftop of a building managed by Lumiar Parish Council in the city of Lisbon. The collectively generated renewable electricity will be shared with the investors and neighbouring vulnerable families[390].

## 5. ENSURING FAIR REMUNERATION FOR SURPLUS ELECTRICITY

Final customers that consume the electricity they generate benefit directly from reductions in their electricity bills, which can help them recover their initial costs. **Remuneration for excess electricity** is also a **crucial part of the business model**, allowing consumers to recover their initial investment.

In accordance with **Article 21(2)(a) of the RED**, renewables self-consumers are **entitled to receive remuneration** for the electricity they feed into the grid, either at market rates or through

[387] ASTER, Vlaanderen | EnergyVision.
[388] Otterbeek, Mechelen – Klimaan cvso.
[389] Presentation by the Ministry of Climate and Energy, Riga (2025).
[390] Apresentação do PowerPoint.

support schemes. Different support schemes are being used across the EU, such as **net metering or net billing.**

## 5.1. REMUNERATION THROUGH SUPPORT SCHEMES

### 5.1.1. Net metering

**Net metering** is a scheme which exempts final customers from network charges and/or protects them from exposure to the market value of surplus electricity by offsetting their consumption with electricity injected into the grid over long (e.g. monthly or (multi)annual) periods of time, outside the imbalance settlement period. Net-metering schemes often coincide with conventional metering systems that cannot measure in near-real time the electricity injected into and withdrawn from the grid.

This approach has been very successful in attracting new final customers to invest in solar PV technology due to its simplicity and the significant savings that can be achieved. However, net-metering schemes that do not account separately for electricity fed into and consumed from the grid as the basis for calculating network charges can lead to cost socialisation and discrimination between system users. In accordance with **Article 15(2)(e) of the Electricity Directive**, such net-metering schemes **must be phased out**, other than existing schemes that were in place before 5 June 2019. For existing schemes, no new rights (i.e. net-metering contracts) may be granted after 31 December 2023 under **Article 15(4) of the Electricity Directive.**

Net-metering schemes that account adequately for electricity injected into and consumed from the grid as a basis for calculating network charges and concern only the netting of the energy component over long periods of time may, in principle, continue to exist under EU law. This approach is taken in some Member States[391]. These schemes do not account for the actual value of energy or incentivise optimisation of self-consumption and may impose costs on suppliers for electricity supplied that cannot be billed[392]. Where such schemes are in place, they will need to comply with the conditions in **Article 9 of the Electricity Directive** to ensure that market competition between suppliers is not distorted.

For the above reasons, it is **not recommended to continue** net-metering schemes that allow netting of kilowatt-hours outside the imbalance settlement period. When phasing such schemes out, it is important to **communicate the changes to consumers promptly** and to give them enough time to adapt. In addition, it is crucial to ensure that the new system put it in place provides incentives for final customers to invest in solar PV installations and allows them to **recuperate their initial investment within 10 years**.

### 5.1.2. RES support schemes

[391] For example, Greece, Cyprus, Lithuania and Hungary.

[392] Suppliers are required to offset consumption during peak times, when the value of electricity is high, with production during off-peak times, when the value of electricity is low.

RES support schemes are an important driver to incentivise final customers to invest in solar PV installations. Support may consist of feed in tariffs or premiums. Such schemes are usually exempt from auctions and limited to a certain installed capacity.

**Article 4(3) and (4) of the RED** requires Member States to put in place direct support schemes in the form of a market premium based on public auctions, with an exception for small-scale installations. The **Guidelines on State aid for climate, environmental protection and energy 2022** (CEEAG), for example, include an explicit exemption from mandatory competitive bidding processes to allocate aid and set the aid level for small projects of below or equal to 1 MW of installed capacity, and for SME- or energy community-owned projects of up to 18 MW for wind generation and up to 6 MW for all types of technologies.

Exemption from public auctions can ensure accessibility, while feed-in premiums ensure minimum exposure to market signals. Feed-in premiums are a support scheme in which electricity generated from renewable energy sold to the market receives a premium on top of the market price. To ensure fair remuneration and prevent overcompensation, a **cap and floor system** can be put in place.

In **Italy** a feed-in premium price based on a fixed component (depending on the installation size) and a variable component linked to the regional energy price applies to electricity shared for the purpose of self-consumption, with upper limits depending on the installation size[393]. In **Austria** 50% of the renewable electricity that is not self-consumed can be supported through a market premium[394].

Where such operational support is provided by imposing an obligation on an economic actor that would otherwise not perform such an activity, it is important for the scheme to be in line with the conditions outlined in **Article 9 of the Electricity Directive**, which requires such obligations to be clearly defined, transparent, non-discriminatory and verifiable and to guarantee equality of access for electricity undertakings of the Union to national consumers.

### 5.1.3. Tax reductions or exemptions

Another form of operational support relates to applying reductions to or exemptions from certain taxes on electricity injected into the grid by final customers.

By virtue of Article 98(1) and point (22) of Annex III of the **Council Directive 2006/112/EC on the common system of value added tax**, Member States are allowed to apply a reduced VAT rate to the supply of electricity. On the basis of Article 15(1)(b) of **Council Directive 2003/96/EC on restructuring the Community framework for the taxation of energy products and electricity**, Member States are allowed to apply, under fiscal control, total or partial exemptions or reductions in the level of taxation to electricity of solar or wind origin or electricity generated from biomass.[395] This legislation applies when energy sharing concerns energy from RES.

[393] Legislative Decree 199/2021 and Ministerial Decree 414/2023.
[394] Section 80 of the EAG.
[395] All fiscal policy measures should be aligned with Directive (EU) 2022/542 of the European Parliament and of the Council on rates of value added tax and consistent with the maximum net expenditure growth rates endorsed by the

Member States apply tax exemptions, especially in relation to electricity shared for the purpose of self-consumption.

**Austria** applies a VAT exemption of up to EUR 30 000 to electricity fed into the grid for households. The quantities of shared electricity within an REC are not used as a basis for calculating the renewable levy due[396].

### 5.2. REMUNERATION BASED ON MARKET PRICES

#### 5.2.1. Supply-back contracts

Supply-back contracts enable final customers to receive payments for surplus electricity that they do not self-consume and feed back into the grid. **Suppliers set the price unilaterally and final customers either accept it or switch supplier**. In this case, access to **transparent and accessible price comparison tools** as described in **Article 14 of the Electricity Directive** can help final customers understand and compare offers and switch to the best possible deal. Cooperation with energy suppliers and DSOs is crucial to make this option work in a smooth and efficient manner.

In Flanders (**Belgium**), for example, the regulator manages a comparison tool that offers an overview of buy-back offers, with the contract terms clearly shown.

Member States may decide to **ensure that suppliers provide wholesale market-compliant offers.** In **Romania** renewables self-consumers receive payment for the excess electricity that they inject into the grid on the basis of the average weighted price on the day-ahead market from the previous year, providing a transparent and clear, market-based system for their payment.

Some Member States have set **minimum prices for supply-back contracts**. In the **Netherlands**, once net metering has been phased out on 1 January 2027, suppliers will have to pay at least 50% of the gross electricity price for surplus electricity sold by final customers[397]. Although such schemes protect the right to remuneration of final customers at times when the value of solar electricity is low or negative, they may also lead to supplier costs that they cannot recover and reduce the incentive for them to invest in storage facilities or heat pumps to help optimise self-consumption. Such minimum prices should be classified as operational support schemes under **Article 4 of the RED** that impose an obligation on suppliers, subject to the conditions in **Article 9 of the Electricity Directive** (see Subsection 4.1.2).

#### 5.2.2. Net-billing schemes

**Net-billing schemes address the limitations of net-metering schemes** based on conventional metering systems by being more reflective of market value and applying network charges that account separately for electricity fed into and consumed from the grid. They **compensate final customers on the basis of the market value of electricity at the time of injection**, balancing

Council under Regulation (EU) 2024/1263, the corrective net expenditure path under Regulation (EC) No 1467/97 where applicable, with the objective of ensuring sound and sustainable public finances under the EU fiscal framework.

[396] See EC Facility – Country fiche AT, EECF country fiche Austria.pdf.

[397] Net metering scheme to end in 2027 | Energy at home | Rijksoverheid.nl

what they withdraw from the grid against what they inject into it. Several Member States already have this type of net-billing scheme or are putting one in place, partly to comply with the provisions of the Electricity Market Directive.

Under **Portugal's** net-billing scheme, the electricity injected into the grid is sold at market prices. The excess electricity injected into the grid is purchased at 90% of the local spot price (Iberian Electricity Market – MIBEL), with 10% being deducted to cover network costs. When active customers and small renewables producers with a capacity of less than 1 MW cannot find a buyer for their injected electricity, a last-resort supplier can buy the electricity injected at a market-based set price[398]. In **Spain** a simplified compensation mechanism using dynamic prices is in place for excess electricity generated by installations of up to 100 kW[399].

### 5.3. ENERGY SHARING

Another viable option for receiving payment for electricity fed into the grid is the **right to energy sharing** granted to final customers in Article 15a of the EMD. On the basis of Article 2(10a)(b) of the EMD, individual active customers may transfer their right to self-consumption to other final customers for a price or free of charge. In **Brussels (Belgium)**, for example, the social housing company Foyer du Sud installed solar panels on the rooftop of a social housing unit. Surplus electricity that is not self-consumed at the collective meter is shared with the tenants[400].

Member States should enable such schemes by implementing the enabling framework for the right to energy sharing by 17 July 2026, in accordance with the **Commission Recommendation on maximising the potential of self-consumption and ensuring a standardised approach to energy sharing.**

## 6. ENABLING THE SALE OF ELECTRICITY

As well as selling excess electricity to one of the market suppliers, final customers may also choose to **sell their excess self-generated electricity to other actors in the market.**

By virtue of **Article 21(2)(a) of the RED** and **Article 15(2)(b) of the Electricity Directive**, final customers are entitled to sell their excess production of renewable electricity, including through **renewables power purchase agreements, electricity suppliers** and **peer-to-peer trading arrangements.**

### 6.1. POWER PURCHASE AGREEMENTS

Renewables power purchase agreements are defined in **Article 2, point (17), of the RED** as contracts under which a natural or legal person agrees to purchase renewable electricity directly from a producer. **Article 19a of the EMR** lays down further rules on the uptake of PPAs, including through guarantee schemes at market prices to reduce the financial risks associated with offtake payment defaults.

[398] Net-Metering / Net-Billing | Clean energy for EU islands.
[399] Country fiche ES – EECF country fiche Spain.pdf.
[400] sunsud_vlo_pilote – Foyer du Sud.

This type of contract is typically used to **supply companies**, with producers often having a high installed capacity. Final customers often lack legal or financial expertise and the production scale and creditworthiness to enter long-term PPAs as a producer. So even if this model is technically feasible, **its applicability is limited**. Moreover, final customers cannot sell their electricity as their primary economic or commercial activity, further limiting the suitability of PPAs.

Nevertheless, PPAs for surplus electricity may be of interest to specific types of final customer, such as **large and medium-sized enterprises with larger-scale solar or wind installations**. Member States can promote cooperation between final customers and suppliers to engage in PPAs, provide standardised template PPAs to ease the administrative burden or offer financial incentives as described in **Article 19a(3) of the EMR** to help overcome the barriers described above.

### 6.2. PEER-TO-PEER TRADING

Peer-to-peer trading arrangements include the **sale of renewable energy between market participants** by means of a **contract with pre-defined conditions** governing the transaction, either directly between the participants or through a third-party market participant. This type of arrangement would be **more suitable for household customers and small non-household customers than PPAs.**

There are several challenges associated with developing peer-to-peer systems for final customers. It is, for example, necessary to have **high deployment of smart meters** and **online platforms** allowing the connection of final customers offering to sell their excess electricity to other market participants.

Some Member States, such as **Spain, Italy, the Netherlands and Slovenia**, have introduced peer-to-peer trading in their national legal systems, though in general with a clear focus on supporting energy communities. Changes may be needed to ensure that final customers can also reap the benefits of this system.

Peer-to-peer trading can be based either on **bilateral metering** (i.e. the transfer of electricity is settled between two meters) or on **subtraction between meters based on an allocation method**, as is the case for energy sharing. In **Flanders** (**Belgium**), for example, final customers can sell their excess self-generated electricity on the basis of the data-management framework for energy sharing.

Peer-to-peer trading is likely[401] to be operationalised through **digital private or public platforms** where consumers and prosumers can directly trade renewable energy with each other in an automated manner ('peer-to-peer trading platforms').

In the **Netherlands**, for example, the DSO[402] has set up the ENTRNCE platform[403] to connect consumers and producers in local energy markets. In **Austria** the energy community OurPower

[401] Alternatively, this can be operationalised through blockchain technology.
[402] Alliander.
[403] ENTRNCE | Home.

helps connect renewable energy producers and energy consumers through a private digital marketplace[404].

Where the DSO is responsible for operating a peer-to-peer trading platform, Member States should be **mindful of unbundling requirements** that apply in this respect, especially when deciding on allocating balancing responsibility, and ensure that such markets are **neutral, accessible, scalable, interoperable and consistent with wider system needs**.

### 7. ENSURING ACCESS TO INFORMATION AND SUPPORTING CAPACITY BUILDING FOR SELF-CONSUMPTION

**Insufficient information** on self-consumption is still a barrier to its uptake across the EU. This includes consumers – industrial consumers, households, etc. – not having easy access to information on the procedure to be followed to build their RES installations and get them connected to the grid, as well as difficulties obtaining information about their rights or the possibilities of managing and exploiting their installation.

**Article 18 of the RED** requires Member States to **make information on support schemes** available to all relevant actors, including renewables self-consumers. Member States are also asked to set up **single contact points** which guide applicants throughout the administrative permit-granting application so that they do not have to contact several administrative bodies in order to complete the application (**Article 16 of the RED**). The single point is very relevant to all types of projects and applicants, but it can prove especially useful for final customers, as this is not their professional occupation and they do not, therefore, usually know the procedures.

The **European Commission** has recently launched a Citizen Energy Advisory Hub, a three-year project designed to support the development of self-consumption within the EU. The project will develop an overview of legal, administrative and financial conditions and opportunities within the different EU Member States, issue tailored guidance documents to different types of final customers and provide direct technical assistance to 120 selected citizen energy initiatives to help them plan, develop or scale up sustainable energy projects, among other activities.

Member States could consider creating **tailor-made information material**, preferably accessible online, for different types of final customers that may be interested in self-consumption. This would enable them to cover the needs of all groups. Instead of setting up dedicated single contact points, Member States could also consider **empowering their existing OSSs / single contact points** to provide tailor-made replies to final customers' queries. Online tools, available to the general public, which simulate self-consumption conditions and possible infrastructure installations, can further empower consumers[405].

**Portugal** has created practical guides and online tools for self-consumption, covering important aspects such as the legislation to be considered when building these projects as well as step-by-step instructions on how to carry out the administrative procedure, including in condominiums and in integration with electric mobility. These guides and tools have been developed with the

[404] OurPower – the energy cooperative. Make your electricity purchase an electricity relationship.
[405] JRC Photovoltaic Geographical Information System (PVGIS) - European Commission

participation of several entities, including the NRA and the DSO. In addition, the Lisbon region has developed training sessions and digital literacy programmes which have proven effective in attracting individuals and communities to engage in (virtual) self-consumption. In **Croatia** the 'On the sunny side' platform was created in 2013 to provide support to consumers wishing to install solar panels. Support is provided to both households and industrial consumers. This non-profit organisation provides information both on the steps of the permit-granting procedure and on the necessary documentation. It also connects installers of solar PV installations with interested customers and performs viability pre-assessments.

## 8. EASING AND STREAMLINING RES PERMITTING AND REQUIREMENTS

Renewables projects installed for self-consumption purposes are usually solar PV projects, which may be accompanied by a co-located storage installation. Because they are often small projects and at least part of the electricity produced is self-consumed (and the self-consumed share can be increased in the case of hybrid projects, as the excess electricity can be stored and self-consumed at a different time), this type of project is **presumed to have a relatively low impact on grid management and security**. These solar PV installations are often installed on artificial structures, such as rooftops. They are therefore **presumed not to have significant environmental impacts**. Nor do they take up any additional land.

Due to these characteristics, **Article 16d of the RED** introduced a **particularly streamlined permitting procedure** for solar energy equipment in artificial structures and co-located energy storage. The permit-granting procedure for these installations **must not exceed three months**. In addition, the installations benefit from an exemption from any requirement to carry out a dedicated environmental impact assessment. The permit-granting procedure for particularly small solar energy equipment, of a total installed capacity of 100 kW or less, must not take longer than one month. Furthermore, if the relevant authorities do not get back to the applicant by the deadline following submission of the completed application, the permit is granted by tacit consent, provided that the capacity of the solar energy equipment does not exceed the existing capacity of the connection to the distribution grid. Member States may lower the 100 kW capacity limit to 10.8 kW if there is a significant administrative burden or there are significant constraints on the operation of the electricity grid.

**Commission Recommendation (EU) 2024/1343 of 13 May 2024 on speeding up permit-granting procedures for renewable energy and related infrastructure projects** recommends that Member States apply simplified permit-granting procedures for small-scale renewables and renewables self-consumers.

Digitalisation acts as an enabler to facilitate the permit-granting procedures for renewable energy projects in general, including for final customers. This facilitation through **digitalising the procedures** often results in the shortening of procedures.

Furthermore, Member States may apply **exemptions from one or more administrative permits** for small-scale PV installations, solar PV installations on artificial structures or installations built for self-consumption purposes, including energy sharing.

In **Belgium**, for example, all rooftop PV solar installations are exempt from the planning permit, in **Slovenia** all installations intended for self-consumption are exempt from the building permit and in **Czechia** installations of up to 50 kW are exempt from the building permit and the energy licence[406].

**Exemptions and simplified procedures may differ depending on the size of the installation, its location or purpose.**

**Portugal** has introduced different types of permitting requirements, depending on the size of the installed capacity. There is a digitalised prior communication procedure with no licensing fee for small self-consumption generation units of up to 30 kW and prior registration and a certificate for operation with simplified permitting for rooftop generation units of up to 1 MW. These exemptions and simplified procedures largely apply *mutatis mutandis*, under specific conditions, to installations used for the purpose of energy sharing[407]. **The Netherlands** applies a hierarchy of preferred locations for solar PV installations, with rooftop solar PV being at the top. Since they are the preferred type of installations, they benefit from exemptions in some of the permit-granting procedures, except in several cases, such as when the buildings have heritage or monument status.

**Plug-in mini solar**, also known as balcony solar, systems are very small PV systems that are easy to install since they have only to be plugged into a household socket. They are also easy to uninstall as they are portable. Due to their small capacity, they are not expected to have a significant impact on the grid. In addition, they can be complemented by a plug-in battery.

**Article 15a(9) of the Electricity Directive** provides that Member States may promote the introduction of plug-in mini solar systems. This possibility does not prevent Member States from imposing technical standards or requirements because of safety considerations or structural constraints. However, such standards must be compatible with the general requirement in **Article 15(1) of the Electricity Directive**, which ensures that active customers are not subject to disproportionate or discriminatory technical requirements.

In practice, plug-in mini solar systems usually have to comply with burdensome requirements, such as the requirement for the system to be certified by an electrician or that tenants must obtain their landlord's approval for its installation. In **Austria** plug-in mini solar systems do not need to be certified by an electrician. In **Germany** a simplified registration process applies prior to installation[408].

[406] Study on mapping of regulatory frameworks and barriers for individual and collective renewables self-consumption in EU Member States – Publications Office of the EU.

[407] Presentation on concerted action on the Renewable Energy Sources Directive by the Directorate-General for Energy and Geology.

[408] Consumers need to register the systems online in the core energy market data register.

The European Grids Package (COM/2025/1005 final)[409] includes a legislative proposal (COM/2025/1007 final)[410] to remove the permit-granting procedure for small-scale solar PV and storage installations, except for the grid-connection procedure, and to promote the installation of plug-in mini solar systems.

Overall, it is important for Member States to apply simplified permitting procedures and proportionate requirements to installations used for individual self-consumption and energy sharing, as they can otherwise be a major barrier to final customers.

## 9. EASING AND STREAMLINING ACCESS TO GRIDS

In accordance with the requirements of **Article 6 of the Electricity Directive**, Member States should ensure non-discriminatory and transparent third-party access to electricity grids for all network users. The procedure for connecting to the grid is therefore regulated by national legislation. The grid operator also lays down technical requirements for this process, such as compliance with technical standards or studies on the impact of the installation on the grid.

In recent years **grid-connection queues** have started to form in several EU countries. To provide grid users with sufficient transparency regarding treatment of their connection requests and to steer investments towards locations with higher grid availability, **Article 31(3)** of the **EMD** requires DSOs to publish information on the available capacity for new connections and update this information at least quarterly, and also to provide information on the status and treatment of their connection request within three months of submission of the request. System operators should also make it clear to what extent non-firm capacity agreements can be provided in the case of local energy sharing at certain levels of the distribution grid.

Nevertheless, some Member States still have **burdensome connection procedures** for final customers looking to produce their own electricity. They either request requirements that seem excessive in proportion to the size of the installation, leave the whole procedure in the hands of grid operators, without setting a common and clear framework, or ask for high security deposits. Moreover, grid-connection procedures based on first-come-first-served principle may also have a negative effect.

As stated in the Commission guidance on grid connections, Member States should ensure that a **clear and simple connection procedure is in place. The procedure should be proportionate to respective uses** and ensure sufficient maturity and progress of respective connection requests, in order not to block the queue for other users, including those engaged in self-consumption.

Requirements for connection procedures for final customers looking to produce their own electricity can be matched to **the type, purpose and size of installation**. Installations used for

[409] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'European Grids Package', COM/2025/1005 final, EUR-Lex - 52025DC1005 - EN - EUR-Lex.

[410] Proposal for a Directive of the European Parliament and of the Council amending Directives (EU) 2018/2001, (EU) 2019/944, (EU) 2024/1788 as regards acceleration of permit-granting procedures, COM/2025/1007 final, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC1007&qid=1772700784024

self-consumption tend to be small and not to inject all the electricity that they generate, meaning that they have a lower impact on the grid than larger installations used exclusively to generate electricity for export. This may justify shorter, more streamlined and less burdensome procedures.

**Article 17 of the RED** already requires Member States to put in place a simple-notification procedure for grid connections of renewables self-consumers with an electrical capacity of **up to 10.8 kW**. Member States may increase this limit **to 50 kW**. The distribution system operator has one month to react to this notification. If the notification is accepted or the final customer does not receive a reply from the distribution system operator, the installation may be connected. This measure helped accelerate the procedure for connecting such small installations to the grid.

The European Grids Package includes a legislative proposal to further streamline the grid-connection procedures for small-scale renewable energy and storage installations.[411]

**Several Member States**, such as **Germany, Latvia, Malta** and **Austria, already have a simple-notification procedure in place**, although not all of them cover the same installed capacity size. The size up to which connection via simple notification is allowed ranges from 0.8 kVA to 11.1 kVA[412].

**Network operators** could also consider **integrating self-consumption operations when planning**[413] future needs for network reinforcement or the construction of new network lines.

When planning the development of the network, the network operators in **Slovenia** have to **consider the municipal authorities' local energy planning**, which includes information on the use of renewable energy, including the planned location of renewables installations and the integration of self-consumption and REC operations.

In congested areas where it is not possible to provide full connection, Member States should consider making use of **flexible grid-connection agreements**, in accordance with **Article 6a of the Electricity Directive**.

In the **Netherlands** more than 100 companies in Bedrijvenpark Pannenweg II in Nederweert signed a group capacity contract with the local DSO to avoid peaks (i.e. each company maintains an individual connection to the grid but commits not to peak at the same time as the other companies, in order to reduce strain on the wider grid)[414]. The companies make use of rooftop PV installations, battery storage and wind turbines to balance local production and demand in real time, with the goal of covering up to 80% of local demand with local production.

[411] Proposal for a Directive of the European Parliament and of the Council amending Directives (EU) 2018/2001, (EU) 2019/944, (EU) 2024/1788 as regards acceleration of permit-granting procedures, COM/2025/1007 final, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC1007&qid=1772700784024

[412] *Study on mapping of regulatory frameworks and barriers for individual and collective renewables self-consumption in EU Member States* – Publications Office of the EU.

[413] See Article 32(3) of the Electricity Directive.

[414] *Bedrijvenpark Pannenweg II in Nederweert.*

## 10. INCENTIVES TO MAXIMISE THE VALUE OF SELF-CONSUMED ELECTRICITY

The number of RES installations used for self-consumption has substantially increased, in particular during the energy crisis, and one of the main issues preventing full optimisation of these installations is that there is a **mismatch between the generation and consumption profiles**. Electricity is generated during the day and usually the consumption peaks take place either early in the morning or later in the evening, when there is less solar generation. As a result, large quantities of electricity are injected into the grid at times when demand is low and, in some cases, this is already causing imbalances and problems integrating this additional renewable electricity.

Some Member States have started to address this issue by **prohibiting final customers that produce their own electricity from injecting electricity** into the grid. However, this is **contrary to their right to sell their excess electricity** enshrined in **Article 21(2) of the RED**.

Instead, Member States could create **incentives to optimise the electricity self-consumed** and unlock the demand-side flexibility potential of final customers. There are several ways to do this.

Firstly, Member States could incentivise the **installation of devices that can contribute to the integration of solar PV electricity into the grid**. For instance, they could incentivise **energy storage co-located** with the self-consumption installation, including neighbourhood batteries (see Section 3.1). This hybridisation allows final customers to store the electricity they generate during the day instead of injecting it into the grid, and to use it at a later time, thereby maximising the electricity self-consumed. Final customers could also choose to store the electricity they produce and inject it into the grid at a later time, reducing the issues related to grid constraints and imbalances and potentially receiving a higher payment for the electricity they inject. Another possibility would be to incentivise the installation of **heat pumps** or the sale of **electric vehicles** for final customers that generate and consume their own electricity, including by designing combined support schemes. Interoperability is essential in this regard[415].

Secondly, Member States could create **incentives to encourage final customers to self-consume** the electricity that they generate at the time they generate it, matching supply and demand and reducing the amount of electricity injected into the grid. There are several ways to do this. Member States could **encourage dynamic pricing arrangements** that reward final customers that consume electricity at times when it is abundant. **Spain** has introduced a compensation mechanism for selling excess electricity using dynamic pricing which allows customers to be compensated by a deduction in their energy bill (i.e. net-billing system). **Portugal** has introduced the option of energy sharing based on dynamic management systems, which allow near-real-time management of electricity. This could be coupled with incentives to install **building energy management systems** and **home energy management systems** which allow final customers to manage their self-produced electricity and programme their appliances so that they shift their loads automatically during off peak times . This could contribute to load shifting and has the potential to reduce the

[415] ESA, including EVs, PV inverters and batteries need to exchange interoperability messages with Energy Management Systems (EMS) or the cloud. See: https://ses.jrc.ec.europa.eu/development-of-policy-proposals-for-energy-smart-appliances.

amount of electricity injected into the grid during hours when the sun is shining or increase consumption when there is too much supply.

Thirdly, Member States can help optimise the value of self-consumption **by exposing final customers to time-differentiated or locational network tariffs** that reflect actual system needs. In **Sweden** and **Finland**, final customers that produce and consume their own electricity are exposed to dynamic time-of-use pricing to incentivise consumption or feed-in during peak periods. The Horizon 2020 Invade project is looking to aggregated demand-side management and battery storage to provide support to the grid.

When final customers that produce, consume and sell their self-generated electricity refrain from feeding electricity into the (wider) grid during periods when the grid has sufficient supply, they effectively provide a service to the grid operator. If the incentives described above are implemented, final customers may experience slight financial benefits when carrying out this service. However, **final customers could also receive compensation for the services they provide to the grid**, particularly when facilitated by energy aggregators capable of delivering a wider range of services.

In this regard, **Article 15(2)(a)-(c) of the Electricity Directive** requires Member States to **enable active customers to participate in flexibility schemes either directly or through aggregators**. The Commission is in the process of developing a network code and data interoperability act on demand response to remove regulatory barriers to the participation of final customers and small-scale assets.

In **Italy** the regulatory authority ARERA adopted a comprehensive reform of the rules on dispatching with the aim of implementing incentive mechanisms for parties that contribute to the system's flexibility and open access to a larger number of participants, including small-scale DERs[416]. ARERA has also put in place rules to test the most appropriate regulatory solution for the provision of and payment for local ancillary services and their remuneration on the basis of pilot projects[417].

To allow jointly acting final customers engaged in energy sharing to reap the benefits of the implicit and explicit demand-response incentives outlined above, Member States should **aim to allow for energy sharing based on dynamic management, in near-real time (within minutes or seconds), of consumption of final customers engaged in energy sharing**, with a view to optimising electricity flows on the basis of actual consumption and following implicit or explicit demand-response schemes. In **Austria**, for example, final customers engaged in energy sharing can opt for dynamic energy sharing based on the near-real-time consumption needs of participants[418]. Similarly, in **Portugal**, under specific conditions[419], energy sharing can be based

[416] Delibera ARERA 345/2023/R/2019, Approval of the Integrated Text on Electricity Dispatching (TIDE) - Arera.https://www.arera.it/atti-e-provvedimenti/dettaglio/23/345-23.

[417] Resolution ARERA 352/2021.

[418] See Breakdown – PV community (pv-gemeinschaft.at).

[419] (1) Access to metering data; (2) transparency on energy sharing or applicable sharing keys; (3) interoperability with the network operator's systems.

on dynamic management systems[420] which allow for near-real-time management of electricity[421]. RECs are required to use platforms certified by the regulator to enable dynamic energy sharing in real time among members[422].

Lastly, when shifting towards exposure to market prices and time-differentiated network tariffs in order to help optimise the value of self-consumption, it is important to **communicate the new rules and associated impacts and opportunities in a timely, clear and easy-to-understand manner so as to ensure that final customers can react and adapt to them**.

[420] For example, WattShare and E-REDES.
[421] Article 87(2) and (3) of Decree-Law 15/2022.
[422] See Decree-Law 99/2024.

## SECTION 3: ENSURING A STANDARDISED APPROACH TO ENERGY SHARING

### 1. INTRODUCTION

This section of the SWD aims to clarify the Recommendation on supporting the development of energy communities and maximising self- provide examples of implementation of the articles on the basis of existing national practices. National practices identified are mainly illustrative and are not subject to a qualitative assessment by the Commission.

#### 1.1. LEGAL AND POLICY CONTEXT

**Energy sharing has emerged as a new activity in the energy system** that was first introduced in the Clean Energy for All Europeans package (CEP), applicable to both renewable energy communities (RECs)[423] and citizen energy communities (CECs)[424], as well as jointly acting renewables self-consumers located within the same building, including multistorey apartment buildings[425]. However, the relevant articles do not provide further details on how energy sharing should be defined or arranged.

**Article 2, point (10a), and Article 15a of Directive (EU) 2019/944**, as amended by Directive (EU) 2024/171, provides a harmonised approach across EU Member States to energy sharing between final customers by defining and regulating the activity in more detail and in relation to the concept of 'active customers', as defined in Article 2, point (8), of Directive (EU) 2019/944, as amended by Directive (EU) 2024/171.

**Recital 22 of the EMD** clarifies that the **main objectives of energy sharing** are to:

- create resilience to the effects of high and volatile wholesale market prices on consumers' energy bills;
- empower and engage tenants, flat owners and low-income families facing financial or spatial constraints; and
- help increase the deployment of renewable energy by mobilising additional private capital investment, maximising rooftop solar PV potential and diversifying remuneration pathways for citizens, public bodies and businesses.

[423] Article 22, Directive (EU) 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 (OJ L 328, 21.12.2018, pp. 82–209 ELI: http://data.europa.eu/eli/dir/2018/2001/oj).

[424] Article 16, Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158 14.6.2019, p. 125, ELI: http://data.europa.eu/eli/dir/2019/944/oj).

[425] Article 21, Directive (EU) 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 (OJ L 328, 21.12.2018, pp. 82–209 ELI: http://data.europa.eu/eli/dir/2018/2001/oj).

Moreover, with the integration of appropriate price signals and storage facilities, energy sharing can lay the foundation for citizens and businesses to maximise the value of virtual self-consumption by reaping simultaneous rewards for demand-side flexibility services.

## 2. TERMS AND CONCEPTS

This section explains the terms and concepts used in Article 2, points (8) and (10a), and (11) of Directive 2019/944, as amended by Directive 2024/1711; Article 2, points (14), (15), (16) and (18), of Directive (EU) 2018/2001. Relevant concepts and terms are discussed separately in Section 3.1 for active customers; Section 3.2 for energy sharing; Section 3.3 for energy communities; Section 3.4 for jointly acting renewables self-consumers; Section 3.5 for electricity supply; and Section 3.6 for peer-to-peer trading.

### 2.1. ACTIVE CUSTOMERS

In accordance with **Article 2, point (8), of the Electricity Directive,** '**active customer**' means 'a final customer, or a group of jointly acting final customers, who consumes or stores electricity generated within its premises located within confined boundaries or **self-generated or shared electricity within other premises**, or who sells self-generated electricity or participates in flexibility or energy efficiency schemes, provided that those activities **do not constitute its primary commercial or professional activity**'.

The amendment made by Directive (EU) 2024/1711 to Article 2, point (8), requires Member States to expand the geographical boundary of their national frameworks for active customers to the **electricity generated and shared from premises other than where it is consumed or stored**. The exact scope of the geographical boundary must not go beyond the same bidding zone and may be a more limited geographical area, in accordance with Article 15a(1) Directive (EU) 2024/1711.

In principle, this amendment allows final customers to consume or store at their main residence the electricity generated at their holiday home, for example, or in another place and to virtually[426] self-consume at their main residence electricity generated or stored off-site and shared between active customers or by another active customer.

In **Czechia** independent active customers are allowed to share electricity between their premises located within the same bidding zone[427].

**Article 15a(2) of the Electricity Directive** further clarifies that active customers must not engage in energy sharing if it constitutes their **primary commercial or professional activity**, meaning that active customers must not set up a business for the primary purpose of energy sharing, or final customers must not become an active customer for the primary purpose of selling self-generated electricity.

[426] In other words, the administrative matching of production (injection into the grid) and consumption (withdrawal from the grid) within the imbalance settlement period. See recital 24 EMD.

[427] 469/2023 Coll., 1 January 2025, current wording, informative text of the e-Collection system

In **Latvia**, for example, the new Electricity Market Law requires energy communities engaged in energy sharing to self-consume at least 80% of the self-produced electricity fed into the grid. Where this is less than 80%, at least 51% of the profits made must be allocated to the operational purposes of the energy community[428].

Beyond self-consumption, active customers **retain the right to sell their surplus electricity or provide flexibility or energy efficiency services**, in accordance with Article 15 of the Electricity Directive.

Depending on the set-up in the Member State, any surplus self-generated electricity (that is not shared) will be credited either to the metering point of the generation or storage facility used for energy sharing or to the receiving final customers.

In **the Netherlands**, for example, irrespective of whether the assigned volume is self-consumed, the electricity injected by the facility used for energy sharing will be accounted for at the billing and metering point of the final customer in compliance with a pre-defined allocation method. The customer will have to conclude a buy-back contract with their retail supplier. Similarly, in **Croatia**, surplus electricity that is not shared within a CEC is allocated to the accounting point of the individual shareholders or members of the CEC[429]. Such systems can help improve forecasting and reduce imbalance costs of residual suppliers.

### 2.2. ENERGY SHARING

**Article 2, point (10a), of the Electricity Directive defines 'energy sharing'** as 'the self-consumption by active customers of renewable energy either:

- generated or stored off-site or on sites between them by a facility they own, lease or rent in whole or in part;
- the right to which has been transferred to them by another active customer for a price or free of charge'.

The definition in Article 2, point (10a), of the Electricity Directive clarifies that there are **two pathways** for final customers to obtain the right to access or use a generation or storage facility for the purpose of self-consumption: collective energy sharing and peer-to-peer energy sharing.

**Both models essentially enable final customers to self-consume off-site-generated or -stored electricity injected into the grid, as if the generation or storage facility was located on their premises.**

**Recital 24** clarifies that this pertains to the **'virtual' self-consumption of electricity** injected into the grid, i.e. the **administrative** matching of production (injected into the grid) and consumption (withdrawn from the grid) within the same imbalance settlement period. Energy sharing is thus

[428] Paragraphs 36 and 37 of Regulation No 808; Energy Law, Article 17.1.
[429] Article 26(22) of the Law on the Electricity Market.

**different from distribution, as defined in Article 2 (28) of the Electricity Directive, where electricity is transported**.

On the basis of **Article 15a(2) of the Electricity Directive,** energy-sharing arrangements **may be organised either via legal entities**, such as renewable and citizen energy communities, **or through contractual agreements and internal rules**.

The definition in **Article 2, point (10a), Electricity Directive and the accompanying recitals** clarify that energy sharing concerns the sharing of **renewable energy-based electricity** originating from generation or storage facilities of active customers.

**Storage facilities** may also be used for energy sharing where the self-generated electricity is stored on site, or alternatively off-site (e.g. in the case of neighbourhood batteries) where the origin can be traced back to renewable energy through **guarantees of origin**, as laid down in Article 19 RED. In this regard, Article 19(2)(ii) of the RED provides that small installations of less than 50 kW and RECs may benefit from **simplified registration processes and reduced registration fees**.

Member States may also decide to mirror the approach for zero-emission buildings in Article 11(7) EPBD and allow for **renewable electricity generated nearby or provided by RECs**. Storage in combination with solar PV installations in general may be considered a key component to optimise the value of energy sharing.

### 2.3. COLLECTIVE ENERGY SHARING

**Article 2(10a)(a) of the Electricity Directive on collective energy sharing enables a group of final customers and energy communities to self-consume, within the imbalance settlement period, electricity injected into the grid by a generation or storage facility that they collectively lease, rent or own.**

By obtaining rights to a facility on the **basis of a lease, rental or co-investment agreement**, final customers can set up a legal entity, such as an energy community, in order to pool investments or access full or partial rights to a generation or storage facility owned by another active customer. For example, a lease agreement would set out the rights and responsibilities of the lessor and the lessee in relation to the energy produced, maintenance performance standards, etc., and the leasehold could relate to a share of a facility or elements of a facility. **Those elements could be similar to those applying to 'timeshare' arrangements for property**[430].

In the case of collective ownership, Member States **may decide to allow jointly acting active customers and energy communities to charge a price for shared electricity** in addition to a lease or rental fee[431]**.** Such a price may be charged per kilowatt-hour of shared electricity, as is already allowed for energy communities in Member States such as **Czechia** and **Austria**.

[430] See Lease and easement agreement GEA – Energy communities and GEA lease agreement – Energy communities.

[431] For example, an annual fee for maintenance, insurance and tariffs, or a price per kilowatt-hour to recover the cost of production.

### 2.4. PEER-TO-PEER ENERGY SHARING

**Peer-to-peer energy sharing, as defined by Article 2(10a)(b) of the Electricity Directive, enables final customers to self-consume, within the imbalance settlement period, electricity injected into the grid by a generation or storage facility of another active customer.**

By obtaining rights to a facility of another active customer on the **basis of an energy-sharing agreement**, a final customer can obtain the right to self-consumption, for a price or free of charge, from another active customer, rendering the latter an 'active' final customer within the meaning of Article 2, point (8), of the Electricity Directive. **Remuneration for peer-to-peer energy sharing is allowed** and may include a price per kilowatt-hour.

In **Belgium** active customers are allowed to engage in peer-to-peer energy sharing, for a price or free of charge, within the Brussels Capital Region[432]. According to the regulator, there are currently over 80 projects active with over 160 participants and over 5.4 MWp of shared renewable electricity[433]. In **Brussels (Belgium)**, for example, the social housing company Foyer du Sud installed solar panels on the rooftop of a social housing unit. Surplus electricity that is not self-consumed at the collective meter is shared with the tenants[434]. In **Austria** energy communities are often structured around individual final customers that share their surplus generated electricity with other final customers for a price per kilowatt-hour[435].

It follows from the definition[436] that such a transfer of the right to self-consumption includes energy sharing **between a single active customer and multiple final customers** (i.e. multiple final customers can be linked to a single generation or storage facility).

**Multiple active customers can also share electricity with a single final customer**, provided that there are multiple metering and billing points at the connection point of that final customer, in accordance with Article 4 of the Electricity Directive.

### 2.5. ENERGY COMMUNITIES

**Recital 23 of the EMD** clarifies that both renewable[437] and citizen[438] energy communities should be considered **a form of energy sharing in which jointly acting final customers organise themselves through a specific type of legal entity** that owns the generation or storage facilities used for the purpose of sharing energy with its members[439].

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[432] Brugel – Échange de pair à pair / Peer-to-peer handel.

[433] Brugel – Cartographie/Cartografie.

[434] s unsud_vlo_pilote – Foyer du Sud.[434] sunsud_vlo_pilote – Foyer du Sud.

[435] See, for example, Bürgerbeteiligung – EEG-Hengist+.

[436] The definition refers to 'active customer**s**' to which the right to self-consumption has been transferred.

[437] Article 22(2)(b), Directive (EU) 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 (OJ L 328, 21.12.2018, pp. 82–209 ELI: http://data.europa.eu/eli/dir/2018/2001/oj).

[438] Article 16(3)(e), Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158 14.6.2019, p. 125, ELI: http://data.europa.eu/eli/dir/2019/944/oj).

[439] Energy communities are covered by the definition in Article 2, point (10a)(a), in the case of community ownership of facilities used for the purpose of energy sharing.

Energy communities are, as such, a specific a way of organising final customers through a legal entity in a democratic and fair manner around activities beyond energy sharing alone, such as aggregation, supply, flexibility and energy efficiency services.

Renewable and citizen energy communities are effectively controlled by natural persons, SMEs or local authorities, and their primary purpose is to provide social, economic or environmental benefits to the members of that community, shareholders or the territory in which the community operates. Final customers may set up an energy community for several reasons, including a desire for democratic governance and to share community benefits beyond lower energy bills[440], as well as conditions and incentives provided in the national enabling and supporting framework.

Energy communities will often operate as **an internal energy-sharing organiser** on behalf of jointly acting final customers. They may be responsible for setting up, explaining and managing energy-sharing arrangements. They may also facilitate peer-to-peer energy sharing between individual members or shareholders.

**Article 15a of the Electricity Directive puts in place minimum harmonisation rules on how renewable electricity sharing can be arranged within renewable and citizen energy communities.**

Energy communities have been granted the right to share with their members renewable electricity from installations in community ownership[441].

Member States may also wish to **allow large enterprises within a CEC to share surplus electricity**, provided that the enterprise complies with the minimum harmonisation conditions imposed by Article 15a(5) of the Electricity Directive, i.e. up to 6 MW installed capacity per generation or storage facility and within a limited geographical area. The restriction on large enterprises imposed by that article does not prevent citizen energy communities from sharing with their members, including large enterprises, renewable or non-renewable energy from an installation with an installed capacity of more than 6 MW that is owned by a CEC.

Where energy communities operate as a third-party energy-sharing organiser, they will be subject to the conditions laid down in Article 15a(3) of the Electricity Directive (see Section 4.3).

### 2.6. JOINTLY ACTING RENEWABLES SELF-CONSUMERS

**Energy sharing in Article 21(4) of the RED should be interpreted in accordance with Article 15a of the Electricity Directive.**

**Article 21(4) of the RED** empowers jointly acting renewables self-consumers located in the same building, including multi-apartment blocks, to arrange sharing of renewable energy produced on their site or sites between themselves.

[440] For example, on the basis of a centralised collection of revenues from the sale of surplus electricity that is not shared.

[441] Article 16(3), point (e), Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158 14.6.2019, p. 125, ELI: http://data.europa.eu/eli/dir/2019/944/oj).

As 'renewables self-consumer' is defined in Article 2, point (14) of the RED as a final customer within the meaning of Article 2, point (3) of the Electricity Directive, Article 21(4) of the RED grants the right to all types of final customers, including household and non-household customers. **However, the provision does not define or regulate the activity of energy sharing any further.**

**Article 2, point (10a), and Article 15a of the Electricity Directive**, defines and gives details of energy sharing within multi-apartment buildings, imposing further restrictions on the participation of large enterprises in energy sharing, including an installed capacity limit of 6 MW for energy-sharing installations.

**Existing extended or collective self-consumption schemes regulated at national level can co-exist with or be incorporated within the framework for energy sharing**.

Beyond multi-apartment buildings, some Member States[442] have voluntarily put in place enabling conditions for the **extended or collective self-consumption of electricity above building level**[443]. They often deploy different systems in terms of the roles and responsibilities of system operators, suppliers and final customers[444], geographical boundaries[445] and time intervals for the balancing and settlement of shared electricity[446]. All these schemes have in common that they pertain to **virtual rather than physical self-consumption, similar to energy sharing** as defined in Article 2, point (10a), of the Electricity Directive. This means that the electricity is injected into the grid and the self-consumption is the administrative matching of production (injected into the grid at one point in time) and consumption (withdrawn from the grid at another).

These developments have allowed a series of innovative practices to emerge, such as the joint ownership or leasing, by active consumers and communities, of generation or storage facilities for collective self-consumption within a confined geographical area[447]. All these schemes flourished during the energy crisis as they helped stabilise and reduce the energy bills of consumers by decoupling their energy supply from wholesale market volatility.

**Recital 22 of the Directive 2024/1711 Directive** clarifies that the provisions on energy sharing complement the provisions on self-consumption laid down in Article 21 of the RED and in Article 15 of **the Electricity Directive**, in particular with respect to collective self-consumption. Existing extended or collective self-consumption schemes can thus continue to exist alongside electricity sharing.

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[442] Article 2, point (14), Directive (EU) 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 (OJ L 328, 21.12.2018, pp. 82–209 ELI: http://data.europa.eu/eli/dir/2018/2001/oj).

[443] Such as Belgium, Czechia, Greece, Italy, Latvia, Luxembourg, Austria, Portugal and Slovenia.

[444] In France, Luxembourg, Austria and Portugal, for example, the system operator is responsible for deducting metering data within the imbalance settlement period, while in Greece the deduction of metering data occurs monthly.

[445] In Belgium, Luxembourg and Austria, energy sharing can occur throughout the country.

[446] In France, Luxembourg, Austria and Portugal, for example, the system operator is responsible for deducting metering data within the imbalance settlement period, while in Greece the deduction of metering data occurs monthly.

[447] See Spain, France and Portugal.

Member States may, however, also decide to merge or align these virtual self-consumption schemes with energy sharing. **Member States should be mindful in this regard that existing collective self-consumption schemes may differ from the minimum harmonisation rules on energy sharing,** namely in terms of:

- eligible participants (active customer versus producer/supplier);
- data-management approach (customer-centric versus supplier-centric);
- maximum installed capacity limits for large enterprises and third-party investors (6 MW versus no installed capacity cap).

### 2.7. ELECTRICITY SUPPLY

**'Electricity supply' relates to the commercial sale of electricity by a wholesale customer to final customers that purchase the electricity for their own use.**

'Energy sharing' is the virtual self-consumption of generated or stored electricity shared within a group of final customers (e.g. an energy community) or between individual final customers, without the involvement of a traditional electricity supplier.

'Supply' is defined in **Article 2, point (12), Electricity Directive** as 'the commercial sale or resale of electricity by a supplier to a customer'. 'Energy sharing', by contrast, is the virtual self-consumption of off-site-generated or -stored electricity by jointly acting active customers whose participation in energy sharing is not their primary commercial or economic activity.

In order to close any loopholes for alternative commercial supply routes, **Article 15a of the Electricity Directive puts in place several safeguards to distinguish energy sharing from commercial supply,** in particular:

- an installed capacity cap of 6 MW for third-party-owned facilities (Article 15a(3) of the Electricity Directive);
- the application of consumer rights in terms of basic contractual rights, switching and billing in Articles 10, 11 and 18 Electricity Directive when a third-party energy-sharing organiser is responsible for billing and contracting (Article 15a(3) of the Electricity Directive);
- the allocation of energy-sharing rights to final customers that either have full or partial access to a facility on the basis of property titles or use the facility of another active customer on the basis of a trade agreement (Article 2, point (10a), and Article 15a(1) of the Electricity Directive); and
- the requirement that the participation in energy sharing by an active customer does not constitute the primary commercial or professional activity of active customers engaged in energy sharing (Article 15a(2) of the Electricity Directive).

**The right to energy sharing is granted to active customers only**, and not to a third-party organiser. As such, a third-party energy-sharing organiser has only a supporting role, and not a decision-making role. The organiser should not be able, without the instructions of an active customer, to make decisions on the sharing of electricity with the grid or on how electricity is used.

A third party may, however, facilitate and support the decisions made by active customers by helping them with investments in generation or storage facilities or by carrying out administrative or technical tasks, such as the contracting and billing of shared electricity on their behalf. In accordance with Article 15a(2) of the Electricity Directive, active customers may participate in energy sharing only where this does not constitute their primary commercial or professional activity.

### 2.8. PEER-TO-PEER TRADING

**Peer-to-peer electricity sharing can be executed and settled using peer-to-peer trading platforms.**

**Peer-to-peer trading** is defined in **Article 2, point (18), RED** as 'the sale of renewable energy between market participants by means of a contract with pre-determined conditions governing the automated execution and settlement of the transaction, either directly between market participants or indirectly through a certified third-party market participant, such as an aggregator. The right to conduct peer-to-peer trading shall be without prejudice to the rights and obligations of the parties involved as final customers, producers, suppliers or aggregators'.

**Peer-to-peer energy sharing is distinct from peer-to-peer trading** insofar as:

- it is limited to a specific type of market participants, i.e. active customers;
- it concerns extended self-consumption instead of the sale of renewable electricity;
- the financial settlement is not necessarily automated;
- it concerns renewable electricity only; and
- the conditions and requirements in Article 15a of the Electricity Directive apply.

**Recital 23 of the EMD** clarifies that where private and public peer-to-peer trading platforms start to emerge, they **may also accommodate peer-to-peer energy sharing**. Using blockchain technology or other digital platforms, active customers can offer the use of their generation or storage facilities for the purpose of self-consumption, while other final customers can anonymously choose to procure the right to self-consumption on the basis of their preferences and needs.

### 2.9. AGGREGATION

**A third-party energy-sharing organiser can operate as an aggregator by managing the loads and electricity generated within an energy-sharing scheme in a way that provides flexibility services in relevant electricity markets.**

**Article 15a(3) of the Electricity Directive** provides that active customers may appoint a third party as an energy-sharing organiser for the purpose of providing support for managing and balancing behind-the-meter flexible loads, distributed renewable energy generation and storage facilities that are part of the relevant energy-sharing arrangement.

Such third-party energy-sharing organisers may operate as an aggregator when managing the loads or generated electricity for sale, purchase or auction in any electricity market, in accordance with Article 2, point (18) of the Electricity Directive.

In **Sweden** an energy-sharing organiser is helping to build a residential community in Brobyholm, integrating the smart and automated management of assets such as EV chargers, storage systems, solar inverters, heat pumps and smart appliances with the aim of optimising the value of local renewable electricity sharing[448].

## 3. FRAMEWORK FOR ENERGY SHARING IN ARTICLE 15A OF DIRECTIVE (EU) 2024/1711

The following paragraphs will be grouped in accordance with the relevant dimensions of energy sharing, including (Section 4.1) eligible final customers; (Section 4.2) geographical scope; (Section 4.3) energy-sharing organisers; (Section 4.4) operationalising energy sharing; (Section 4.5) settlement of applicable charges and taxes; (Section 4.6) supplier obligations; (Section 4.7) consumer rights; (Section 4.8) the involvement of energy-poor and vulnerable customers; and (Section 4.9) monitoring obligations of NRAs.

### 3.1. ELIGIBLE FINAL CUSTOMERS

**Article 15a(1) of the Electricity Directive** grants the right to energy sharing to natural persons, SMEs and public bodies operating as active customers. Member States may, where they so wish, expand this to include other categories of customers, such as large enterprises or non-governmental organisations.

**Bodies governed by public** law are defined in Article 2, point (4), of Directive (EU) 2014/24 on public procurement as having the following characteristics:

- (i) they are established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character;
- (ii) they have legal personality;
- (iii) they are financed, for the most part, by the State, regional or local authorities, or by other bodies governed by public law; or are subject to management supervision by those authorities or bodies; or have an administrative, managerial or supervisory board, more than half of whose members are appointed by the State, regional or local authorities, or by other bodies governed by public law. This may thus include public hospitals, schools, associations of municipalities, or regional agencies.

'**SMEs**' should be interpreted in accordance with the Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises[449].

In those cases **where large enterprises are allowed** to participate in energy-sharing schemes, Member States are required to apply the conditions in **Article 15a(5) of the Electricity Directive**,

[448] Next Generation Smart Community to Pioneer Energy-Efficient Living | News centre | ABB.
[449] Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises.

i.e. the size of the generation facility associated with the energy-sharing scheme operated by the large enterprise must not be greater than 6 MW and the geographical area for energy sharing must be limited, meaning that it must be smaller than the bidding zone.

### 3.2. GEOGRAPHICAL SCOPE

In accordance with **Article 15a(1) of the Electricity Directive,** Member States should ensure that **active customers can share electricity within the same bidding zone or a more limited geographical area**.

The broadening of the geographical scope is reflected in the definition of active customers in Article 2, point (8) of the Electricity Directive, which allows final customers to virtually self-consume shared electricity generated or stored within other premises located within the same bidding zone or within a more limited geographical area. **Member States are free to determine the geographical scope of energy sharing, provided that it extends beyond the same (multi-apartment) building.** However, they shall ensure that active customers participating in energy sharing are informed of any restrictions to the geographical scope and any changes thereof accordingly in line with **Article 15a(4)(g) of the Electricity Directive.**

**Article 15a(5)(b) of the Electricity Directive provides a further geographical limitation if large enterprises are allowed to participate** in energy sharing.

**Approaches to defining the geographical scope vary between Member States** from grid topology (e.g. MV/LV transformer stations or substations) to administrative boundaries (e.g. provinces, regions or municipalities), specific distances (e.g. a 2-20 km radius) or electricity markets (e.g. within the same bidding zone). The geographical scope should be determined by the policy objectives set for energy sharing at national level, e.g. to promote social acceptance, to contribute to cost-effective use of available grid capacity[450] and/or to ensure that a wider group of consumers have access to affordable renewable energy.

Member States should consider the factors listed below when deciding on the geographical scope of energy sharing.

- RES potential in rural areas can be balanced with demand in cities;
- A wide and diverse pool of consumers, including those with higher, more predictable consumption profiles (such as SMEs and public buildings) can join an energy-sharing scheme to help optimise self-consumption; and
- There are economies of scale and equal access for all consumers[451].

**A combination of the bidding zone and financial incentives based on grid topology or local ownership** can be an effective way of reaping the system, consumer and societal benefits of energy sharing, where relevant.

[450] An increasingly congested grid and rising imbalance costs may, however, hamper the deployment of energy sharing at bidding zone level, although this is due mainly to the integration of distributed renewable energy generation, rather than to the administrative arrangement of energy sharing between final customers.

[451] Consumers sharing cheap renewable electricity? It's possible, if EU really wants to – Euractiv.

In **Austria**, for example, energy sharing is allowed across the country, with financial incentives[452] provided in accordance with grid topology.

Where Member States decide to enable energy sharing within a more limited geographical area than the bidding zone, they should consider the location of the generation or storage facility and the local context (urban / densely populated areas versus rural / sparsely populated areas) in order to ensure **sufficient flexibility** in terms of geographical scope.

In **France** a derogation has been made for collective self-consumption, allowing the 2 km radius between the most distant participants to be increased to 10 km in urban areas and 20 km in rural areas. Similarly, in **Portugal** the 5 km radius for energy sharing in urban areas has been extended to 10 km in low-density areas[453].

### 3.3. ENERGY-SHARING ORGANISERS

#### 3.3.1. Third-party services

Active customers may choose to make use of an '**energy-sharing organiser**' to facilitate their engagement in energy sharing and help maximise its value through demand response and storage. Such energy-sharing organisers may be a third party, as laid down in **Article 15a(3) of the Electricity Directive**, or an internal participant or representative legal entity, such as an energy community. It follows from the 'may' clause in Article 15a(3) of the Electricity Directive that **active customers should not be obliged to go through a third-party energy-sharing organiser**.

**Article 15a(3) of the Electricity Directive clarifies that a third-party energy-sharing organiser may perform various tasks**: helping to communicate relevant data or information about the energy-sharing arrangements to the single point of contact and relevant market participants and their balance responsible parties; contracting and billing shared electricity; providing flexibility services through the management and balancing of behind-the-meter flexible loads, distributed renewable energy generation, and storage facilities; and installing and operating generation or storage facilities used for the purpose of energy sharing.

The list of services that may be provided by a third-party energy-sharing organiser is **non-exhaustive and may be further extended by EU Member States**.

In **Austria**, for example, the service provider So-Strom's software helps the Margarethen-Lebring energy community with the administration and billing of energy volumes[454]. In **Portugal** Cleanwatts helps set up local energy-sharing schemes at zero upfront investment costs for the

[452] Grid tariff discount of 57% for LV grid usage and no grid tariff discount when an LV, MV and HV grid is used.
[453] EC Facility – Country fiche Portugal
[454] See energy4allproject.eu/pilots/st-margarethen-lebring-at/ and (Easily manage and bill the energy community - So-Strom).

participating community[455]. In **Lithuania** it is possible to buy capacity in solar parks developed, operated and maintained by a third party, for which the third party charges a service fee[456].

In principle, suppliers, aggregators and other types of service provider may act as a third-party energy-sharing organiser. **Member States may also decide to designate a public third-party energy-sharing organiser** to assist active customers in setting up energy-sharing projects. In **Brussels (Belgium)**, the government has appointed a public administrative body[457] to promote and support energy-sharing projects[458].

### 3.3.2. The role of suppliers

**Making suppliers responsible for deducting shared electricity from total metered consumption risks reducing the financial benefit of energy sharing for final customers.**

**Suppliers can, however, develop new business models that offer energy-sharing services to final customers**, provided that this does not form a loophole through which commercial supply obligations may be circumvented (*see Section 3.5 and Subsection 4.7.4*).

In several Member States, **such as Spain, Italy and Portugal**[459], energy suppliers have started taking up the role of third-party investors/operators and energy-sharing organisers assuming investment, maintenance and operation, contracting and billing responsibilities for solar PV generation facilities installed on the premises of a final customer. In **Portugal** suppliers[460] install solar energy generation facilities on final customers' premises, allowing the final customer to self-consume their electricity at a fixed price per kilowatt-hour. They also take care of the administration (e.g. contracting and billing) associated with sharing any surplus electricity with other final customers[461]. Contracts are for one year and are renewed automatically every year. Final customers can get out of their contract at any time, without incurring any penalty[462].

Where a commercial supplier facilitates energy sharing by offering bundled packages that include management or ownership of the production or storage facility used for energy sharing, along with a price for the shared electricity, Member States and their natural regulatory authorities should **carefully monitor compliance with the conditions for engaging in energy sharing**.

[455] See Shaping the Future of Sustainable Energy – Cleanwatts.
[456] Lithuania: Consumer platform for purchasing solar energy in remote PV plants.
[457] How do you start an energy sharing project in Brussels? - Sibelga;https://www.sibelga.be/nl/aansluitingen-meters/duurzame-energie/energiedelen/hoe-energiedelen-starten Partage et Communautés d'Énergie | Citoyen – Bruxelles Environnement.
[458] Ibid.
[459] For example, EDP in Portugal and Enel in Italy.
[460] EDP, Greenvolt.
[461] This is operationalised by the back-end energy management system of the system operator.
[462] Such schemes can fit into the framework for the right to energy sharing, provided that the installed capacity of the facility does not exceed 6 MW and that final customers engaged in energy sharing can switch service provider and have access to fair and transparent contractual terms and conditions and transparent billing information, in accordance with Article 15a(3) EMD and Articles 10, 12 and 18 of the Electricity Directive.

In **Spain and Italy**[463], for example, some suppliers provide offers that enable consumers to virtually benefit from energy generated by a solar installation facility not located on the premises of an active customer, by subscribing to a monthly fee based on the capacity of the facility. Given that no property titles to the facility can be acquired by final customers and that the facility is not located on the premises of another active customer, such schemes may not be considered to qualify as an energy-sharing arrangement.

In addition, Member States and their national consumer-protection authorities **should ensure that suppliers do not use unfair or misleading selling methods to market their services as 'energy sharing'**, in accordance with Article 10(8) and Article 59(1)(b) of the Electricity Directive and the Article 6 of **Directive 2005/29/EC**[464] concerning misleading action[465].

### 3.3.3. Internal energy-sharing organiser

Some Member States, such as Belgium (Brussels), France and Portugal, require energy-sharing groups to **designate an energy-sharing representative or manager as an internal organiser** for active customers and interface for the authority responsible for data management.

An internal energy-sharing organiser may be an active customer that is part of the energy-sharing arrangement and acts on behalf of other active customers. Where a group of jointly acting active customers has set up **a legal entity or an energy community**, that legal entity or energy community may function as an internal energy-sharing organiser.

**In Flanders (Belgium)** the energy community can register as a 'community manager' and is responsible for sending relevant data to the DSO[466]. Similarly, in **Portugal** the self-consumption management entity may be an individual or a legal entity, including an energy community appointed by the jointly acting final customers to carry out acts on their behalf[467].

A mandatory internal energy-sharing organiser can help define the internal energy-sharing arrangements, navigate the administrative procedures and smooth and streamline the exchange of information with system operators and internal coordination with energy-sharing participants.

In **France**, for example, the participants in collective self-consumption come together within the same legal entity called the 'PMO' to share local electricity production. The PMO is responsible for signing the agreements, setting the amount of electricity to be shared, processing participants

[463] FSR study: Eni Plenitude – offer 'Adotta un pannello' and Endesa – offer 'Virtual Solar Tariff'.

[464] Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council (Unfair Commercial Practices Directive), http://data.europa.eu/eli/dir/2005/29/2022-05-28.

[465] Article 6: 'A commercial practice shall be regarded as misleading if it contains false information and is therefore untruthful or in any way, including overall presentation, deceives or is likely to deceive the average consumer, even if the information is factually correct, in relation to one or more of the following elements, and in either case causes or is likely to cause him to take a transactional decision that he would not have taken otherwise.'

[466] 'The community manager can be a natural or legal person, or one of the participants in energy sharing or a third party.' See the Protocol on Sharing and Selling Self-generated RES-E, Section 6.1.2.

[467] Article 86(3) of Decree-Law 15/2022.

joining and leaving the agreements and managing the relevant metering data. Similarly, in **Portugal** final customers participating in energy sharing must designate a self-consumption management entity to represent them before relevant market actors, administrative bodies and system operators. The management entity is responsible for: (i) the connection to the grid; (ii) the operational management of energy sharing; (iii) notifying energy-sharing arrangements, including allocation methods, to the DSO; and (iv) the relationship with traders selling surplus electricity not self-consumed by the energy-sharing participants within the imbalance settlement period[468].

#### 3.3.4. Third-party ownership

**The final paragraph of Article 15a(3) of the Electricity Directive** further clarifies that any type of third party may also own or manage a generation or storage facility used by active customers for energy sharing, provided that the facility does **not exceed the installed capacity limit of 6 MW for each individual storage and generation facility**. The cumulative capacity may thus be above 6 MW.

**A 'third party' is a party other than the final customer engaged in energy sharing**. It is, however, possible that an energy-sharing organiser will both manage a facility and at the same time be an active customer participating in energy sharing in relation to that facility. Where the energy-sharing organiser is an active customer involved in the energy-sharing scheme, the installed capacity limit of 6 MW does not apply.

The purpose of Article 15a(3) of the Electricity Directive is to close the potential loophole through which a third party (e.g. retail suppliers or investment companies) could use a large-scale RES generation facility to share electricity at the scale of commercial energy supply without being subject to any supplier obligations.

To further guard against such practices, Member States may decide to extend the requirement in Article 21(5) RED for third-party investors to be **subject to the instructions of active customers engaged in energy sharing**. This would prevent the third party from making decisions, without the consent of the renewables self-consumer, on the sale of electricity to the grid or on how electricity is used.

In **Austria**, for example, the legislator applies a definition of economic ownership, focusing on the asset's control and actual use and allowing for leasing and contracting models[469].

### 3.4. OPERATIONALISING ENERGY SHARING

In order to operationalise energy sharing, system operators or other designated bodies must put in place a registration point for energy-sharing arrangements and provide the necessary IT infrastructure to manage energy-sharing metering data. This will ensure that the total metered consumption is reduced in proportion to the shared electricity, following the applicable allocation

[468] Article 86(2) of Decree-Law 15/2022.
[469] Gutschi, 2023.

method. Final customers engaged in energy sharing should be able to settle payments on the basis of the shared metered electricity.

In accordance with **Article 15a(4) and (6) of the Electricity Directive,** Member States shall put in place an enabling framework that provides[470]:

- a single point of contact to provide information about energy sharing and register energy-sharing arrangements;
- a data management system to collect, allocate, deduct and communicate relevant metering data; and
- settlement of applicable network tariffs, levies and taxes.

Such an enabling framework allows energy-sharing agreements to be validated, results to be calculated and recorded and financial settlements to be completed.

In **Austria**, for example, energy sharing is operationalised as follows:

- The network operator determines the billing values by recording the electricity produced by the off-site generation facility every 15 minutes. The network operator reads out the following measured values: (i) the consumption readings of the individual participants; (ii) the generation reading of the off-site generation facility; and (iii) the (static or dynamic) energy-sharing key.

- The network operator then assigns the generation quantities to the participants on the basis of the sharing key within a 15-minute period and offsets those quantities against the respective consumption.

- The resulting consumption data are then passed on to the energy supplier for further billing. As a result, energy billing by the supplier is based only on net electricity use (after off-site-generated electricity has been deducted from participants' total consumption). Each participant's generation and self-consumption readings are passed on to the generation facility operator for internal settlement. The settlement is based on contractual agreements between the generation facility operator and the participants.

Austria has had a **national energy data space** up and running since 2012. The data stay as close to the source as possible and are exchanged in a decentralised and highly standardised manner. The digital operationalisation of energy sharing between active customers has led to over 1 000 active energy communities.

The operationalisation of energy sharing is largely governed by Article 15a(4)(a) and (6) of the Electricity Directive and will be discussed in the following sections: (Section 4.4.1) point of contact; (Section 4.4.2) data management; and (Section 4.4.3) settlement of applicable network tariffs and charges, taxes or levies. In accordance with Article 15a(6) of the Electricity Directive, the system operator(s) or another designated body, as part of a point of contact, is (are) responsible for the first two steps outlined above.

### 3.4.1. Point(s) of contact

[470] Multi-supplier models and decentralised energy systems – Energy sharing approaches, Aliene van der Veen et al.

**The point(s) of contact for energy sharing should be accessible to the public and allow relevant information to be communicated for the operationalisation of energy sharing.**

The point of contact should provide publicly available information on energy sharing to final customers, register the energy-sharing arrangement and decide, on the basis of the information provided by the active customers or energy-sharing organiser, whether the allocation method (or energy-sharing keys) agreed upon can be implemented in the light of the geographical scope and metering requirements.

The activities of the point of contact outlined in Article 15a(6)(b) of the Electricity Directive **can be delegated to one or more competent authorities**. Where multiple contact points exist, it is recommended that a single entity is responsible so as to ensure a harmonised approach[471].

In Member States such as Belgium, France, Luxembourg and Portugal, the main functions of the point of contact are allocated to the system operator. In **Italy** the party responsible for data management is a public company[472] and the single point of contact is the system operator. In **Austria** the contact point is designated through the EDA platform and the DSOs, which provide registration support, practical guidance and validation processes[473].

The following **design principles** may be considered for the point(s) of contact:

- **neutrality** (managing entity acts in a neutral and independent way);
- **accessibility** (centralised and harmonised information in a digital format while streamlining the process);
- **clear communication** (information should be clear, concise and simple with jargon-free language, visual aids and interactive elements, including FAQs and dedicated customer support); and
- **dynamic and collaborative** (engage and collaborate with network operators, energy suppliers, regulators, local authorities and energy communities to set up the information framework)[474].

**The single point of contact is different from the third-party energy-sharing organiser.** The latter is private actor that provides services for final customers engaged in energy sharing, including the communication of relevant information on the internal energy-sharing arrangements to the single point of contact in order to operationalise or activate energy sharing (e.g. the identifiers of the relevant metering points, the role of each participant, the relevant sharing agreements, the type and nature of the allocation method).

**Where a public energy-sharing organiser is designated, it should be complementary to the point of contact.** In any case, the appointment of a point of contact does not prevent energy-sharing organisers from providing information to final customers.

[471] Consumer working group.
[472] GSE - Energy Services Manager | Homepage
[473] Energy-sharing country fiche – AT.
[474] Consumer working group.

*Information on energy sharing*

**Providing practical information on the why, where and how of energy sharing through the point of contact ensures that final customers can make a well-informed decision on whether to engage in energy sharing.**

The information on energy sharing **can be provided on a simple website or webpage.** In **Flanders (Belgium)**, for example, basic information on energy sharing is provided on the website of the Flemish DSO[475].

A point of contact may also consist of **hands-on services and tools with dedicated staff and a personal help desk or consultation options.**

In **Luxembourg** a separate public body, the Climate Agency, is designated as the point of contact and provides help and information for different stages of different models of energy sharing[476]. In addition, the regulator has put in place the We Share Energy platform[477] to allow a simulation of energy sharing and test the rules according to which electricity is shared. In **Portugal** the national energy agency, ADENE, works with other energy agencies and local agents to provide support and promote self-consumption, including by training and providing information to interested parties. More specifically, ADENE provides: (i) guides, manuals and other sources of information about the procedures for engaging in energy sharing and the deadlines to be met; (ii) a simulation tool for analysing the technical and economic feasibility of developing energy sharing; and (iii) a dedicated support line for parties interested in energy sharing[478]. In Catalonia (**Spain**) L'Electra – Elecsum operates a digital platform that allows participants to see their data and calculate both the amount of energy they are saving each month and the payback period[479].

Where there are location-based price incentives in place for energy sharing, **transparent information on the geographical area within which financial incentives are applicable should be provided by the competent authority in charge**.

In **Italy**, for example, DSOs are invited to publish the perimeter of their low-voltage substations. This requires them to draw up and provide access to the maps showing those perimeters of substations.[480].

Furthermore, **information on available grid capacity** within the geographical area can be provided, as is done in **Austria**, where an interactive map provides real-time data on available capacity across distribution substations[481].

[475] Sharing energy with your digital meter | Fluvius.
[476] Klima-Agence: energy advisor | Sustainable energy transition – Klima-Agence.
[477] Software – We Share Energy.
[478] Article 90(1) and (2) of Decree-Law 15/2022.
[479] ECR barriers and action drivers report.
[480] Article 32(b) of Legislative Decree 199/2021 and Article 14 of Legislative Decree 210/2021.
[481] Available Grid Connection Capacities - EbUtilities.

To ensure that final customers are adequately informed and guided throughout the process of setting up energy-sharing arrangements, the contact point should be **fully digitalised and have the following features** so that interested parties are adequately informed:

- information page (what, why, where and how of energy sharing);
- help desk (call centre, information form, FAQs);
- list of operational energy-sharing organisers;
- legal and practical information;
- tools to assess economic feasibility and simulate energy sharing[482];
- technical requirements, including applicable charges and boundaries and grid capacity maps; and
- voluntary template contracts (in accordance with Article 15a(4)(d) of the Electricity Directive)[483].

***Registration of energy-sharing arrangements***

Energy-sharing arrangements may consist of the following information:

- the type of energy sharing (peer-to-peer or collective) and underlying agreements;
- the location and/or metering points of the final customers involved (and any changes in this regard); and
- the energy-sharing key (or calculation method).

To help streamline the process of validating energy-sharing arrangements, responsibility for registering the arrangement can best be assigned to the party responsible for data management.

In **Flanders (Belgium)**, the DSO has put on its website a registration interface that clearly sets out necessary steps and administrative requirements. In **France** Enedis, the main DSO, has a contact point responsible for collective self-consumption in each district[484]. In **Czechia**, the registration point is centralised through the electricity data centre, which closely cooperates with the market operator and DSOs[485].

In accordance with Article 15a(6)(b)(iv) of the Electricity Directive, the registration process for energy-sharing arrangements should be **clear, timely and transparent**.

In accordance with **Article 15a(6)(b)(iii) of the Electricity Directive**, the registration process should also accommodate **changes in the location and participation** of final customers.

In **Czechia** final customers engaged in energy sharing have the right to submit a termination request to the DSO. This does not affect any contractual conditions derived from energy-sharing agreements between active customers or between active customers and energy-sharing organisers, or conditions for joining or leaving an energy community.

[482] In Brussels, Belgium, for example, the regulator, Sibelga, can be asked to provide information on historical consumption and network planning to help assess the economic feasibility of energy sharing.
[483] Consumer working group (partial rewrite).
[484] Solar Power Europe report on energy sharing, p. 17.
[485] ACER-CEER round-table presentation CZ; Elektroenergetické data centrum, a. s.

To ensure streamlined communication of energy-sharing arrangements, active customers should be able to authorise an **internal or third-party energy-sharing organiser to communicate relevant energy-sharing arrangements to the point of contact**.

In **Flanders (Belgium)** the members or shareholders of an energy community may authorise it to register as a community manager to represent them and interact with the distribution system operator. Alternatively, this role may be delegated to a third party[486].

**When validating energy-sharing arrangements and related changes, clear deadlines may be set** for system operators and/or other competent authorities to take action to ensure that requirements are met and energy sharing can be operationalised.

In **Czechia**, where continuous metering is enabled, the registration process should be completed within one month[487]. The DSO must comply with the request for termination of participation in energy sharing within 10 days. In **Spain** the activation time of self-consumption must not exceed two months for low-voltage installations of up to 100 kW[488]. In **Wallonia (Belgium)** every step of the registration process is subject to set deadlines: (1) the energy-sharing request is sent to the relevant system operator; (2) the operator has 10 working days to check the request for completeness and feasibility; (3) the system operator has 20 working days to evaluate the technical conditions and send its opinion to the regulator; (4) the regulator has 40 working days to verify compliance with energy-sharing rules; (5) the system operator sends a sharing agreement to the energy-sharing organiser. Energy sharing may begin 20 working days after the network operator receives the signed agreement; (6) the system operator informs the relevant suppliers within 15 working days before energy sharing starts.

Some Member States subject energy sharing to **additional authorisation procedures** that require additional information to ensure that the arrangements are compatible with wider energy-sharing rules in terms of entry and exit requirements, financial settlement rules, contracted parties, etc. Such authorisation procedures should be **subject to concrete deadlines** to avoid undue delays.

In **Wallonia** (**Belgium**), for example, the regulator (CWaPE) is responsible for verifying compliance with energy-sharing rules. In **Portugal** the Directorate-General for Energy and Geology (DGEG) is responsible for verifying compliance with internal regulations on energy sharing[489].

### 3.4.2. Data management (paragraphs 4(a) and 6(a) of the Electricity Directive)

**The administration of shared electricity is integrated into the bill-payment process for electricity supply, whereby the benefits of energy sharing come via a reduction of the energy component of the energy bill**[490].

[486] https://www.sciencedirect.com/science/article/pii/S0957178725001080#fn58.
[487] EC Facility – Country fiche Spain
[488] Ibid.
[489] Article 86(1) of Decree-Law 15/2022.
[490] Multi-supplier mode, ENTEC framework study, pp. 25-26.

This allows final customers to virtually self-consume the electricity generated by another active customers, or a collectively owned, rented or leased electricity generation facility, as if it were generated or stored behind their own electricity meter[491].

Article 15a(4)(a) and Article (6)(a) of the Electricity Directive establish an approach to energy sharing that focuses on the final customer, in which the **system operator or another competent body is responsible** for managing the metering data.

This type of implementation model gives consumers freedom to determine at what value to share electricity. In this way, customers can avoid the mark-ups charged by the retail supplier and reduce dependency on suppliers' willingness and capacity to provide energy-sharing services[492]. In most Member States, the system operator is responsible for managing metering data on shared electricity. In **Italy** a public service company[493] is responsible for the data management.

**In line with Article 15a(6)(a) of the Electricity Directive this process relies on an ICT-driven energy management system** operated by a system operator (or another competent body), which automates:

- the collection of relevant metering data for consumption and injection[494],
- the allocation of quantities generated to energy-sharing participants on the basis of an energy-sharing key within a time interval no longer than the imbalance settlement period,
- the deduction of allocated quantities from the total consumption data, and
- the communication of results to final customers engaged in energy sharing and retail suppliers or their balance responsible parties. This mechanism is applied in **Austria**, **Belgium (Brussels), Czechia, France, Finland, Luxembourg and Portugal.**

**A data-management system of this type may require a physical or virtual[495]accounting point**[496] connected with the metering point of final costumers engaged in energy sharing. This point would then register the shared amounts and determine the total consumption that needs to be communicated to the retail supplier after deduction of the shared energy (see figure 1)[497]. As such,

[491] Virtual net-billing: A fair energy sharing method for collective self-consumption Vladimir Z. Gjorgievski a, *, Snezana Cundeva, Natasa Markovska, George E. Georghiou, p. 253.

[492] This prevents situations where in Member States some suppliers responsible for calculating and deducting the shared energy from the participants' bills had not done so two years after the initiative was operational. See: ECR barriers and action drivers report.

[493] GSE website.

[494] See Commission Implementing Regulation (EU) 2023/1162, which sets interoperability requirements and transparent procedures for access to metering and consumption data.

[495] The accounting point may be virtually integrated at the metering point depending on the functionalities of the smart metering system.

[496] For the purpose of this SWD, 'accounting point' means a metering point or a virtual metering point managed by a balance responsible party, where the energy supply is provided by an energy supplier, the settlement is performed, and the energy supplier switch can take place. A 'metering point' means a physical location where the withdrawal or injection of electrical quantities is measured or calculated.

[497] The figure below takes the example of a collective energy-sharing model where two final customers share ownership over a balcony solar PV installation.

energy-sharing agreements depart from the traditional model of one single accounting point per metering and billing point.

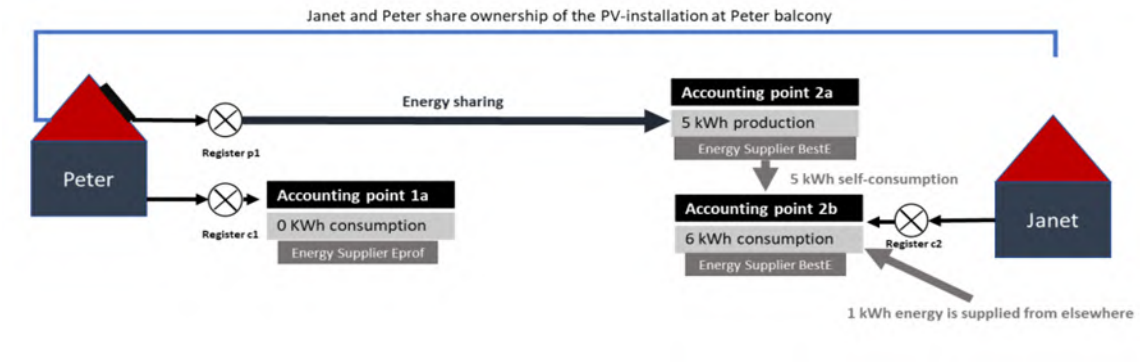


*Figure 1. Illustration of back-end registration and deduction of metered values associated with energy sharing*[498].

**Depending on the data-management model** in place in Member States[499], the data-management system can be implemented in a decentralised (e.g. data are managed through multiple DSOs connected to a single platform) or centralised (e.g. centralised responsibilities in single data-management hub) manner. In the case of the decentralised approach, Member States may wish to consider imposing a deadline for the implementation of the necessary ICT infrastructure to be able to manage energy-sharing data.

In **Austria**, a decentralised system is in place, whereby all DSOs must put in place a data-management system to implement energy sharing in line with the infrastructure for a standardised form of data exchange (i.e. EDA)[500]. In **Czechia**, an electricity data centre[501] is responsible for managing the data, cooperating with the market operator and with DSOs[502]. In **Finland** a centralised datahub[503] is responsible for recording information on energy sharing and for credit calculations in the balance settlement (within one hour) to determine energy consumption for invoicing[504]. The DSOs must report the metering information to the datahub[505].

**Member States can either put in place a central datahub to streamline data-management processes, or to ensure standardisation across different (decentralised) parties responsible for data management (i.e. interoperable software and standardised documents).**

***Collection of metering data***

**Smart metering systems are an essential requirement for energy sharing**.

[498] Multi-supplier models and decentralized energy systems - Publications Office of the EU.
[499] See: Electricity metering and consumption data interoperability - Publications Office of the EU.
[500] EDA | How it works.
[501] https://www.e-sbirka.cz/sb/2020/359?zalozka=text.
[502] Presentation Roundtable CEER, Czechia.
[503] Visit Finland Datahub.
[504] Member State consultation.
[505] Section 3 of Chapter 4 of the Decree 767/2021.

Member States should **consider prioritising the roll-out of smart meters for active customers**, especially in cases where there are solar installations on buildings with existing smart meters[506]. Energy communities engaged in energy sharing have reported delays in the roll-out of smart meters[507]. Member States should also consider setting **a deadline for the instalment and implementation of smart metering systems for energy sharing and active participation**[508]. Apart from smart meters, there are also other EMS that play a decisive role for flexibility as they can be orchestrators of the energy consumption within a house/ building and can help in shifting energy consumption when energy is produced by RES, as well as energy sharing among different users.

For example, in **Austria**, irrespective of the roll-out plan, the DSO is obliged, upon request, to install a smart meter as soon as possible and within two months[509].

***Allocation of metered generation quantities***

The party responsible for data management applies the energy-sharing key to the total generated electricity within a timeframe no longer than the imbalance settlement period, in order to determine the amount of energy that can be allocated to each participant.

Member States are free to choose which type of **allocation method or energy-sharing** key they allow. There are different calculation methods depending on the energy-sharing key chosen, which fall into three types[510]:

- **Fixed rate:** a proportion of total generated electricity is allocated to participating final customers (e.g. participant 1 receives 20%, participant 2 30% and participant 3 50%);
- **Pro-rata:** the participating final customers receive a percentage of the production commensurate with their consumption (e.g. 60% for participant 1 with a higher consumption profile; 40% for participant 2 with a lower consumption profile) or with their total consumption, where production > total consumption of all participants; and
- **Priority-based:** total generated electricity is allocated to a list of participating final customers. The first on the list can self-consume electricity until a maximum (pre-fixed or in proportion to total demand) is reached; any excess can be consumed by the next final customer until a maximum and so on (e.g. participant 1, main investor, receives 70%; participant 2 receives 30%).

All these calculation methods are either static or they can be revised at regular intervals (years, months, weeks). Energy sharing may also be based on near-real-time dynamic management

[506] Solar Power Europe, p. 19.
[507] ECR barriers and action drivers report.
[508] Ibid.
[509] Österreichische Koordinationsstelle für Energiegemeinschaften, FAQs – häufig gestellte Fragen, https://energiegemeinschaften.gv.at/faqs/.
[510] Multi-supplier models and decentralized energy systems - Publications Office of the EU. See in this regard the practice of Portugal, which has 3 types of energy-sharing key: (1) fixed rate; (2) pro rata; (3) priority-based with two-iterations: (3a) a pre-defined list of participating final customers; and (3b) all other participating final customers.

(within hours, minutes, seconds), with a view to optimising electricity flows based on the actual consumption of final customers engaged in energy sharing[511].

Moving towards a more dynamic calculation methods may help to optimise the value of energy sharing by increasing self-consumption rates and unlocking the potential for demand-side flexibility[512]. Whereas more static keys allow for regular revision (e.g. on monthly basis). As such they may make the volumes of extended or collective self-consumption by active customers more predictable for retail suppliers, thereby reducing the costs stemming from imbalances.

**Member States can choose to start with easy-to-use and standardised, fixed sharing keys** (meaning a fixed pre-agreed percentage, irrespective of the actual electricity consumption). They should, however, **consider gradually working towards accepting more dynamic ones,** where a more detailed timeframe is aligned with the time interval of smart-meter readings (i.e. based on actual consumption in the imbalance settlement period), which would allow for value optimisation through a higher self-consumption rate and the provision of demand-side flexibility services.[40]

For example, in **Austria**, consumers can make use of a static proportional energy-sharing key with all DSOs. -Some DSOs also offer dynamic energy sharing based on the actual consumption behaviour of the participants within a 15-minute time interval (either priority based or pro-rata). In **Portugal**, under specific conditions[513], energy sharing can be based on dynamic management systems[514], which allow for near-real-time electricity management (i.e. within the imbalance settlement period)[515]. In **Czechia**, static calculation methods can be computed in five iterations during the imbalance settlement period for smaller groups of up to 50 final customers, approximating a dynamic calculation method[516].

These energy-sharing keys can **either be set by the DSO or chosen by final customers engaged in energy sharing.**

For example, in **Luxembourg**, consumers can choose between a simple sharing model, developed by the energy regulator in consultation with DSOs, or may define their own sharing model in accordance with technical and organisational standards[517].

Where final customers can design a bottom-up calculation method, **the system operator and the retail supplier should be notified** to allow for system operators to match the metering data and

[511] See for example AT where consumers have the choice between a static (fixed) energy-sharing key or dynamic energy sharing based on the participants' near-real-time consumption needs. See: https://energiegemeinschaften.gv.at/messung-und-aufteilung/

[512] Although the distribution and calculation methods may differ across Member States, dynamic methods that account for close to real-time changes can help optimise the demand-side flexibility potential of all final customers.

[513] (1) access to metering data; (2) transparency on energy sharing or applicable sharing keys; (3) interoperability with the network operator's systems.

[514] E.g. Wattshare and E-REDES.

[515] Article 87(2) of the Law 15/2022; Article 87(3) of the Law 15/2022

[516] CEER presentation – CZ Regulator.

[517] Art. 9 of the of the Luxembourg Law of 9 June 2023, amending Art. 8quater(5) of the Luxembourg Law of 1 August 2007.

for suppliers to adapt their sourcing strategy accordingly, in line with Article 15a(4)(h) of the Electricity Directive[518].

Where no energy-sharing key is communicated, **an easy-to-use, standard model** should be in place, as a back-up option.

For example, in **Portugal**, the management entity for energy sharing is obliged to inform the network operator of the sharing method (and any amendments) through an electronic platform. If there is no contact of this nature, a standard static energy-sharing method is applied[519].

***Deduction of allocated metered generation quantities***

Under Article 15a, point (4) of the Electricity Directive, **the deduction of allocated metered generation quantities from total metered consumption during the imbalance settlement period makes energy sharing possible,** allowing separate accounting for the electricity supplied from the grid and consumed.

The mechanism of virtual net metering implies that during the imbalance settlement period **shared energy volumes are deducted from the total metered consumption and communicated to the retail energy suppliers;** this is linked to the participating final customers' metering and billing point. Near-real-time deduction ensures that energy sharing sets it apart from the *ex post* internal settlement of imbalances between suppliers and avoids administrative costs for suppliers relating to *ex post* manual adjustments.

***Communication of results of energy sharing***

In line with Article 15a(6)(a) of the Electricity Directive, at least once a month metering data should be passed on to final customers engaged in energy sharing and market participants, in particular retail suppliers or their balance responsible parties. The one-month period aligns with the monthly billing requirement linked to smart metering systems that allow for remote reading laid down in annex I (2)(d) of the Electricity Directive.

**When metering data is accessible and communicated as close to real time as possible,** suppliers can improve the forecasting of the electricity consumption of their final customers engaged in energy sharing. Final customers and their energy-sharing organisers can thereby optimise the value of energy sharing[520].

For example, in **Austria** all energy produced and consumed is metered in 15-minute intervals and communicated as soon as possible by the DSO to the supplier[521]. In **Luxembourg**[522], a digital platform, LENEDA, is in place to facilitate access to production and consumption data for community representatives[523].

[518] Active customers participating in energy sharing should notify energy-sharing arrangements to the system operators and market participants, including the suppliers either directly or through an energy-sharing organiser.
[519] Article 87(1) of the Law 15/2022.
[520] DECIDE (2021). Energy Community Monitor – June 2021 (D3.1).
[521] Section 16e(1) Nr. 2 of the Electricity Act 2010.
[522] EC Facility – Country fiche Luxembourg.
[523] Ibid.

### 3.4.3. Settlement of applicable network tariffs and charges, taxes or levies

**Through the automated data-management system operated by the system operator, the economic value of energy sharing will be reflected in a reduction of the energy component of the energy bill in line with Article 15a(4)(a), 15(4) and (2)(e) of the Electricity Directive**.

The supplier should only be able to bill the participating consumers in proportion to the 'netted' volume of energy (i.e. total volume – shared volume), thereby effectively reducing the energy bill **as clarified in Recital 24 of the EMD.** Final customers and their energy-sharing organisers are responsible for any additional financial settlement required for (organising) energy sharing based on agreements (e.g. a price per kWh for energy shared between family members or a price charged by a third-party operator for maintaining and running production installations).

As energy sharing is an administrative arrangement whereby electricity is injected into the grid, as clarified by Recital 24 of the EMD, the **network charges, taxes and levies will still be due in proportion to the shared volume of electricity.**

*Network tariffs*

The **application of network tariffs** in the context of energy sharing varies across Member States. **Network tariffs should not be used as a financial support mechanism to incentivise the uptake of energy sharing as a policy objective. It may however account for the cost-reflective benefits that energy sharing can bring to the grid**. Where energy is shared between production and consumption units within a confined area this may help to minimise grid losses and make optimal use of available grid capacity.

In **Austria**, separate **local and regional network charges** apply to consumption covered by the allocated energy from a generation facility. Depending on the geographical scope, the network charges the network charges for RECs who are active in energy sharing are reduced: (i) by 57% if the REC operates only at local level; by 28% at the local level or 64% at regional level if the REC operates both at local and regional levels[524].

Similarly, in **Portugal**, there is a specific tariff regime for shared energy based on the voltage levels involved in transporting energy from generation to consumption (e.g. only low-voltage distribution tariffs apply where both the generation and consumption points are located in the low-voltage grid)[525]. Where reduced network tariffs are provided, the NRA is advised to conduct **a cost-benefit assessment to evaluate the extent to which energy-sharing initiatives contribute in a fair and proportionate manner to system costs** based on the data received from energy-sharing participants or representatives and network operators. Such an assessment could be part of a broader cost-benefit assessment on DERs, already required under **Article 16(3)(e) of the Electricity Directive.** For example, in **Croatia** such an analysis is drawn up by the Croatian Energy Regulatory Agency (HERA) based on data and information provided by the distribution system operator[526].

[524] Section 16e(3) of the Electricity Act 2010.
[525] 2025-ACER-Electricity-Network-Tariff-Practices.pdf. Decree-Law 15/2022 of 14 January.
[526] Article 26(17) of the Law on the Electricity Market; and Article 26(18) of the Law on the Electricity Market.

**System operators should be able to recover the costs of energy sharing** through network charges, including for the implementation of automated data-management systems[527], the reading, processing and communication of relevant metering data, and, where applicable the collection of network charges in proportion to the shared electricity[528].

In Flanders (**Belgium),** the DSO charges an annual fee of around one euro to active customers engaged in energy sharing[529]. In Austria, additional energy-sharing expenses can be recovered by the regulator in the form of network charges[530].

***Taxes and levies***

Member States may choose to provide direct or indirect financial support, for example by reducing taxes and levies to stimulate the uptake of energy sharing.

In **Portugal**, generation facilities with an installed capacity up to 1 MW used for self-consumption are exempt from excise duties.

In the Flanders region of **Belgium**, consumers pay less for the energy component of the energy bill received by their retail supplier. For each kWh of shared electricity, no price per kWh needs to be paid. However, network tariffs, taxes and levies are still due in proportion to the total amount of electricity consumed.. Situations where a cost is charged for energy sharing, the active customer does not have another taxable activity and for RES installations with capacity smaller or equal to 10 kVA are similarly VAT-free.[229] In **Luxembourg**, shared electricity is exempt from electricity tax[531].

### 3.5. EXEMPTIONS FROM SUPPLIER OBLIGATIONS

**Article 15a(4)(c) of the Electricity Directive** establishes that *de minimis* final household customers that share electricity between each other up to certain thresholds (10.8 kW per individual household and 50 kW in a multi-apartment context) are not subject to supplier obligations, such as supply-license requirements, excise duty/VAT, energy-saving certificates, collection of network charges, taxes and levies (see Section 2.3.6) and consumer-protection rules (e.g. basic contractual rights).

Under Article 15a(4) of the Electricity Directive, this *de minimis* exception from supplier obligations can be further increased to 100 kW or decreased to 40 kW depending on the average size of multi-apartment blocks in the Member State.

This *de minimis* exemption in Article 15a(4)(c) of the Electricity Directive does not imply the automatic application of supplier obligations in relation to other types of final customer engaged

[527] In line with Article 15a(6)(a) Electricity Directive .
[528] In line with Article 15a(6)(b) Electricity Directive .
[529] Consultation MS / Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders - ScienceDirect
[530] Ibid.
[531] (AOEM, Art. 66(1)).

in energy sharing. **Member States can decide whether to impose supplier obligations in the context of energy sharing and which ones to apply**.

Where Member States **decide to impose certain supplier obligations in proportion to the shared electricity** (e.g. the collection of network charges and taxes), they should ensure that this does not lead to discriminatory or disproportionate treatment of active customers and energy communities[532].

To ensure proportionality in such decisions, Member States should **distinguish between different categories of final customer** (e.g. local authorities, small businesses and energy communities vs large enterprises) and how professional energy-sharing models are (e.g. community or peer-to-peer driven energy sharing versus energy sharing facilitated by a commercial external organiser).

Imposing obligations on active customers or energy communities based on the assumption that shared electricity covers the total volume of electricity consumed (such as licensing, disconnection procedures and supplier of last-resort rules) is likely to be considered disproportionate and discriminatory.

Member States may decide to apply certain **supplier obligations on energy-sharing organisers in proportion to the self-consumed electricity** such as the responsibility of collecting taxes, levies and network tariffs in proportion to the metered shared electricity[533].

In **Portugal** and the Brussels region of **Belgium**, the energy-sharing organiser or energy community is mostly responsible for collecting charges. In **France**, the residual supplier is responsible for collecting grid charges in proportion to self-consumed electricity, and taxes are collected by the energy-sharing participants responsible for invoicing[534]. In the **Netherlands**, it is compulsory to have an energy-sharing organiser (internal or external) who is responsible for collecting taxes in proportion to the virtually self-consumed electricity.

When assessing whether to apply supplier obligations, especially for internal energy-sharing organisers, the criteria to take into account are as follows: **i) the right of active customers and renewables self-consumers not to be subjected to disproportionate or discriminatory technical and administrative requirements and procedures** under Article 15(1) of the Electricity Directive and Article 21(2)(a), point (i) and (ii) of the RED, and ii) that citizens' and RECs are entitled to follow non-discriminatory, fair, proportionate and transparent procedures under Article 16(1)(e) of the Electricity Directive and Article 22(1) of the RED. This is especially the case where Member States decide to introduce licensing or registration requirements for internal energy-sharing organisers.

[532] Active customers and citizen and renewable energy communities have the right to non-discriminatory and proportionate treatment, as outlined in Article 15(1) and 16(1) of the Electricity Directive and Article 22(1) of the RED.

[533] In this regard, Article 15a(3) provides for de minimis consumer protection (Articles 10 (basic contractual rights), 12 (switching) and 18 (billing information)) in case an external third-party energy sharing organiser is responsible for contracting and billing. Member State may decide to apply other consumer protection standards.

[534] EC Facility – Country fiche France.

Supplier obligations become applicable when the shared electricity is falls short of, or exceeds, demand, and active customers or their organising entities need to **purchase the shortfall directly from, or sell the surplus to, electricity markets**[535]. For example, in **Austria**, energy communities sharing electricity with their members are exempt from supplier obligations. Where the energy community purchases or sells on the electricity markets, supplier obligations become applicable[536].

### 3.6. CONSUMER RIGHTS

Energy sharing may cover different types of agreement, according to Article 15a(4)(b), (d), (e) and (f) of the Electricity Directive, including:

- energy-sharing agreements between active customers;
- agreements between the active customers and the energy-sharing organiser;
- agreements between active customers and their energy suppliers; and
- rental or lease agreements between active customers and the owners of the installed generation or storage facility.

#### 3.6.1. Energy-sharing agreement between active customers

Energy-sharing agreements are agreements between two or more active customers involved in an energy-sharing scheme. This does not constitute a contractual relationship between a consumer and a natural or legal person acting professionally in the sense of Article 2(b) and (c) of the Unfair Contract Terms Directive (UCTD). Pursuant to Article 15a(2) of the Electricity Directive 'participation in energy sharing shall not constitute the primary commercial or professional activity of active customers engaged in energy sharing'. Contractual relationships are therefore governed largely by national civil code.

Article 15a of the Electricity Directive provides for *de minimis* consumer-protection standards in the case of energy sharing between active customers. Article 15a(4)(d) and (e) of the Electricity Directive provides for access to voluntary template contracts with fair and transparent terms and conditions and, in the event of a conflict with other active customers, access to out-of-court dispute settlement.

***Template contracts***

Pursuant to **Article 15a(4)(d) EMD**, Member States need to provide access – on a voluntary basis – to template contracts with fair terms and conditions, which active customers can use when concluding an energy-sharing agreement **between each other or with an internal energy-sharing organiser (such as an energy community)**. Such contracts help to protect consumers against unfair practices and may include clauses for availability, performance, pricing and billing, conditions for entry and exit, specific allocation methods (where applicable), information on out-of-court dispute settlement and force majeure.

[535] Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders - ScienceDirect.
[536] Ibid.

**Template contracts are most useful for final customers, provided they are expressed in clear and understandable language, and include all information necessary for the parties to understand their rights and obligations**.

Examples of template contracts can be found in **Belgium**[537]**, Austria**[538]**, Portugal**[539] and **Luxembourg**[540]. In the Flanders region of **Belgium**, the regional government may intervene in energy-sharing agreements to specify its content further.[42] In **Brussels (Belgium)** , template contracts also refer to the dispute-settlement body of Brugel.

Template contracts may also include energy-sharing agreements **between active customers and DSOs**, including the terms and conditions relating to areas such as energy-sharing keys, representation, changes and modifications, duration and data protection. In **Luxembourg**, the regulator has approved such templates, which are publicly available[541].

***Out-of-court dispute settlement***

**According to Article 15a(4)(e) of the Electricity Directive, extrajudicial-dispute resolution, within the meaning of Article 26 of the Electricity Directive must be available to all final customers**.

This is a standalone right for all final customers. Article 26 of the Electricity Directive confirms that all final customers are entitled access to extrajudicial-dispute resolution, including where energy is shared between final household customers.

In the Flanders region of **Belgium**, extrajudicial dispute resolutions between active users engaging in energy sharing are regulated according to the P2P model agreement. If both parties have concluded an energy-sharing agreement, the active customer can use out-of-court dispute resolution mechanisms regulated in common law, namely mediation, reconciliation and out-of-court resolution of consumer disputes.

An autonomous public service with legal personality has been established for the extrajudicial settlement of consumer disputes, the Consumer Ombudsman Service, consisting of a contact point and a service for the extrajudicial settlement of consumer disputes. Applications to the Consumer Ombudsman for the out-of-court settlement of a consumer dispute are free of charge.

**Further protection may be considered by EU Member States as other energy sharing practices emerge**.

[537] For an example of a model energy sharing agreement between the energy community and final customers based on collective investments, see here. For an example of a model energy sharing agreement between final customers based on a trade agreement, see: https://assets.vlaanderen.be/raw/upload/v1677078009/Modelovereenkomst-Persoon-aan-persoonverkoop_yawgko.docx.

[538] For an example of a model of energy sharing agreement based on a lease see: Lease and easement agreement GEA – Energy Communities.

[539] www.poupaenergia.pt. Templates include provisions on rights and duties of members, entry and exit of members, energy sharing coefficient, surplus of energy generated, etc.

[540] CEAH interviews – Country fiche for energy sharing in LU.

[541] See: 20240202_GRD_Convention_AC.pdf; and Convention d'autoconsommation pour une communauté d'énergie renouvelable.

This requires careful monitoring by the NRA or another consumer authority; this can be done for example, by laying down fair, transparent and non-discriminatory rules for sharing electricity, including in relation to invoicing, termination of the agreement, and applicable procedures in the event of non-payment and disputes. This may include further **regulating the relationship between the active customers and the internal energy-sharing organiser** (such as the energy community)[542].

For example, in the Brussels region of **Belgium** the *Ordonnance Electricité*[543] (Electricity Code) lays down rules and responsibilities concerning data protection and privacy, non-payment, out-of-court dispute settlement and termination of contracts between energy communities and final customers engaged in energy sharing.
In **Czechia**, any energy community that shares electricity is obliged to provide members or shareholders of the community with billing information. Where electricity is shared free of charge, the energy community needs to provide the members or shareholders with data on the amount of electricity for the reference period.

#### 3.6.2. Agreement between active customers and third-party energy-sharing organisers

By appointing a third-party energy-sharing organiser, active customers participating in energy sharing have to enter into an agreement with an organiser.

**Under Article 15a(3) of the Electricity Directive** a third-party energy-sharing organiser may help share data with the single point of contact, market participants and their balance responsible parties on i) the energy-sharing arrangements ; ii) the contracting and billing of shared electricity; iii) the provision of flexibility services by means of the management and balancing of behind-the-meter flexible loads, iv) distributed renewable energy generation and storage facilities; and v) the installation and operation of generation or storage facilities used for energy sharing.

**Article 15a(3)** of the Electricity Directive makes it clear that third-party energy-sharing organisers in general should provide such services in a **non-discriminatory manner and with transparent prices, tariffs and terms** to all final customers engaged in energy sharing.

Where a third party organiser is responsible for **contracting and billing** on behalf of the active customer, Article 15a(3) extends the rights provided for in Articles 10 (basic contractual rights), 12 (right to switch) and 18 (invoicing and minimum information) of the Electricity Directive to contracts and invoicing concluded between an energy-sharing organiser and final customers engaged in energy sharing.

This means that a **third-party energy sharing organiser must:**

[542] In terms of further application of consumer protection standards, Member States may wish to reserve the right to impose specific obligations on internal energy sharing organisers regarding the provision of information and handling of complaint, as is the case in Belgium (Flanders) where active customers are organised through an energy community for energy sharing.
[543] Article 28 quaterdecies and Article 28 quindecies.

- provide a list of contractual terms to be laid down in the contract, and a summary of the key contractual conditions (Article 10(3) of the Electricity Directive);
- notify active customers of any adjustments, including the reasons and preconditions for the adjustment, at an appropriate time, but no later than one month in the case of household customers, before the adjustment takes effect (Article 10(4) of the Electricity Directive);
- offer active customers a wide choice of payment methods (Article 10(6) of the Electricity Directive);
- provide a good standard of service and complaint-handling in a simple, fair and prompt manner (Article 10(9) of the Electricity Directive);
- allow customers to switch from suppliers within three weeks, and, from 2026, within 24 hours (Article 12(1) of the Electricity Directive ); and
- comply with billing (information) requirements laid down in Article 18 of the Electricity Directive.

To be noted that the **contractual relationship between active household customers and a third-party energy-sharing organiser constitutes a consumer relationship within the meaning of general EU consumer rights law** (including the Unfair Contract Terms Directive[544], the Price Indication Directive[545] and the Alternative Dispute Resolution Directive[546]). Final household customers are thus entitled to:

- all the pre-contractual information set out in Article 3(3) of Consumer Rights Directive 2011/83 (CRD);
- the consumer protection rights against unfair contractual terms provided for in the Unfair Commercial Practices Directive[547]; and
- unambiguous, easily identifiable and clearly legible selling prices and unit prices within the meaning of Article 4(1) of Price Indication Directive 98/6[548].

Member States may decide to impose **further consumer-protection standards** on third-party energy-sharing organisers.

### 3.6.3. Agreements between active customers and third-party operators

**Where third-party energy-sharing organisers provide services relating to the installation, maintenance and operation of a generation or storage facility**, **they qualify as an energy**

[544] Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts, *OJ L 95, 21.4.1993, pp. 29–34,* http://data.europa.eu/eli/dir/1993/13/oj.

[545] Directive 98/6/EC of the European Parliament and of the Council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers, OJ L 80, 18.3.1998, pp. 27–31, http://data.europa.eu/eli/dir/1998/6/oj.

[546] Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR), OJ L 165, 18.6.2013, pp. 63–79, http://data.europa.eu/eli/dir/2013/11/oj.

[547] Unfair Contract Terms Directive (UCTD). 'Seller or supplier' means any natural or legal person who is acting for purposes relating to their trade, business or profession, whether publicly owned or privately owned (Article 1(1) UCTD).

[548] Directive 98/6/EC of the European Parliament and of the Council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers
*OJ L 80, 18.3.1998, pp. 27–31.*

**service provider (ESCO)** acting under an energy-performance contract. In such cases they are **subject to the measures laid down in Article 28 (qualification, accreditation and certification schemes) and Article 29 (energy services) of the EED (2023/1791)**.

When an energy-sharing organiser takes over the roles of ESCO and operates under an EPC, **Article 26 of the EED** also grants final customers **access to out-of-court dispute resolution**.

### 3.6.4. Agreement between active customers and retail suppliers

Final customers engaged in energy sharing may retain their contracts with energy suppliers to provide electricity that is not covered by shared electricity (e.g. at night, when the solar PV panels are not generating). Under Article 15a(4)(b) of the Electricity Directive active final customers retain their consumer rights in relation to their retail supplier.

Given that final customers engaged in energy sharing tend to retain their supplier contract to meet their full demand, Member States should **regulate and monitor this relationship** to ensure non-discriminatory and fair treatment by suppliers. This could be **overseen by the NRA or another competent authority,** requiring suppliers to disclose costs and price-calculation methodologies.

In Member States such as Austria and Portugal, suppliers do not apply any additional charges[549]. In **Austria**, the DSO is tasked with managing metering data to facilitate energy sharing, which includes the need to mitigate imbalance risks for suppliers to final customers engaged in energy sharing[550].

Energy sharing **may have ramifications for suppliers' business**:

- Energy sharing can lower reliance on suppliers, impacting their revenues[551];
- It can make it more difficult to predict their final customers' consumption and may have a detrimental impact on the balancing groups of suppliers[552]; and
- Depending on the national set up, it may cause suppliers' administrative costs to increase, i.e. those relating to data management, and collection of charges, taxes and levies on the shared volumes.

**Mandatory design features set out in Article 15a of the Electricity Directive that can help minimise the impact on suppliers and related costs:**

- Inform the retail supplier in a timely manner of participation in energy sharing and related energy-sharing arrangements (such as installed capacity and allocation method), (Article 15a(4)(h) of the Electricity Directive);

[549] This information is based on an interview with Stephan Heidler, a representative from the Austrian Coordination Office for Energy Communities (25.4.2025).

[550] Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders - ScienceDirect

[551] CEER, 2019.

[552] CEER, 2019; Alonso and Del Granado, 2023. See also: https://www.sciencedirect.com/science/article/pii/S0957178725001080#fn26.

- Ensure that the party responsible for data management informs final customers and suppliers at the earliest opportunity of the metering data on shared electricity, (Article 15a(6)(a) of the Electricity Directive); and
- Ensure that the party responsible for data management has put in place an IT system to automate the management of data, including the deduction of shared electricity from the total metered consumption. The retail supplier must be notified of this in order to calculate the energy component of the bill, (Article 15a(4)(a) of the Electricity Directive).

In **Austria**, beyond the prescribed design features, the following **design choices should have a further positive impact on minimising additional costs incurred by suppliers** relating to energy sharing:

1. Making another party (e.g. energy-sharing organiser or system operator) responsible for collecting network charges, taxes and levies in proportion to the shared electricity;
2. Setting a quota of how much each final customer consumes per scheme (a participation factor) in advance where final customers take part in multiple energy sharing schemes, based on a static-allocation method and notifying the party responsible for data management accordingly;
3. Ensuring all amounts of energy produced and consumed are metered within the imbalance settlement period and communicated as soon as possible to the supplier by the party responsible for data management[553]; and
4. Imposing an obligation on the party responsible for data management to calculate the load profiles of final customers engaged in energy sharing in a standardised and transparent manner, and to cooperate with balance responsible parties if discrepancies arise from these load profiles after the metering data is made available[554].

Suppliers can adopt more conversative forecasting approaches, invest in improving the accuracy of forecasting using AI-models, or change their sourcing strategies that account for the intermittent nature of renewable energy[555].

***Balancing responsibility***

Regarding imbalance risks, energy sharing takes place during the imbalance settlement period (i.e. it is balance-neutral). Hence, active customers engaged in energy sharing **do not have balancing responsibility** since, as final customers, they belong to the balancing group of their residual supplier.

**However**, **imbalances may occur in the supplier's balancing group due to under- or over-forecasting of the surplus demand and supply of the active customer engaged in energy sharing**. Suppliers then have to buy or sell electricity at the imbalance price, which they do after the imbalance settlement period[556].

[553] Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders, p. 5.
[554] Ibid., pp. 5-6.
[555] Source graph 1: https://lnkd.in/eKWwxUjY; Source graphs 2-4: https://lnkd.in/e_J9jC2f.
[556] This is a similar situation to that of individual active customers operating behind the meter that have invested in distributed energy resources and energy efficiency measures.

The supply of electricity to final customers engaged in energy sharing is standard practice for suppliers, with the difference being that forecasting and hedging may be more complicated due to the 'active' status of the final customer. This follows the pattern of active customers engaged in self-consumption behind the meter, or flexibility or energy-efficiency schemes.

While final customers are usually not held responsible by suppliers for deviations from consumption patterns through separate fees, Recital 24 of the Electricity Directive explains that active customers are financially responsible for imbalances that they may cause, pursuant to Article 15(2)(f) of the Electricity Directive.

***Contractual terms, conditions and fees***

In view of the potential impact of energy sharing on suppliers they may lay down **contractual conditions, fees or procedures** in supplier agreements on final customers who are either engaged or are considering becoming engaged in energy sharing.

In **Belgium** several suppliers impose a service fee for energy sharing in the form of a fixed cost per connection per year/month (between EUR 24 and 150) or a cost that varies according to the volume of shared electricity[557].

In **Czechia**, a number of practices on the part of retail suppliers that have come to light that may affect final customers' right to energy sharing[558]:

- Outright refusal to enter contract with a final customers engaged in electricity sharing (e.g. buy-out contracts are offered only to active customers not engaged in energy sharing);
- Specific conditions that significantly limit the amount of electricity that can be shared without additional costs (e.g. only 10%); and
- Less favourable retail prices and/or imposing non-transparent service fees.

Other conditions may include allowing energy sharing only in combination with a dynamic price contract, monthly billing and timely reporting on energy sharing arrangements[559].

The right to choose a supplier in accordance with Article 4 of the Electricity Directive does not mean that suppliers are obliged to enter into a contract with final customers or that they can impose specific conditions; Those conditions fall within the **commercial freedom of the supplier**, except where explicitly prohibited by the Electricity Directive, general EU consumer rights law or national law.

**The requirement laid down in Article 15a(4)(f) of the Electricity Directive places some restrictions on the commercial freedom of suppliers to ensure that active customers engaged in energy sharing are not subject to unfair and discriminatory treatment.**

[557] FEBEG; L'électricité partagée en Wallonie : un avantage économique pour les consommateurs ? - Renouvelle.; and Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders - ScienceDirect

[558] Prvni Ceska Energie and EON.

[559] Implementing energy sharing in energy communities: A comparative legal analysis of Austria and Flanders - ScienceDirect

In **Czechia**, the recently amended Energy Act[560] **explicitly prohibits suppliers from restricting energy sharing in energy contracts**, including banning electricity sharing and a limit on the amount of electricity a final customer is allowed to share.

Although discriminatory and unfair treatment must be prohibited, suppliers should still be able to **manage their perceived risks by making use of contractual clauses** whereby consumers are subject to different terms and conditions depending on changes in volumes or profiles in a supply contract that cause direct additional costs (e.g. associated to previously hedged positions)[561]. For this form of differentiated treatment to be considered non-discriminatory there would need to be objective reasons and directly incurred costs[562]. **Under Article 15a(4)(f) of the Electricity Directive**, **any service fee imposed must not exceed the direct costs borne by the supplier in relation to energy sharing**.

### 3.7. INVOLVEMENT OF VULNERABLE AND ENERGY-POOR CUSTOMERS

**Pursuant to Article 15a(7) of the Electricity Directive, Member States must take appropriate and non-discriminatory measures to ensure that vulnerable customers and those affected by energy poverty can access energy-sharing projects**. Those measures may include financial support measures or a production allocation quota.

**Article 15a(8) of the Electricity Directive** further elaborates on the production allocation quota in relation to publicly owned energy-sharing projects. Member States need to ensure that public authorities make shared electricity accessible to vulnerable or energy-poor customers or citizens, i.e. tenants as final users (relevant mostly in Member States where building owners are considered as final customers).

Member States should ensure that at least 10% on average of the energy shared is accessible; for example, a solar PV on the roof of the public library owned and managed by the municipality.

There are inspiring examples of similar schemes, such as the 100 Aldeias project in **Portugal**[563] and the Requiem project in Valencia, **Spain**[564].

Member States may decide to impose this obligation, of at least 10% of energy shared to be publicly accessible, on companies controlled by local authorities or energy communities to which local authorities belong. Member States may also decide to impose this obligation in the case of third-party investments.

[560] Lex OZE III, para. 30.

[561] For example, evident and transparent cost resulting from previously hedged energy due to significant volume decrease in fixed-price contracts.

[562] 'Enhanced consumer choices and competition could prompt suppliers to apply only extra charges and conditions reflecting actual impacts or costs.'

[563] Cleanwatts' "100 villages" project exceeded goal - Renováveis magazine.

[564] The Requiem in Power project, Valencia 2024 - European Commission.

In the **Netherlands**, government agency projects must make at least ten 10% of electricity that is shared accessible to vulnerable or energy-poor consumers. **Austria** is planning to introduce a legal provision to ensures that at least 10% of electricity fed annually into the grid in an energy-sharing scheme **from a public authority** must be available for vulnerable households. In **Slovenia**, national or local public authorities that invest in solar PV plan with a capacity up to 250 kW must make available free of charge at least 25% of the annual production to household customers, in particular those living in multi-apartment buildings and vulnerable people and those on low incomes[565].

In **Lithuania**, the state provides sliding grant support and a soft loan of up to 50%[566], depending on the proportion (not less than 30%) allocated to socially disadvantaged people, and to municipalities and their institutions responsible for implementing a RES project. The municipality is responsible for identifying the vulnerable groups who receive social assistance, and then these people receive electricity from the RES[567].

### 3.8. MONITORING THE REMOVAL OF UNJUSTIFIED OBSTACLES AND RESTRICTIONS BY NRAS

**Pursuant to Article 59(1)(z) of the Electricity Directive, NRAs are responsible for monitoring the removal of unjustified obstacles to and restrictions on the development of energy sharing**, including obstacles and restrictions preventing the connection of flexible distributed energy generation within a reasonable time (Article 58,(d) of the Electricity Directive).

Pursuant to Article 59(1)(b) of the Electricity Directive, NRAs must also ensure that system operators, electricity undertakings and other market participants comply with their obligations under the Electricity Directive and other Union law - including general EU consumer protection law).

Accordingly, NRAs are thus responsible for monitoring unjustified restrictions or obstacles (e.g. contract conditions and fees) imposed by retail suppliers on their final customers engaged in energy sharing, and any other obstacles stemming from conditions and procedures to operationalise energy sharing (e.g. smart-meter roll-out, permitting, licensing, grid connection, timely treatment of energy sharing requests and timely communication of metering data relating to energy sharing).

According to Article 59(1)(z) of the Electricity Directive, NRAs are also responsible for ensuring that the conduct of system operators and market participants complies with Article 15a of the Electricity Directive, e.g. the right of final customers engaged in energy sharing to be treated in a non-discriminatory and fair manner by their supplier or their balance responsible party, in accordance with Article 15a(4)(f) of the Electricity Directive.

[565] Article 13 of the ZUOKPOE Act.
[566] If more than 80% of all vulnerable customers in the municipality are included, the possibility of receiving a 50% subsidy applies.
[567] Presentation Ministry of energy, 2025-03-06.

In some Member States, system operators and other competent bodies are already required to **report to the NRA on the facilitation of energy sharing**. System operators and energy-sharing participants or representatives could be obliged to inform regulators about the number of energy-sharing projects in operation and development, their total installed capacity, the total number of consumers and their impact on the grid.

For example, **Austria** requires quarterly reporting. This feedback mechanism can help provide transparency, identify problems and facilitate improvements to the registration, validation, data management and settlement process; for example, so that network tariff reductions do not undermine fair and proportionate contribution to system costs, and to make it easier to change energy sharing keys over time.

## SECTION 4: PROTECTION OF VULNERABLE CUSTOMERS AND CUSTOMERS IN ENERGY POVERTY FROM ENERGY DISCONNECTIONS

### 1. INTRODUCTION

Energy disconnections, i.e. when a customer is cut off from essential energy services such as electricity or gas, are a sharp reality for vulnerable customers across the European Union. Disconnections often arise from non-payment of bills, which can be attributed to a combination of factors closely linked to energy poverty, including low income, high energy costs, and inadequate energy efficiency. D**isconnections are therefore more likely to occur among vulnerable and energy-poor customers and their severity is often disproportionate to their causes**, exacerbating vulnerability and potentially leading to severe health problems, and social and economic hardship. Moreover, energy disconnections affect all household members, not just the bill payer: the elderly and sick, children and young people may all be affected. Their health and ability to study and have a social life may also be undermined, which may in turn affect their future opportunities and lock them into a poverty loop.

Many energy suppliers indicate that disconnections are generally a last resort to prompt payments and safeguard the financial stability of utility companies. However, given the severe impact of disconnections on vulnerable households, it is essential to ensure that this measure is taken only in the rarest circumstances. In most Member States, suppliers are obliged to send to customers payment reminders and warnings before disconnecting their energy services. Disconnection processes vary greatly – in terms of timing and protocol – between Member States.

The European Union has made significant progress in protecting vulnerable and energy-poor customers from electricity and gas disconnections. Under Principle 20 of the European Pillar of Social Rights **everyone has the right to access essential services of good quality, including energy**. A report in 2023 showed that access to energy is the biggest challenge faced by vulnerable people. For this reason, in 2024, the EU adopted new measures under the EMD and Gas Directive to protect vulnerable households as part of a wider objective to strengthen consumer protection and empowerment. These legal changes were partly driven by Russia's unprovoked and unjustified full-scale invasion of Ukraine, which caused severe spikes in energy prices and exposed the energy vulnerability of European consumers.

Protection from and prohibition of disconnections during critical times was first introduced in 2009 and strengthened in 2019 with additional obligations on Member States to provide information on alternative measures to disconnections. The latest revision introduced through the Electricity Market Design Directive (EMD) and the recast Gas Directive (2024) aimed to ensure that all consumers have access to essential energy services. New provisions and suppliers' obligations on consumer rights and protection have been added, with a view to protecting vulnerable customers from gas and electricity disconnections (see Chapter 2 of this SWD section).

Unfortunately, **the lack of comprehensive data on electricity and gas disconnections at EU level remains a significant challenge**. Estimates suggest that the range of disconnections is quite

low across the EU, but there is a limited amount of detailed data available. In fact, what data is available is based mostly on voluntary reports from NRAs, which may not cover all energy suppliers and consumer segments, thereby limiting the representativeness and comparability of the data across the EU.

In the case of electricity, Greece (3.8%), Portugal (2.7%), and Italy (2.5%) recorded the highest percentages of disconnections in 2023. Greece (3.6%), Portugal (3.5%) and Slovenia (2%) recorded the highest levels of gas disconnections. Data from 21 NRAs show that, in 2023, disconnection due to late or non-payment accounted for around 3% of all complaints. In Portugal, the relatively high electricity disconnection rate of 2.9% led to 7% of all household complaints, the highest proportion among Member States[568].

However, it must be noted that **these data are not always comprehensive and do not take into account 'self-disconnections'**, i.e. when customers use pre-payment meters for their energy and stop recharging them. Also, data on disconnection rates might be lower where suppliers offer temporary power-supply reductions to households at risk of disconnection. Monitoring the rate of power reduction can be a useful indicator, as it may provide a more nuanced understanding of the challenges faced by vulnerable energy customers.

The objective of this Section of the SWD is to **support the implementation of Article 28a of the EMD and Article 28 of the Gas Directive**, which are aimed at protecting vulnerable households from energy disconnections.

**This document is not intended to be overly prescriptive. It acknowledges that conditions may vary from one Member State to another.** Due to the minimum harmonisation approach in both instruments, the provisions laid down in Article 28a of the EMD and Article 28 of the Gas Directive are not exhaustive, and Member States are encouraged to build upon these measures to ensure that vulnerable and energy-poor customers are protected from electricity and gas disconnections. Although this document focuses on protecting vulnerable households, **Member States are encouraged to expand prevention and protection measures to a broader range of consumers, in line with the overall drive to empower and protect them.** This is particularly significant because it is not only vulnerable households that struggle to pay their energy bills and face disconnection issues; it is a problem that affects other sections of the population too.

This Section of the SWD includes:

- focus on Article 28a of EMD and Article 28 of the Gas Directive;
- focus on defining and identifying vulnerable customers and customers in energy poverty and the importance of multi-level governance in the context of energy disconnections;
- a non-exclusive overview[569] of prevention and protection measures to avoid energy disconnections of vulnerable and energy-poor customers; and

[568] ACER-CEER_2024_MMR_Retail-1.pdf, pp. 52- 54.

[569] The case studies in this document aim to provide a diverse range of examples from different contexts and should not be considered as an exhaustive or representative sample of all possible measures. The selection of these case

- focus on monitoring and evaluating energy disconnections.

### 1.1. LEGAL AND POLICY CONTEXT

As regards energy disconnections of vulnerable consumers and people in energy poverty, the key provisions are **Article 28a of EMD and Article 28 of the Gas Directive**[570]. These two articles are worded slightly differently but, as stated in the Gas Directive[571], the legislative framework for the natural gas market should reflect the level of consumer protection and empowerment in the electricity sector.

Recital 36 of the Gas Directive highlights the need for a consistent approach to mirroring certain aspects of the electricity market in the gas market, including the protection of vulnerable customers and customers affected by energy poverty. This approach should ensure that the level of protection provided to customers is consistent across both the electricity and gas sectors, thereby preventing any potential disparities or gaps in protection. Accordingly, when transposing Article 28a of the EMD and Article 28 of the Gas Directive, **Member States should ensure that the same level of protection is provided in both sectors.**

This chapter provides a legal explanation of the two articles in the context of energy disconnections, while Chapter 3 will present an overview of the implementation of these legal provisions.

#### 1.1.1. Electricity

As explained above, the EMD is part of the EU's efforts to create a more integrated and competitive energy market. The EMD strengthens provisions on consumer protection, reflecting the EU's commitment to ensuring that all customers, including the vulnerable and energy-poor, have access to affordable and reliable energy.

Article 28a of the EMD applies to all vulnerable households and households affected by energy poverty who are connected to the electricity grid[572]. The purpose of this article is to ensure that they are protected from unjustified or unreasonable disconnections of their electricity supply. Member States are encouraged to consider extending protection measures to all customers, including small and medium-sized non-household customers.

Article 28a EMD consists of three paragraphs, each addressing a specific aspect of protection from disconnections.

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studies was based on a non-exhaustive review of existing initiatives and consultation with Member States. The case studies and practices presented in this guidance are not endorsed or identified as best practices by the European Commission. Their inclusion in this guidance does not automatically imply their compliance and conformity with the transposition of relevant EU directives, or that the Commission deems them effective in achieving their intended objectives.

[570] Transposition deadlines: 17 January 2025 for EMD and 5 August 2026 for the Gas Directive.

[571] Recital 36, Directive (EU) 2024/1788 of the European Parliament and of the Council of 13 June 2024 on common rules for the internal markets for renewable gas, natural gas and hydrogen, amending Directive (EU) 2023/1791 and repealing Directive 2009/73/EC (recast) (Text with EEA relevance), PE/104/2023/REV/1, OJ L, 2024/1788, 15.7.2024, ELI: http://data.europa.eu/eli/dir/2024/1788/oj

[572] Article 2 of Directive 2019/944 defines 'customer' as a wholesale or final customer of electricity;

***Protection of vulnerable customers***

*1. Member States shall ensure that vulnerable customers and customers affected by energy poverty are fully protected from electricity disconnections, by taking the appropriate measures, including the prohibition of disconnections or other equivalent actions. Member States shall provide such protection as part of their policy with regard to vulnerable customers pursuant to Article 28(1) and without prejudice to the measures set out in Article 10(11).*

*When notifying the Commission of their transposition measures of this Directive, Member States shall explain the relationship between the first subparagraph and the corresponding parts of national transposition instruments.*

Article 28a(1) EMD requires Member States, as part of their policy on customer protection, to ensure that vulnerable customers and customers affected by energy poverty are fully protected from electricity disconnections, thus recognising that electricity plays a vital role in crucial activities such as powering medical equipment, lighting and cooking, in compliance with principle 20 of the European Pillar of Social Rights. This shall be part of the Member States' policy on the protection of vulnerable customers, which shall ensure adequate safeguards, as outlined in Article 28(1) EMD. Member States remain free to define vulnerable customers based on their national context.

Member States shall take appropriate protection measures, including the prohibition of disconnections or other equivalent actions, which (see Chapter 6), in addition to those referred to in paragraph 28a(3) EMD, may include i) rules on debt collection ii) disconnection procedures, iii) the provision of temporary or basic supply, iv) assistance for customers struggling with energy bills and v) obligations on energy suppliers. It is up to Member States to decide how to implement the legal provisions of the article. The prohibition of disconnections is one form of protection against disconnections.

Article 28a EMD has to be interpreted in conjunction with other provisions of the Directive, such as Article 28(2) EMD which requires Member States to take appropriate measures to ensure that vulnerable customers receive the necessary supply. The protection of vulnerable households from electricity disconnections complements Article 10(11) EMD, under which suppliers shall provide household customers with timely and adequate information on support services to prevent disconnection. These may include i) sources of support, ii) pre-payment systems, iii) energy audits, iv) energy consultancy services, v) alternative payment plans, vi) debt management advice and/or disconnection moratoria. They do not constitute an extra cost to the customers facing disconnection.

Reading these articles together highlights multi-actor governance in the protection of vulnerable customers from energy disconnections, which stresses the need for coordination and cooperation to ensure effective support.

When Member States notify the Commission about the measures put in place to transpose the Electricity Directive into their national law, they shall explain how their national transposition instruments implement the protection from electricity disconnections as outlined in Article 28a(1) EMD.

***Contract termination and disconnection***

*2. Member States shall ensure that suppliers do not terminate contracts and do not disconnect customers on the grounds on which customers have submitted a complaint in accordance with Article 10(9) or which are subject to an out-of-court dispute settlement mechanism in accordance with Article 26. Such a complaint or the use of such a mechanism shall not affect the parties' contractual rights and obligations. Member States may take appropriate measures to avoid an abuse of process.*

Article 28a(2) of the EMD protects customers from contract termination or disconnection by suppliers solely because the customer has submitted a complaint in accordance with Article 10(9) EMD or is involved in an out-of-court dispute settlement mechanism under Article 26 EMD, in which the dispute concerns or may lead to disconnection. Under the above-mentioned Article 10(9) EMD final customers are entitled to a good standard of service and complaint handling by their suppliers. This means that customers have the right to submit complaints to their suppliers, which should address them in a simple, fair and timely manner.

Under the above-mentioned Article 26, final customers are entitled to out-of-court dispute settlements, i.e. access to simple, fair, transparent, independent, effective and efficient mechanisms for resolving disputes through an independent mechanism (e.g. energy ombudsman, consumer body or regulatory authority). This includes the participation of electricity undertakings in out-of-court dispute settlement mechanisms for household customers, which is mandatory unless the Member State can demonstrate that other mechanisms are equally effective in resolving disputes.

Member States should therefore ensure that if a customer submits a complaint to their supplier regarding a specific issue, the supplier cannot then terminate the customer's contract or disconnect their electricity supply solely because of that complaint[573].

The paragraph also clarifies that the submission of a complaint or the use of an out-of-court dispute-settlement mechanism shall not affect the parties' contractual rights and obligations – i.e. customers are still required to fulfil their payment duties. This ensures that the customer's contractual position remains unchanged during the complaint-handling or dispute-settlement process, and the supplier may not unilaterally modify or terminate the contract.

Lastly, the Article 28a(2) EMD allows Member States to take appropriate measures to prevent any abuse of process. This enables Member States to implement measures that prevent customers from

[573] For example, in Ireland, electricity and gas suppliers are required to prepare and submit to the Irish Commission for Regulation of Utilities (CRU) Codes of practice and Customer Charters following the principles of fair, honest, transparent, reasonable, equitable and professional behaviour, and legislative and regulatory compliance. As a minimum, suppliers are required to implement a Code of Practice on Billing, Disconnection, Vulnerable Customers, and a Code of Practice and Complaint Handling. The CRU requires suppliers to specify where disconnection of a customer's supply will not be initiated by the supplier. For instance, 'where a customer is pursuing a complaint using the complaint handling procedures specified by the supplier and the complaint is related to the reason for disconnection, the supplier may not initiate a disconnection in relation to the disputed amount until the complaint process is exhausted'. Source: Electricity and Gas Suppliers' Handbook 2023, CRU, page 13 and 42: Microsoft Word - CRU Suppliers' Handbook 2022 Tracked Change Version 17.06.2022

misusing the complaint-handling or dispute-settlement process to circumvent their contractual obligations or to unfairly delay or obstruct the supplier's actions.

***Measures to prevent disconnections***

*3. Member States shall take appropriate measures referred to in paragraph 1 to enable customers to avoid disconnection, which may include:*
*(a) promoting voluntary codes for suppliers and customers on preventing and managing cases of customers in arrears; those arrangements may concern support for customers in managing their energy use and costs, including flagging unusual high energy spikes or use in winter and summer seasons, offering appropriate flexible payment plans, debt advice measures, self-metering readings, and improved communication with customers and support agencies;*
*(b) promoting customers' education and awareness of their rights with regard to debt management;*
*(c) access to finance, vouchers or subsidies to support the payment of bills;*
*(d) encouraging and facilitating the provision of meter readings every three months, or where relevant for shorter billing periods, where a system of regular self-reading by the final customer has been implemented to meet the obligations of points 2(a) and (b) of Annex I in relation to the frequency of billing and the provision of billing information.'*

Article 28a(3) EMD sets out the measures that Member States are to take to enable customers to prevent disconnection, by providing them with support and resources to manage their energy use and costs. The list is not intended to be exhaustive, and Member States can apply other measures. The provision applies in particular to vulnerable customers and customers in energy poverty, as referred to in Article 28(1) EMD. These measures may include:

- Promoting voluntary codes: Member States may encourage suppliers and customers to draw up voluntary codes of conduct that address the prevention and management of cases where customers are in arrears. These codes may cover various aspects, such as support for customers in managing their energy use and costs, offering appropriate flexible payment plans, debt advice measures, self-metering readings and improved communication with customers and support agencies. [for more information, see Chapter 5.3];
- Promoting education and awareness: Member States may help customers to be aware of their rights and obligations regarding debt management. This may involve informing customers about available support mechanisms, such as debt counselling and their entitlements to flexible payment plans or other forms of assistance. [for more information, see Chapter 4.3];
- Providing access to finance, vouchers or subsidies: Member States may provide access to finance, vouchers or subsidies to help customers pay their energy bills. [for more information, see Chapters 4.2 and 5.2]; and
- Encouraging and facilitating the provision of meter readings at least every three months by the final consumer. This frequency can be adjusted to accommodate shorter billing periods, if necessary [for more information, see Chapter 4.1]

### 1.1.2. Gas

As explained in the introduction, the Gas Directive mirrors the provisions of the Electricity Directive, with a view to ensuring a high level of consumer protection and empowerment consistently across energy sector. The concept of disconnection in the gas package is addressed from two different angles:

- the disconnection of vulnerable people and those in energy poverty – general case (**Article 28 of the Gas Directive**)
- the disconnection of any customer in the context of the phasing out of natural gas, which is addressed by this document – included in the Citizens Energy Package – on the protection of vulnerable customers and customers affected by energy poverty during the planning and implementation of the phase-out of natural gas or when natural gas distribution networks are being decommissioned [see Section 4 of this SWD]. This is intended to ensure that the specific needs of such customers are duly taken into account in accordance with Article 13(1),(d) of the Gas Directive, as per Article 27 of the same Directive.

Under Article 28 of the Gas Directive, Member States shall prevent the disconnection of vulnerable households and those affected by energy poverty. Disconnections were mentioned in Article 3 of the Directive (EU) 2009/73, with the focus on vulnerable customers: '*Member State shall define the concept of vulnerable customers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of gas to such customers in critical times*.' The concept is now broader and Article 28 of the Gas Directive lists measures for Member States to prevent disconnections.

Recital 56 of the Gas Directive explains that gas suppliers can still disconnect their customers under certain circumstances: '*Such measures should not affect the temporary disconnection of customers by network operators in an emergency, without prior notice where that disconnection is for safety reasons, and with prior notice where feasible where it is for maintenance reasons.*'

Mirroring Article 28a EMD, Article 28 of the Gas Directive consists of three paragraphs, each addressing a specific aspect of protection from disconnections.

***Preventing the disconnection of vulnerable customers and those affected by energy poverty***

| |
|---|
| *1. Member State shall take measures to prevent the disconnection of vulnerable customers and customers affected by energy poverty. In relation to vulnerable customers, those measures shall be subject to Article 26.*<br><br>*When notifying the Commission of their transposition measures for this Directive, Member States shall explain the relationship between the first subparagraph and the corresponding parts of national transposition instruments.* |

Article 28(1) of the Gas Directive requires Members States to take a set of measures to prevent disconnections. Although the wording is slightly different from the Electricity Directive, the legislator was keen to ensure that vulnerable people and those in energy poverty receive proper protection from disconnections in the gas sector.

Article 28 has to be taken in conjunction with other provisions of the Gas Directive, including its **Article 11** setting out the basic contractual rights for gas contracts and clarifying that the supplier has a key role in providing information on alternative measures to prevent disconnection.

When Member States notify the Commission about the measures put in place to transpose Directive 2024/1788 into their national law, they shall explain how their national transposition instruments correspond to and implement protection from gas disconnections.

***Contract termination and disconnection***

*2. Member States shall ensure that suppliers do not terminate contracts with, or disconnect, customers on grounds in relation to which the relevant supplier is handling a complaint in accordance with Article 11(9) or which are the subject of out-of-court dispute settlement in accordance with Article 25, and shall not affect the parties' contractual rights and obligations. Member States may take appropriate measures to avoid an abuse of process.*

Article 28(2) of the Gas Directive refers to the same mechanisms set out in the electricity section (see paragraph 2.1 above) and should be interpreted in the same way. Like electricity consumers, gas consumers should enjoy a high level of service and complaint-management by their supplier.

Customers are entitled to submit complaints to their suppliers, which shall address them in a simple, fair and timely manner.

As in Article 26 of the Electricity Directive, the Gas Directive provides for the right to out-of-court dispute settlement, ensuring that final customers have access to simple, fair, transparent, independent, effective and efficient mechanisms for resolving disputes through an independent mechanism (e.g. energy ombudsman, consumer body or regulatory authority).

***Measures to prevent disconnections***

*3. Member States shall take appropriate measures to enable customers to avoid disconnection, which may include:*

*(a) promoting voluntary codes of suppliers and customers aiming to prevent and manage situations of customers in arrears, which may concern support to customers to manage their energy use and costs, including flagging unusual high-energy spikes or usage, offering appropriate flexible payment plans, debt advice measures, improved communications with customers and support agencies;*

*(b) promoting education and awareness of customers about their rights and debt management; and*

*(c) access to finance, vouchers or subsidies to support payment of bills.*

Article 28(3) of the Gas Directive sets out a series of measures to prevent gas disconnection, leaving Member States free to adapt them to their national circumstances.

Unlike the Electricity Directive, only three sets of measures are set out. The fourth point, 'encouraging and facilitating the provision of meter readings every three months by the final consumer', is not included here. This list is not intended to be exhaustive in that it prioritises vulnerable customers and those affected by energy poverty, as referred in Article 28(1) of the Gas Directive. These measures may include:

- promoting voluntary codes, [for more information, see Chapter 5.3]
- promoting awareness raising, [for more information, see Chapter 4.2] and
- providing access to finance, vouchers or subsidies [for more information, see Chapter 4.2 and 5.2].

## 2. DEFINING AND IDENTIFYING VULNERABLE CUSTOMERS AND CUSTOMERS IN ENERGY POVERTY TO AVOID DISCONNECTIONS

**Energy poverty and vulnerable customers are two distinct, but intertwined concepts that need to be defined at Member State level.** Vulnerability is often linked to a dependence on electrical equipment for health reasons or socio-demographic factors (such as age and education); it refers to the risk of becoming energy poor. Energy poverty, on the other hand, is a description of status and its definition of energy poverty should therefore encompass a diagnosis of its origins and its solutions[574].

Energy poverty is defined at EU level in Article 2(52) **EED.** It means a household's lack of access to essential energy services where such services provide basic levels and decent standards of living and health. The definition, taking into account the national context, emphasises that this is due to a combination of low-income, high-energy costs and poor energy efficiency. This definition is also referenced in the EPBD, which defines vulnerable households as '*households in energy poverty or households, including lower middle-income households, that are particularly exposed to high energy costs and that lack the means to renovate the building that they occupy'*. The **Regulation on the Social Climate Fund** (Regulation (EU) 2023/955) mirrors the above definitions in the context of the impact of ETS2.

Lastly, the **Electricity Directive** and the **Gas Directive** define vulnerable customers in the context of a contractual relationship between a supplier and a customer. That definition may encompass i) income levels, ii) the proportion of income spent on energy, iii) the energy efficiency of homes, iv) critical dependence on electrical equipment for health reasons, v) age and vi) other criteria.

**Defining and identifying vulnerable customers and customers in energy poverty is a key aspect of developing effective policies and measures**. This requires a broad understanding of the socio-economic status of households and their energy-consumption patterns. It is therefore

[574] Recommendation #1 of Commission Recommendation (EU) 2023/2407 of 20 October 2023 on energy poverty urges to 'Take swift steps to transpose and implement the definition on energy poverty pursuant to Article 2, point (52), of Directive (EU) 2023/1791 into national law. The national definition should distinguish the concept of 'energy poverty' from the concept of vulnerable customers, based on Article 3 of Directive 2009/73/EC, on Article 28 of Directive (EU) 2019/944 and on Article 24(1), first subparagraph, of Directive (EU) 2023/1791'.

important to adopt a flexible and comprehensive approach[575], using a wide range of indicators[576] to properly reflect the multi-dimensional nature of the phenomenon and the different population groups that may be affected. Such indicators should incorporate i) socio-economic aspects, ii) energy consumption iii) demand patterns, iv) energy prices, v) climate variables, vi) types of building, vii) dwelling conditions, viii) thermal comfort conditions and ix) energy efficiency.

Where available, disaggregated data on aspects such as smart meters, energy performance certificates and temperature sensors could also be used to refine results. Other effective ways of identifying vulnerable categories include data collected by local authorities, local organisations and communities such as hospitals, social workers and schools, advisory/observation points and one-stop shops.

**One way to improve the efficiency of support measures is through eligibility criteria based on existing data sources** such as social security records, tax returns and other government databases. The criteria for such eligibility should rely on different sets of data, thus going beyond income-related indicators and taking account of aspects relating to socio-economic and health conditions.

This approach can help to streamline the application process, reduce administrative burdens and increase the take-up of benefits among those who need them most. It reduces the burden and stigma of self-identification mechanisms, which allow individuals to identify themselves (to governmental agencies and/or energy suppliers) as eligible for benefits, helping to reach those not detected by automatic eligibility checks.

The self-identification processes should be simple and straightforward and, to make sure no one is left behind, should be available through a variety of means (e.g. online portals, phone lines, in-person, via post). The role of social services and one-stop-shops is key to providing information on available support and to showing potential inconsistencies between the pool of people they help and governmental databases.

**Case study: Automatic identification of vulnerable customers in Portugal**

The **Portuguese energy social tariff** is a social support mechanism that consists of a discount on the tariffs for access to networks of low-voltage electricity and/or low-pressure natural gas, which forms the final price invoiced to the customer for electricity and/or natural gas. Since 2016, this benefit has been accessed via an **automatic recognition mechanism after cross checking data from a number of government entities**.

[575] See for example: Energy poverty vulnerability index: A multidimensional tool to identify hotspots for local action - ScienceDirect

[576] Acknowledging the complexity and multi-dimensional nature of energy poverty, the European Commission urged Member States to clearly assess it at national level, leaving them free to adapt the approach to the national context. In the 2020 Recommendation on Energy Poverty, 13 key indicators were outlined, allowing countries to adapt to their contexts while maintaining a degree of comparability across the EU. The indicators were expanded upon in the 2023 Recommendation on energy poverty. These indicators address various factors, including low income, the proportion of household expenditure on energy, and the efficiency of energy use–particularly in housing.

Eligibility is validated centrally by the DGEG, in collaboration with the Portuguese Tax and Customs Authority and Social Security through a national interoperability platform run by the National Agency for Administrative Modernisation.
The Automatic Social Energy Tariff has led to the burden shifting from individual consumers to the government to ensure that eligible vulnerable families have automatic access to reduced energy bills.

According to evaluations provided, automating the Social Energy Tariff has led to an increase in the number of beneficiaries from 4% to approximately 20% of all the households in Portugal, an overall discount of over EUR 85 million on their invoices[577].

To ensure that benefits and support are targeted effectively and efficiently and that there are no abuses of process, **regular checks and reviews of eligibility are crucial**. This should involve periodical reviews to ensure that beneficiaries continue to meet the criteria for benefits and support. Data is updated to reflect changes in household or individual circumstances such as income, energy needs, employment status, health and family composition.

It is also important to continuously monitor and evaluate the effectiveness of benefits and support programmes, including their impact on energy poverty and vulnerability. This is with a view to optimising the allocation of resources, improving the design and delivery of such benefits and preventing errors and fraud.

## 3. PREVENTING ENERGY DISCONNECTIONS

### 3.1. STRUCTURAL SOLUTIONS AND ENERGY EFFICIENCY

One effective way to prevent energy disconnections is to address the root causes of energy poverty through **structural measures which invest in long-term energy efficiency or cheaper renewable energy sources.**

This is also highlighted by the EPBD, which provides a crucial framework for the decarbonisation and renovation of the building stock**.** Effective and well-targeted structural measures can have long-lasting positive effects on affordability, sustainability and well-being by reducing energy consumption and costs, and promoting sustainable energy practices. For example, energy renovation can reduce substantially the heating and cooling energy need of homes and the inhabitants can therefore afford a proper indoor climate with lower energy bills.

By improving the efficiency of energy use and thereby reducing excessive energy bills – which disproportionally affect vulnerable people – building renovation can directly contribute to lifting households out of energy poverty. Scaling-up the energy renovation of buildings can generate sustainable employment and boost economic activity, which indirectly contributes to the people's welfare and reduces poverty.

However, it is important that building renovations do not affect affordability. In the rental sector, rents tend to increase when a renovation is planned or carried out, leaving tenants to either pay

[577] UNPSA Database > Winners > 2020-winners > ASET.

more or leave the property. **Safeguards should therefore be developed and enforced to ensure that energy and housing are affordable.**

There is a wide range of policy options to implement structural measures such as i) grants and grant schemes, ii) low-interest loans, iii) tax policies, iv) regulations and standards, and v) information and advisory services[578]. Member States are required to design and report policies and measures to empower and protect vulnerable customers and to alleviate energy poverty in their **National Buildings Renovation Plans (NBRPs)**, ensuring consistency with other reporting exercises such as the National Energy and Climate Plans (NECPs) and Social Climate Plans (SCPs).

As outlined in the 2023 European Commission's recommendations on energy poverty, structural measures for energy efficiency and access to renewables should be prioritised to address root causes of energy poverty and vulnerability and may be accompanied by well-tailored, exceptional and temporary social measures, such as targeted income support and/or social tariffs[579] (see Chapter 4.2).

Promoting the uptake of **RESs, self-consumption, energy sharing and energy communities** can also play a crucial role in reducing energy poverty, reducing consumers' reliance on fossil fuels, lowering their energy bills and empowering them in the energy transition.

**Case study: Barrio Solar[580], Zaragoza (ES): sharing self-generated energy with families in energy poverty**

Barrio Solar is a **community energy project** in Zaragoza, Spain. By providing access to affordable and renewable energy, it helps participants reduce their energy bills, making it easier for them to pay their energy costs and prevent energy disconnections.

Barrio Solar promotes shared self-consumption in urban neighbourhoods through the installation of photovoltaic plants for shared self-consumption in community buildings in the neighbourhood. The initiative is promoted by ECODES, EDP and Zaragoza City Council, in conjunction with the Schneider Electric Foundation, the EDP Foundation and Zaragoza Vivienda. Customers of any company can participate in Barrio Solar, not only those of EDP.

In Barrio Solar, both neighbouring households and businesses that are less than 500 meters from the installation can participate without having to make any investment, only paying a small monthly bill (of EUR 6.9), enabling them to enjoy **savings of around 30% of energy on their bills**. **10% of the generated energy is destined to 20 families in the neighbourhood who are in a situation of energy poverty**, who are exempt from any monthly fee. In addition, vulnerable

[578] For more information and case studies, please consult the Staff Working Document accompanying the 2023 European Commission's Recommendations on energy poverty: SWD(2023) 647, Chapter VII)

[579] Recommendation #6, Commission Recommendation (EU) 2023/2407 of 20 October 2023 on energy poverty: ' Prioritise effective and well-targeted structural measures to address root causes of energy poverty, when it comes to energy efficiency, building renovation, thermal retrofitting (while respecting the character of the buildings), access to energy efficient appliances and to renewable energy. Member States may accompany structural measures with well-targeted measures to improve affordability of energy, such as targeted income support and social tariffs, or to temporarily support households affected by energy poverty'.

[580] Solar Neighbourhood - ECODES - Time to Act; Barrio Solar Zaragoza-Actur.

residents can also receive **free-of-charge energy audits** to improve the energy efficiency of their homes.

Finally, supporting the uptake of **smart meters and real-time energy monitoring** is key to empowering customers to manage and optimise their energy consumption, reduce waste and make informed decisions about their energy use. This can lead to more affordable bills, prevent unexpectedly high invoices and, in turn, reduce the risk of arrears and, ultimately, energy disconnections.

Smart-meter data can be used to provide tailored and effective energy efficiency advice. Real-time access to energy data enables direct communication between suppliers and customers, improving transparency and trust. Regular smart-meter readings for all customers are essential to ensure accurate billing and prevent disputes caused by estimated consumption.

### 3.2. TARGETED AND TEMPORARY DIRECT PUBLIC SUPPORT

**Specifically targeted and temporary direct public support addressing the energy expenses of vulnerable customers and people in energy poverty can play a crucial role in preventing energy disconnections**. These are vital initial measures until more structural solutions to energy poverty and/or disconnections can be implemented. Providing financial assistance and support to these categories of customer can alleviate the financial burden of their energy bills and prevent them from falling deeper into vulnerability and risk of disconnection. Such direct income-support measures should be temporary and accompanied by longer-term measures addressing the root causes of energy poverty, via, for example, energy-efficiency and fuel-switch measures.

Public measures can take various forms, including i) grants, ii) subsidies, iii) energy vouchers, iv) tax credits, v) tax exemptions, vi) direct energy bills, vii) discounts/credits and viii) other forms of financial assistance. Subsidies, for example, can ensure a direct reduction in energy bills, while energy vouchers can be used to purchase energy or pay off outstanding debts.

Targeted support programmes may offer tailored assistance to specific groups, such as low-income households or those with disabilities. These measures should be designed to target specific groups in need, such as vulnerable and energy-poor households, and should be tailored to the local and national contexts.

Public intervention can also take the form of social tariffs, which is allowed under Article 5(3) of the Electricity Directive and Article 4(3) of the Gas Directive. The implementation of such tariffs should strictly target energy-poor and vulnerable households, as price intervention affects retail-market competition and hampers incentives for energy efficiency.

**Case study: Athens introduces zero municipal taxes for energy-poor households**[581]

[581] Athens Leads Efforts to Mitigate Energy Poverty by Introducing Municipal Tax Exemptions | Covenant of Mayors - Europe

The City of Athens is becoming the first city in Europe to introduce zero municipal taxes for energy-poor households. Improving affordability and reducing the financial burden on vulnerable households helps **prevent debt accumulation and, ultimately, energy disconnections**.

This measure comes after the establishment, in January 2024, of an Energy Poverty Alleviation Office in the city, acting as a one-stop shop for vulnerable households. The Office builds on the tools and structures of the EU-funded POWERPOOR project. It aims to identify energy-poor households in Athens, provide tailored guidance and support to improve energy efficiency, help households lower energy costs and facilitate access to public funding opportunities.

To further address energy poverty, the municipal council has approved a new measure: households meeting the criteria of the national energy and climate action plan (revised in August 2024) for energy poverty are exempt from municipal taxes for cleaning and lighting.

### 3.3. CONSUMER EDUCATION AND AWARENESS

Educating consumers and helping them to understand their energy usage and costs remains a critical challenge for all stakeholders in the energy ecosystem, namely Member States, energy suppliers and local authorities. Each should take proactive steps to **enhance energy and digital literacy, and to provide all households**, particularly those facing energy poverty or vulnerability **with accessible, transparent information** [582].

It is essential to provide clear guidance on essential procedures such as bill payments, supplier switching, accessing support for financial hardship, understanding disconnection protocols and navigating appeals or ombudsman services. This is covered in EU energy law (Article 10(11) of the EMD, and Article 11(10) of the recast Gas Directive). In the Citizen Energy Package, a specific recommendation promotes the clarity, transparency and comparability of electricity and gas offers[583].

**Case study: France Rénov**[584]

'France Rénov' is a network of one-stop shops that informs, advises and supports citizens on the challenges of energy renovation and housing, and on accessible support. It offers three types of service to users:

(I) free information on any energy-renovation issue on a telephone platform (the network is made up of more than 2 700 advisors in more than 550 points of single contact);

(II) free, personalised advice on the user's energy-renovation project, which provides a summary of the renovation project, the condition of the building and the housing, the household's situation and what might be expected;

[582] Recommendation #22 of the Commission Recommendation (EU) 2023/2407 of 20 October 2023 on energy poverty suggests to 'Offer targeted training courses for energy-poor households affected by energy poverty, including those with low digital skills. Such courses should enhance the energy and digital literacy awareness of households affected by energy poverty, enable them to better control their energy bills and participate actively in the clean and just energy transition'.

[583] COMMISSION RECOMMENDATION on the summary of the key contractual terms and conditions of energy supply contracts, C(2026)2853.

[584] Le service public de rénovation de l'habitat | France Rénov''.

(iii) *Mon Accompagnateur Rénov'* provides assistance and support at each stage of the energy-renovation project, helping users overcome obstacles.

In the case of a major renovation, this support is free of charge for households in energy poverty (up to EUR 2 000 for coaching) and the financial support can cover 80% of the cost of the work, up to EUR 40 000 provided that a gain of three energy labels or more can be achieved[585].

It is equally important to ensure that every household can easily understand their energy bill, recognise the connection between consumption patterns and costs, and respond effectively to sudden price hikes; for example, analysing their usage and comparing alternative offers (and switching). Simply providing information is often insufficient for energy-poor households, who need **targeted support systems** (trusted intermediaries or community resources) to explain complex processes, answer questions and address barriers to engagement.

**Real-time energy monitoring** is an important tool that empowers energy-poor households to manage consumption more effectively and to avoid the shock of unexpectedly high bills. For this technology to be universally accessible and effective, there needs to be a coordinated roll-out of smart meters; the connected device market needs to be affordable and expanded across all Member States. This would require governments and regulators to provide sustained investment and supportive policy frameworks. When smart meters or connected devices are used properly, the technology can provide immediate, detailed insight into energy-usage patterns, enabling users to track consumption hour by hour and identify costly habits or appliances.

This approach can only be developed through simple, user-friendly tools and by helping users to understand how to interpret data and make informed decisions. It can also act as an **early warning system**, alerting users when usage approaches budget limits and helping them avoid excess charges. Beyond cost savings, real-time monitoring can encourage long-term energy awareness and sustainable behaviour that alleviates financial strain and enhances energy security.

**Digitalisation can also help suppliers to detect early signs of payment difficulty or energy stress through consumption data**. Using customer interaction tools enables suppliers to engage proactively with affected households and work with social services and public authorities to provide tailored support. It also empowers municipalities to design advanced tools[586][587] for identifying and targeting vulnerable households, ensuring timely help to address their needs.

**Case study: Bagász Legal Empowerment Project (Hungary)**[588]

This project targets energy-poor Roma communities by combining energy-literacy training (reducing usage by 27%), debt reconciliation with utilities and legal/financial mentoring. The project focuses on empowering households to manage bills, resolve debt and access support, breaking cycles of poverty through a holistic, community-driven approach. The key outcomes are: energy savings, debt relief for 60% of participants and increased consumer confidence.

[585] 202509-MPR-modeEmploi_WEB_0.pdf.
[586] Getafe's Energy poverty intelligence unit 2821.
[587] GÉODIP : L'outil pour géolocaliser les zones de précarité énergétique.
[588] BAGázs Közhasznú Egyesület - Csak esélyt adunk!.

*Why does it work?*

**- Targeted Solutions**: it addresses both symptoms (debt) and root causes (energy inefficiency and lack of awareness).

- **Community-Driven**: it uses local champions to build trust and ensure long-term engagement.

- **Multidisciplinary Approach**: it combines legal, financial and technical support for sustainable outcomes.

Article 22 EED, on information and awareness-raising, requires Member States to implement appropriate measures to promote and facilitate efficient energy use by final consumers and users.

Among such measures, one-stop shops are highlighted as a key tool[589]. Under Article 22(6) they shall provide dedicated support for vulnerable consumers, including those in low-income households and those affected by energy poverty. This is also covered in Article 18 of the EPBD, under which Member States shall ensure that one-stop shops are available throughout their territory and that these shall 'provide holistic support to all households, with a particular focus on households affected by energy poverty and on worst-performing buildings'.

In line with the above provisions, the Commission has adopted a Recommendation containing practical guidance on one-stop shops for energy efficiency and the energy performance of buildings[590]. One-stop shops play a crucial role in i) simplifying the practical roll-out of energy renovations of buildings and energy efficiency measures, ii) assisting homeowners throughout their renovation iii) supporting SMEs and microenterprises in their uptake of energy efficiency measures and solutions, and iv) raising awareness of the benefits of energy-efficiency improvements.

Their design and services can vary greatly and should be adapted to national and local circumstances and authorities' needs. Maximum benefit is derived when one-stop shops integrate a number of services that go beyond providing generic advice, when they combine services physically and online, and when their governance and financial sustainability are clearly addressed from the start and embedded in a stable governance framework.

One-stop shops play a key role in engaging, advising and building trust among vulnerable people on the long-term structural benefits of energy efficiency and energy renovation on their energy bills and household costs. Involving people with social-work skills is essential for reaching marginalised sections of the population and providing effective support.

Dedicated awareness-raising campaigns and decision-making tools, such as online self-assessment platforms, can support informed choices. Targeted outreach efforts can bridge the trust and information gap that often deters vulnerable individuals from adopting energy-efficient practices. One-stop shops can raise the awareness among the energy poor of simple, low-cost ways of

[589] For examples of One Stop Shop dedicated to energy poor households and vulnerable customers, please refer to Commission Staff Working Document (SWD/2003/647): EU guidance on energy poverty (accompanying the Commission Recommendation on energy poverty (C/2023/4080), P.58 and following).

[590] Commission Recommendation (EU)2026/536 of 10 March 2026 with practical guidance on one-stop-shop services for energy efficiency and energy performance of buildings.

improving energy efficiency and lowering bills. Confidence can be built by engaging with local communities through events, neighbourhood initiatives, door-to-door visits and public showcases of successful renovations.

Energy suppliers have a key role to play in **fostering consumer engagement** by prioritising proactive communication and robust support systems. By delivering timely, relevant and accessible information for all, including the most vulnerable customers–such as real-time energy usage alerts, personalised efficiency tips, and transparent billing updates–suppliers can help customers to make informed decisions and manage their consumption effectively.

This proactive approach helps build trust by anticipating needs and addressing potential concerns before they escalate. Complementing this, a readily accessible support centre – operational 24/7 via phone, chat, email and digital platforms – ensures that customers receive prompt, knowledgeable assistance on billing, service disruptions and technical issues. This dual focus on pre-emptive engagement and responsive support increases customer satisfaction and long-term relationships, especially welcome for people suffering from energy poverty and vulnerable customers.

## 4. PROTECTION FROM ENERGY DISCONNECTIONS

### 4.1. LEGISLATIVE PROTECTION

Legislative protection can take various forms, including bans on energy disconnections, regulations on debt collection and disconnection procedures and/or alternative supply arrangements.

**Targeted disconnection bans** can effectively protect vulnerable customers and customers in energy poverty from energy disconnections. They do not address the issue of debt accumulation, however. They are particularly critical for those customers with health conditions, who need electrical medical equipment such as oxygen concentrators, dialysis machines and ventilators, or those who require a certain indoor temperature to maintain their health. For this category of customer, energy disconnections should always be banned and alternative supply arrangements such as suppliers of last resort, back-up generators and temporary connections should always be in place to ensure continuous and reliable energy supply.

In addition to targeted disconnection bans, **seasonal bans** on energy disconnections can provide vital protection for vulnerable customers and customers in energy poverty during periods of extreme weather conditions. Energy suppliers are prohibited, under such bans, from disconnecting vulnerable customers' energy supply during specific periods of the year, e.g. winter or summer months, to prevent exposure to harsh weather conditions and potential health risks. These seasonal moratoria can protect those who are most vulnerable to weather conditions, such as the elderly, children and people with health conditions.

Seasonal moratoria are already implemented in a number of Member States. For example, in **France**, energy providers are unable to disconnect costumers between 1 November and 31

March[591]. In **Greece**, a national ban ensures that vulnerable groups cannot be disconnected during winter (November to March) or summer (July and August)[592]. In **Lithuania**, electricity may not be disconnected on Fridays, Saturdays, Sundays, public holidays, the day before a public holiday or during periods when the average daily air temperature is below −15 °C or above +30 °C.

**To be effective, disconnection bans should be carefully designed and implemented** to adapt to the specific circumstances of vulnerable customers and customers in energy poverty. For example, for seasonal disconnection bans, the periods of the year during which energy disconnections are prohibited should be clearly defined according to the national context, taking account of heating and cooling needs.

Clear procedures should be put in place and enforced to identify and target beneficiaries. Alternative supply arrangements should be provided (such as suppliers of last resort) to ensure that energy suppliers are compliant and that customers are kept informed of their rights, protections and available support. **However, (seasonal) disconnection bans do not address the issue of debt accumulation. This should be clearly explained to customers to avoid unforeseen financial difficulties when the seasonal ban is lifted.**

**Case study: Slovenia's ban on electricity disconnections of vulnerable customers**

The legislative framework governing electricity disconnections in Slovenia is enshrined in the Electricity Supply Act[593]. Under Article 33 of that Act, distribution-system operators are banned from disconnecting or restricting the electricity supply to vulnerable customers without first informing them of not only the possibility of emergency supply, but also the conditions, deadlines and procedure for taking the step.

In cases where a customer is unable to pay their electricity bill due to financial hardship and can provide supporting documentation to substantiate their situation, the distribution-system operator is prohibited from disconnecting the supply if such an action would jeopardise the health or well-being of the customer or any other household member.

The costs of emergency supply to vulnerable customers are borne by the distribution-system operator and are therefore covered by the network fee. For this reason, the prohibition of electricity disconnections of vulnerable customers is intended for extreme cases and as a last resort to protect vulnerable customers.

Vulnerable customers and those in energy poverty could also be protected by regulations on disconnection procedures; for example, in cases where disconnection is imminent, temporary or basic supply arrangements can provide an alternative to disconnection.

The **'supplier of last resort'** (SoLR) mechanism is one such arrangement, which ensures that consumers continue to receive a basic supply of energy, even if their original supplier is unable or unwilling to provide it. This mechanism typically involves appointing a new supplier to take over

591 Article L 115-3 of the French Social Action and Family Code and Decree No 2014-274 of 27 February 2014 amending Decree No 2008-780 of 13 August 2008.

592 Vulnerable Customers | HEDNO.

593 Electricity Supply Act (ZOEE) (PISRS).

the provision of energy to the customer, sometimes at a reduced rate or with more flexible payment terms.

The legislative framework for 'supplier of last resort' mechanisms varies between countries, but the overall goal is to protect vulnerable customers and ensure continuity of supply. Under Article 27a of the EMD and Article 29 of the Gas Directive Member States shall establish a supplier of last resort regime or take equivalent measures to ensure continuity of supply at least for household customers. Member States shall also ensure that when a customer is transferred to a supplier of last resort, the supplier immediately informs them of its terms and conditions and ensures uninterrupted energy supply for at least six months, or until the customer finds a new supplier.

The effectiveness of 'supplier of last resort' schemes depends on a number of factors, including how well customers are informed about the process, the affordability of the new contract and the speed at which they can switch to a better contract. If customers are unaware of their options or unable to switch quickly, they may be stuck with a supplier of last resort that is not as affordable as other suppliers. 'Supplier of last resort' schemes should be used only as temporary support and should ensure that customers can return to a market-based arrangement as soon as possible. In this way, the supplier of last resort can focus on the customers who need it the most.

**When customers are moved to a supplier of last resort, the transition should be automatic and immediate, with no lapse in supply. The tariff should be transparent and clearly communicated** to the transferred customers, ensuring that they are not placed on the most expensive default rates. Moreover, communications should be clear and transparent and customers should be provided with the necessary tools and resources to make informed decisions about their energy supply (e.g. including information on available protection, financial aid and the possibility of switching to a better arrangement).

Legislative measures on disconnection procedures could also include **measures on debt collection or debt-management support**, and specific terms that suppliers need to follow before interrupting their supply (for more information, see Section 5.2).

**Pre-payment systems**, referred to in Article 10(11) of the Electricity Directive in the context of energy disconnections, could also fall under such terms. For example, in some Member States, such as Austria, disconnections for outstanding debt are illegal if the consumer is willing to have a prepaid meter installed.

However, **pre-payment systems do not seem effective in fully protecting vulnerable customers from disconnections and in supporting people in energy poverty**. In fact, they may lead to **self-disconnections**, where households are forced to disconnect themselves from the energy supply if they are unable to afford pre-payment meter top-ups or, if they use other fuels (e.g. oil, pellets and coal) to refill their tanks. Customers could therefore be left without access to essential energy services, without a formal disconnection by their energy supplier.

Another significant challenge brought about by pre-payment systems is the difficulty in accessing tokens or other means of topping up the meters, particularly in rural or disadvantaged areas. In

many cases, households may have to travel long distances to access top-up facilities, which can be time-consuming, costly and sometimes impossible (e.g. if the pre-payment meter runs out of credit during the night or outside of business hours of top-up facilities). This can be particularly problematic for households with limited mobility, such as the elderly or those with disabilities.

Pre-payment systems often require installation and maintenance costs, which can further exacerbate the socio-economic difficulties faced by vulnerable households.

**Proper safeguards and protection should be in place to prevent the negative consequences of pre-payment systems**. For example, installation and maintenance costs should be kept to a minimum and tariffs for users of prepaid meters should be no higher than for any other energy customers. Energy companies should therefore collect outstanding debt through a process separate from the prepaid meter system to ensure that energy is supplied at affordable prices. Lastly, self-disconnections should be monitored to gain a clear picture of the frequency and impact of the problem.

### 4.2. ASSISTANCE FOR CUSTOMERS STRUGGLING WITH ENERGY BILLS

For vulnerable customers struggling to pay their energy bills, financial assistance programmes can be a crucial safety net. As seen in Chapter 4.2, these programmes can take various forms, including subsidies, energy vouchers and targeted support. Financial assistance is particularly crucial when customers have already reached a level of vulnerability that could expose them to energy disconnections, or when they have already been disconnected. Debt management and relief options can provide a pathway back to financial stability.

**Debt-payment plans** allow customers to repay their outstanding debts in manageable instalments, rather than facing a large, upfront payment. By breaking down the debt into smaller, more affordable payments, customers can avoid the stress and financial strain of having to pay off a large debt all at once.

In some cases, customers could be offered payment plans with no interest rates. For example, in Lithuania, if vulnerable consumers fail to pay for electricity or related services by the deadline, late-payment interest is not charged for three months from the date of the missed payment.

Debt-payment plans should be tailored to meet the individual needs of each customer, taking into account their income, outgoings and financial situation. In cases of extreme hardship, **debt waivers and debt-forgiveness programmes** can help customers who are facing significant financial difficulties, such as those who have experienced a job loss, illness or other unexpected expenses. If these programmes are coupled with tailored support and assistance, they can help reduce or eliminate the customer's debt, giving them a chance to rebuild their financial stability.

In this context, **debt-management support services** play a critical role in providing vulnerable people with guidance and credit counselling on how to manage their energy debt, including advice on budgeting, payment of bills and energy efficiency to reduce their energy consumption.

They can also help customers to understand their rights and options, and to access available financial assistance and support programmes. **Advice hubs, one-stop shops, consumer helplines**

**and easy and transparent communication channels** are key measures to provide customers with the information and support they need to manage their energy bills and avoid disconnection (see also Chapter 5.2).

Bundling multiple support services and ensuring that vulnerable customers receive coordinated support from various services can help provide a more comprehensive and effective response to their complex needs, addressing not only their immediate debt concerns but also their long-term financial stability and energy affordability (see also Chapter 5.3 on suppliers' obligations)**.**

**Case study: The Dutch disconnection policy: preventing disconnection with debt assistance by early warning signals**

Since 2021, **Dutch municipalities have been obliged to offer debt assistance** based on early warning signals of overdue payments sent by energy suppliers, health insurance providers, landlords, housing companies and drinking-water companies. This allows for early intervention, thereby preventing uncontrolled accumulation of debt, in compliance with the General Data Protection Regulation[594].

Following the early warning signal, municipalities contact the customer within four weeks to offer debt assistance and to implement debt relief policies, which the person is free to accept or refuse. Should this attempt prove unsuccessful, and the supplier intends to terminate the contract (which will lead to a disconnection), the supplier has to notify the municipality of 'crisis'status. The municipality will then take appropriate measures, stepping up efforts to reach the consumer and provide support.

The outcome of the intervention is reported back to the creditor, which engages in a 'debt truce' of 30 days. Before the debt settlement, a six-month stabilisation phase allows the municipality to submit a debt proposal to the creditor based on the customer's ability to pay. Where the offer does not cover the full debt, the creditor can agree to waive part of the debt, bearing the cost.

**This broad protection applies to every consumer**, so anyone struggling to pay their bills can receive support. An evaluation report finalised in June 2025 concluded that the early warnings were effective in preventing and reducing problematic debt[595].

To protect the most vulnerable from energy disconnections, it is therefore important to **provide comprehensive and tailored financial assistance to customers struggling to pay their energy bills**, including debt-management assistance and debt waivers in the most extreme cases. Situations should be assessed on a case-by-case basis, and measures should aim to prevent customers from falling back into debt and vulnerability.

### 4.3. SUPPLIERS' RESPONSIBILITIES AND PROTECTION OF CUSTOMERS

As the primary contact point for customers, suppliers play a crucial role in ensuring that households are not unfairly disconnected from energy services. For this reason, rules should be laid down on debt-collection and disconnection procedures, especially in the case of vulnerable customers.

A key aspect is the implementation of a multi-channel, step-by-step disconnection procedure that takes customers' needs and situations into account. Customers should be contacted through various

[594] Parliamentary Paper 35316, no. 3 | Overheid.nl > Official Announcements.

[595] Evaluation of the Early Detection Act in the Municipal Debt Assistance Act | Report | Rijksoverheid.nl.

channels such as telephone, email and online portals. Door-to-door services could also be considered as a last resort.

Disconnection procedures should include measures such as long notice periods, ideally 30-60 days, to allow customers to take corrective action, flexible repayment options, deferred payment plans and debt forgiveness in cases of extreme hardship. For example, suppliers could offer payment plans that allow customers to pay their energy bills in small, tailored instalments, rather than in a single lump sum. This can help to reduce the financial burden and prevent debt accumulation.

Before going ahead with a disconnection, suppliers should always refer customers to social support services and send several reminders.

**One possible step-by-step procedure for energy disconnections that takes the circumstances of vulnerable households into account:**

- Initial communication and notification: first disconnection notice at least **60 days before** the planned disconnection date. This should clearly state the outstanding balance and due date, and should contain information regarding available payment plans and support programmes, contact information for assistance and the consequences of non-payment. Suppliers should use at least three different communication channels to ensure that the customer or their representative has received the information, such as postal mail (hard copy), phone call (personalised call or automated message), SMS and email. The notice should be translated in different languages, depending on the situation.
- Support and payment alternatives: Suppliers could offer vulnerable customers **deferred payment plans** tailored to household capacity and **referral to social services** or local community aid organisations. A dedicated customer-support representative or team could be assigned to the case to assist the customer (via phone or in-person support) and encourage them to contact the provider if they are facing difficulty.
- Second notice and reminder: the second notice **30 days before** disconnection, repeating the communication via different communication channels, emphasising the urgency of the situation and setting out the available support options.
- Final warning notice: final notice **10 days before** planned disconnection, via different communication channels, clearly stating that disconnection is imminent unless payment is made or some other arrangement is reached. In the case of electricity, a limited period of adjusted minimum electricity supply (ensuring access to a basic level of energy for essential needs) could be offered before disconnection.
- Disconnection: disconnection may take place only if the customer has been contacted multiple times, no reasonable payment arrangement or assistance have been agreed upon and the customer is not in a poor state of health.

**The customer should receive information on how to restore the service. Suppliers could continue offering payment plans and referrals to social support.**

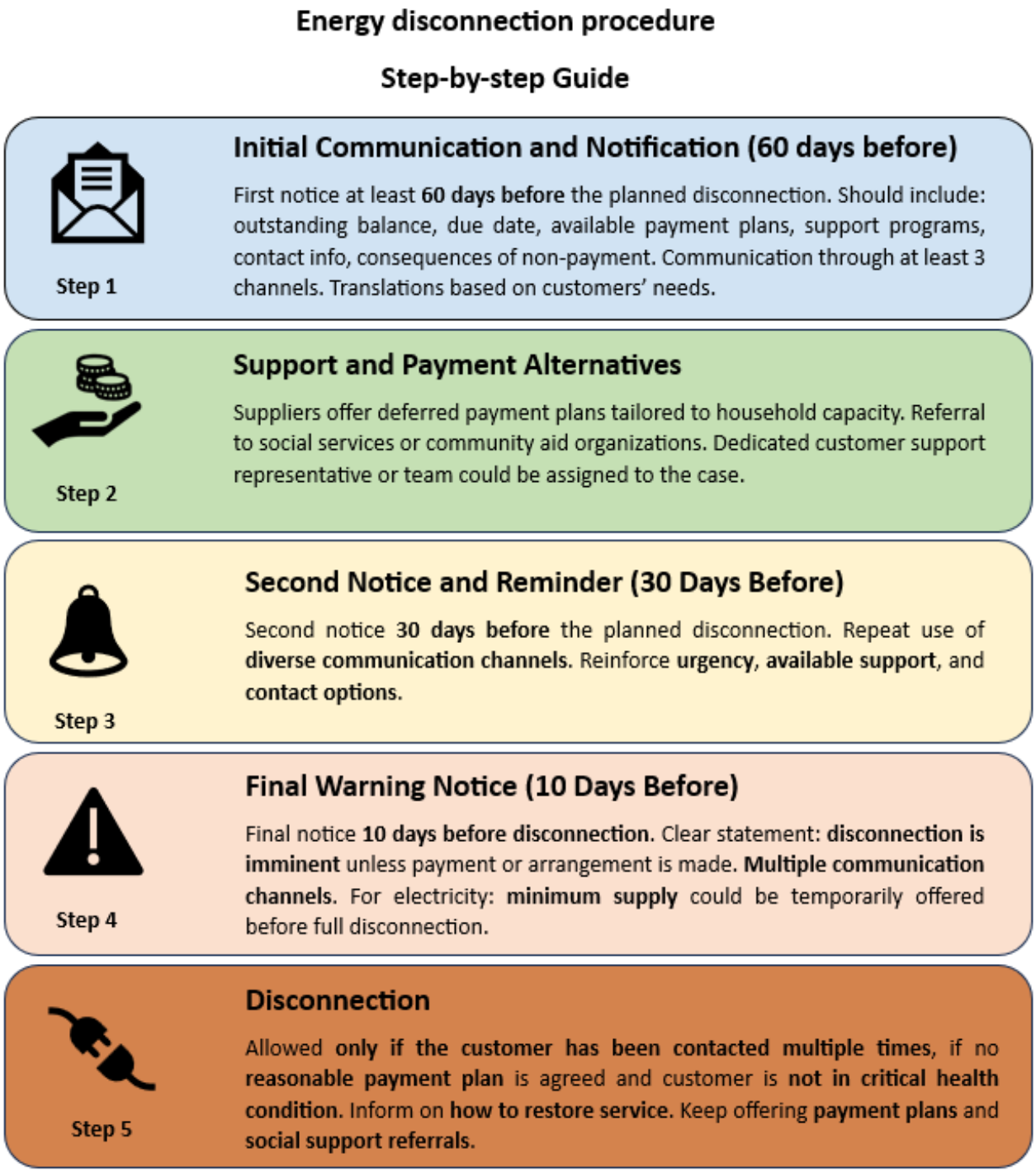



*Figure 1 Possible step-by-step disconnection procedure, European Commission.*

**Case study: Germany's disconnection 'avoidance agreements' before energy disconnections**[596]

Since 2023, the German legal framework requires suppliers (basic suppliers and suppliers of last resort) to **offer customers an 'avoidance agreement'** ('Abwendungsvereinbarung') **before disconnecting** them due to late payment, allowing customers in arrears to arrange interest-free instalment payments with the supplier to settle their energy debts.

The avoidance agreement has to be offered to the customer, who may ask to receive the required documentation, failing which they will receive it in any case, at the latest with the announcement of the disconnection. The standardised formular needs to incorporate:

- an agreement to pay a monthly fee (without interest) to pay off the debt,
- the supplier's commitment to continue the supply under the same contractual obligations as long as the customer fulfils their payment duties and
- a description of the disconnection avoidance agreement in simple language.

The agreed monthly instalments need to be a reasonable amount and timeframe, usually between 6 and 18 months. If the amount to be paid back exceeds EUR 300 euro, the time frame will expand to 12-24 months.

In the case of electricity, suppliers could offer a **limited period of minimum supply before disconnection**, ensuring that customers have access to a basic level of energy to meet their essential needs. This minimum supply should be adjusted to the household's characteristics and composition and be sufficient to power essential appliances such as lights, refrigerators and a microwave.

The electricity reduction should run alongside other protection measures such as the winter truce. In many cases, the period of reduced electricity supply prompts customers to engage with their supplier and find adequate solutions. This has proven to be an effective approach in France, Italy, Spain, Luxembourg and Portugal, albeit with different levels of reduction. However, this measure might not be feasible in some Member States and regions due to technical reasons or climate conditions.

Additional measures that suppliers could take to support customers, sometimes in partnership with other stakeholders, include:

- **Personalised Assistance:** offering customers tailored advice on energy-bill assistance and the most appropriate arrangement based on their energy needs and expenses. This should include information on the most appropriate tariff and payment plan, which should be communicated through multiple channels (phone, online and mail). As part of one-stop shops or social services, debt advisors can also offer support by mediating between customers and suppliers, for example, when arranging payment plans.
- **Clear Communication:** communication with customers has to be straightforward and easy to understand (using plain language), both linguistically and numerically. Suppliers can tell

[596] EnWG - Law on Electricity and Gas Supply.

customers about protection and financial support, such as local assistance programmes, energy audits and advisory services. This information should be included in every bill in English and other languages, depending on the context and needs, to ensure that language barriers do not prevent vulnerable customers from understanding the situation and learning about available support.

- **Consumption Alerts:** apps (based where applicable on the Common European Reference Framework for energy saving applications[597]currently under deployment in several Member States with support from the Digital Europe programme[598]) and websites should be used to facilitate the monitoring of energy consumption and to notify customers about their energy usage to help them stay within budget, e.g. when energy consumption increases and exceeds the current monthly payment rate. In addition, energy-saving tips and demand-flexibility benefits could be publicised via websites, social media and other platforms to help vulnerable customers reduce their energy consumption and lower their energy bills. Together with other stakeholders, suppliers can further support this goal through education and awareness-raising initiatives.
- **Voluntary Engagement Codes**: set up voluntary codes involving supplier and consumer associations, and possibly DSOs, to promote engagement with customers and mutual trust. This allows suppliers to understand the root causes of why customers may be struggling with their bills and to guide them to the most appropriate support measure.

**Case study: Ireland's Engage Code to never disconnect an engaging customer**

In 2014, the Electricity Association of Ireland (EAI) created its 'Energy Engage Code', which is a **commitment from all major suppliers never to disconnect a customer who is engaging with their supplier**. This concerted effort from all suppliers has seen a reduction in the number of customers disconnected since its introduction.

In 2023, the EAI relaunched the code to incorporate elements of **Universal Design,** which is a set of common principles aiming to ensure all Irish energy consumers can access, understand and use a product or service to the greatest practicable extent regardless of their age, ability or disability. The revamped code also received a 'plain English' stamp from the National Adult Literacy Agency to ensure accessibility to as many energy consumers.

The code clearly sets out the protection received by customers and explains what customers can expect when they engage with their energy supplier. This illustration of the customer's situation, providing the information they will need in their communication with their supplier, can help customers overcome any anxiety in contacting their supplier, and seeks to empower customers to take positive action on their energy bills.

### 5. MULTI-LEVEL GOVERNANCE IN THE CONTEXT OF ENERGY DISCONNECTIONS

**Due to its multi-dimensional nature, effective protection of vulnerable costumers requires a coordinated effort and cooperation among various stakeholders**, including national and local governments, regulatory authorities, energy suppliers, consumer organisations, ombudsmen and

[597] COM(2022) 552 final on Digitalising the energy system - EU action plan.

[598] ECLIPSE: Advancing the deployment of the Common European Reference Framework for Energy-saving Applications (CERF) | Shaping Europe's digital future.

social services. All of these actors are responsible for ensuring that vulnerable customers are shielded from the adverse effects of energy disconnections.

Fostering coordination among this wide range of actors and sharing best practices will help develop and implement targeted and effective measures to prevent energy disconnections, improve energy affordability, support costumers and ultimately reduce vulnerability. In fact, as highlighted by Commission Recommendation (EU) 2023/2407 on energy poverty, ensuring enhanced governance and a holistic approach are crucial to tackling energy poverty[599].

National governments play a pivotal role in setting the overarching framework for protecting vulnerable energy consumers. They are responsible for defining and identifying vulnerable and energy-poor customers, and should provide clear guidance and implement support mechanisms to aid those at risk of disconnection. By giving NRAs the necessary power and resources, Member States can ensure that these bodies are able to effectively enforce rules, monitor compliance and swiftly address non-compliance issues. Regarding the monitoring of the level and effectiveness of market opening and competition at wholesale and retail levels, Article 59(1)(o) of the Electricity Directive requires stipulates that NRAs shall monitor disconnection rates and complaints by household customers. They shall provide any pertinent information and bring any relevant cases to the appropriate competition authorities. Moreover, Article 59(1)(r) of the Electricity Directive requires that regulatory authorities shall help to ensure, together with other relevant authorities, that the consumer protection measures are effective and enforced. .

Local governments are also instrumental in identifying and supporting vulnerable households. They can allocate funding to local initiatives aimed at improving energy efficiency and affordability, tackling energy poverty and encouraging people's participation in the energy market (e.g. through awareness raising and support for one-stop-shops). Social-welfare authorities and social workers at both national and local level are additional key partners in identifying, reaching and supporting vulnerable individuals and families.

At the same time, energy suppliers and service providers have to provide clear billing information, flexible payment solutions. They should also provide information on prevention measures to avoid disconnections and implement those measures where applicable. Another key role is played by the energy ombudsman, which functions as an independent body dedicated to the out-of-court settlement of disputes between consumers and energy providers. They raise awareness of customer rights and protections, mediate disputes and provide an impartial platform for customers to voice complaints. By collecting and analysing data on sector-wide and supplier-specific complaints and abuses, the ombudsman can identify systemic issues and recommend improvements to regulatory frameworks and industry practices. Consumer organisations also play an important role to prevent energy disconnections, offering mediation and advocacy services and educating consumers about their rights and available protection.

[599] Recommendation #10, Commission Recommendation (EU) 2023/2407 of 20 October 2023 on energy poverty: 'Ensure an enhanced governance with a holistic approach to tackle energy poverty, including cross-departmental and vertical collaboration across national, regional, and local governance structures, involving closer engagement with vulnerable households and relevant energy and social partners and stakeholders.

**Case study: Coordination Office for Combating Energy Poverty (kea)[600], Austria**

The **Austrian Coordination Office on Energy Poverty** (kea) was established in 2023 as a central coordination and knowledge centre for energy poverty in Austria. Kea is a bridge-building institution that brings together a wide range of stakeholders in the fields of energy, climate protection, housing and social issues. It works with various institutions such as social-aid organisations, public administration bodies at federal, state and municipal level, and with energy companies and energy-advice centres to discuss trends in energy poverty in Austria and to develop solutions.

Kea promotes cooperation and networking between all these actors and develops and coordinates measures and recommendations to combat energy poverty, by publishing reports and studies, among other activities. It also provides information to households, energy suppliers, local authorities and other institutions and organisations. Given its bridge-building structure, it is well placed to offer **advice and support to customers facing difficulties in paying their energy bills and at risk of energy disconnection**.

## 6. MONITORING AND EVALUATION

There is still a lack of full clarity on the causes, frequency, duration and consequences of energy disconnections. Their multi-faceted causes and the lack of data make it challenging to completely understand and tackle this issue. Research should be carried out and data gathered to identify the effects of energy disconnections on vulnerable customers, including the physical and mental health impact, and the social and economic consequences.

Regulatory oversight and regular monitoring are vital in order to check the effectiveness of measures aimed at protecting customers from unfair energy disconnections. For instance, independent regulatory bodies should review the notice periods given by energy suppliers to ensure that they are appropriate and comply with relevant regulations. They should also assess the availability and accessibility of payment plans, and the level of support offered to vulnerable customers.

**Transparency and accountability are essential components of regulatory oversight, of which comprehensive annual reporting on disconnections and support measures taken are key aspects**. The indicators used for monitoring and assessing the effectiveness of disconnection safeguards should be comprehensive. They should include i) top-down indicators (such as the number of households receiving social tariffs or energy cheques, number of customers under 'supplier of last resort' regimes), ii) bottom-up indicators (such as the number of households supported by advisory points, one-stop shops, social workers and the number of disconnections avoided through third-parties interventions) and iii) horizontal indicators (such as the total number of disconnected (vulnerable) households, households with arrears on energy bills, qualified reminders sent, payment plans offered, contract terminations, notices sent to social services or municipalities, pre-payment metering and energy debts). This would also make it possible to

600 Coordination Office for Combating Energy Poverty.

identify areas for improvement and implement corrective measures to address any shortcomings or abuses.

The **collection of data on self-disconnection** (i.e. when households are forced to disconnect themselves from the energy supply due to financial hardship without being actually disconnected by the supplier) is also key to gaining a deeper understanding of the magnitude and impact of energy disconnections on vulnerable customers. To this end, monitoring the number of households with very low energy usage and pre-payment meters installations could effectively identify self-disconnecting customers.

## 7. CONCLUSIONS

Access to energy is an essential service under the European Pillar of Social Rights. Protecting vulnerable customers and customers in energy poverty from electricity and gas disconnections is thus of utmost importance given the severe health, social and economic consequences of such action. The provisions of Article 28a of the EMD and Article 28 of the Gas Directive provide a framework for Member States to implement measures to protect vulnerable households from energy disconnections.

Due to the minimum harmonisation approach in both instruments, the provisions are not exhaustive and leave it to Member States to ensure the most effective consumer protection in the national context. **The transposition** of the provisions and all those relating to energy poverty and vulnerable customers is key to achieving these objectives. However, responsibility does not lie solely with the Member States. Local governments, regulatory and social welfare authorities, energy suppliers and consumer organisations all have a vital role to play.

The case studies and practices presented in the document demonstrate the **importance of a holistic and informed approach to protecting vulnerable customers** and addressing the complex root causes of disconnections. Prevention and protection measures include i) structural energy-efficiency solutions, ii) consumer education and awareness, iii) direct public support, iv) implementing legislative protection, v) assistance for customers struggling with their energy bills and vi) enforcing suppliers' obligations. However, **the most effective measures are those combining these elements, bearing in mind that there is no one-size-fits-all solution and that specific needs and circumstances should be taken into account.**

While this document is primarily focused on safeguarding vulnerable households, its principles and measures can enhance consumer protection for all electricity and gas customers and underpin the fight against energy poverty.

## SECTION 5: PROTECTION OF VULNERABLE CONSUMERS AND CONSUMERS AFFECTED BY ENERGY POVERTY DURING THE NATURAL GAS PHASE-OUT

### 1. INTRODUCTION

The European Union has established the objective of achieving climate neutrality by 2050, with an intermediate target of reducing greenhouse gas emissions by 55% compared to 1990 levels by 2030. In order to achieve climate neutrality, the energy sector will need to be fully decarbonised.

In recent years, gas prices have been volatile, with high price peaks in the wake of the Russia's war against Ukraine and the subsequent halting of gas deliveries. Russian gas has been replaced with gas coming from other sources, including LNG. It seems unlikely that gas prices will return to pre-2022 levels.

This situation has underlined the importance of reducing Europe's energy dependence, switching to locally produced, carbon-free electricity to replace imported fossil fuels. The start of the ETS2[601] (scheduled for 2028) will also contribute to these efforts, while also raising revenues which Member States can use to support the most vulnerable and energy poor households through the transition away from fossil fuels, including through the Social Climate Fund. Against this backdrop, several Member States, e.g. Austria, Denmark, Germany and Netherlands are already planning and starting to implement their natural gas phase-out, which will be a gradual and long-term process. Although renewable gases may have a limited role to play, it seems likely that, with a phase-out of natural gas, significant parts of the gas distribution network will become obsolete and will be decommissioned.

Recent guidance for the EPBD has clarified that Member States need to plan policies and measures to (i) replace the fossil fuels that boilers combust; and/or (ii) replace the boilers themselves. It has also provided examples of pathways and measures that – on their own or combined – can form the basis of a national or regional implementation plan. Given the wide variety of energy systems across Member States, the strategy and pace of decarbonisation of heating will be set at national, regional and/or local level with a view to phasing out the use of fossil fuels in boilers by 2040.

Gas pipelines have an economic and technical lifetime of at least 40 years. In Member States that are on the path to phasing out natural gas in households, new investment in gas infrastructure should be considered in order to prevent stranded assets. Otherwise, when the number of household consumers of natural gas starts to diminish significantly, there is a risk of steep increases in network costs for the remaining consumers. Gas operators will need to develop clear and transparent long-term policies, and gas infrastructure will need to be adapted accordingly. Some countries have reduced depreciation periods for investments in gas distribution infrastructure; in

[601] Directive 2003/87/EC of the European Parliament and of the Council, as amended in 2023, is the cornerstone legal act establishing the ETS Framework and explicitly includes the provisions for ETS2. Delegated Regulation (EU) 2019/1122 sets out provisions related to the opening of ETS2 accounts and handling of emission data from 2025 onward to prepare for full implementation starting 2027.

some cases municipalities can designate areas where gas connections are banned, in which case existing buildings in these areas also lose the right to be connected[602].

To ensure the smooth phase-out of natural gas in the household sector, national, regional and local authorities will need to develop long-term comprehensive plans for its legal, administrative, technical and financial aspects and to plan for alternative source of energy, in accordance with national and local climate and energy goals. This will require carefully designed and coordinated policies and implementation frameworks at all levels of administration. Local authorities will have a key role in implementing these measures. They will need the capacity (skills, human resources, funding and financing, legal and regulatory) to fulfil this task.

The implementation of a gas phase-out at the distribution grid level may have a significant impact on households concerned. Especially in Member States with a strongly developed gas distribution network, millions of households will be facing the decision on what alternative to use for their heating and cooking, particularly in case they will not have access to renewable gases to replace natural gas.

For people living in rented houses and/or multi-apartment buildings, there are additional challenges. People living in rented homes generally depend on the motivation of their landlord to bear the upfront cost of adaptations to the dwelling, even if national regulatory and fiscal frameworks shape this willingness. In multi-apartment buildings the issue of coordination and distribution of costs and benefits often acts as a hurdle.

In this process, many people, especially vulnerable customers and people in energy poverty, may not be in a position to switch to alternatives. However, there are now clear requirements in the EPBD for public authorities to provide targeted and higher support (information, financial, technical, legal) to vulnerable households, including vulnerable tenants.[603] Gas network decommissioning may put them at risk of being the last users locked in to natural gas and paying increasing network fees, while wealthier consumers switch to sustainable options. It is vital to ensure that their interests are protected during this transition and that every household can take part.

A rushed and poorly designed natural gas phase-out risks causing major disruption to significant sections of the public. This may lead to a lack of engagement among those who need to take action to implement the plans or even total resistance to playing their part. Any successful natural gas phase-out policy will therefore have to be designed in a way that places the general public at the forefront. It will be crucial to provide the public with timely information and support and to ensure their commitment, based on the principles of simplicity, transparency and accessibility.

Member States are in different situations as regards the use of natural gas in the household sector. At EU level according to EUROSTAT data in 2022 about 60% of space and water heating in households came from direct (boilers onsite) and indirect (district heating) use of fossil fuels. In

[602] In the Netherlands, disconnection is possible after an eight-year notice period in designated gas-free areas. See Gas grid regulation in the context of net zero transitions: A review of seven European countries

[603] The key provisions stem mainly from Article 3 on the National Building Renovation Plans, Article 9 on National trajectories, Article 17 on Financing and Article 18 on one-stop shops.

2022 direct use of fossil fuels for space and water heating in households accounted for more than 80% of individual heating in Ireland, Luxembourg, the Netherlands and Belgium but less than 10% in Sweden, Finland, Estonia, and Malta.

Member States must submit their NBRPs by the end of 2026. These must include policies and measures aimed at completely phasing out fossil-fuel boilers in buildings by the indicative target date of 2040. This can be achieved by replacing individual boilers with alternative solutions such as heat pumps, solar thermal installations, or efficient district heating, by replacing the fossil fuels burnt in boilers with renewable fuels, or by a combination of measures from these two broad categories.

While some Member States have already started implementing their natural gas phase-out plans, others have made less progress. They also differ in a number of other ways such as i) types of housing ii) geographical scope, iii) the average age and level of energy efficiency of the housing stock, iv) population density (urban and rural), v) climatic conditions, vi) average income vii) property value and viii) the predominance of individual or collective heating systems. It is therefore clear that the path towards a phase-out of natural gas in the household sector will depend on specific national, regional and local circumstances.

### 1.1. OBJECTIVES

The objective of this document is to provide Member States with a framework for drawing up and implementing plans to phase out natural gas in a way that protects and enables energy poor customers and vulnerable customers. It outlines general principles and points for consideration when devising national and local strategies, without overlooking specific national and local contexts. It provides suggestions on establishing:

- a helpful environment to make a natural gas phase-out as smooth as possible for households (Section 2); and
- a framework for consumer involvement and empowerment (Section 3).

Both sections focus primarily on protecting energy-poor and vulnerable households, but many of the proposed measures will benefit all household customers.

**Member States are invited to refer to this section of the Staff Working Document when transposing the Gas Directive and when drawing up plans for a natural gas phase-out at national, regional or local level.**

### 1.2. SCOPE

This document outlines how Member States, working together with regional and local policymakers, energy regulators and stakeholders, can place the general public at the forefront when developing and implementing their gas phase-out plans in the household sector. Member States are encouraged to focus on supporting and involving vulnerable customers and those affected by energy poverty. The suggestions focus on addressing the difficulties involved in carrying out a gas phase-out in existing buildings currently connected to the gas distribution

network and the decommissioning of the existing gas distribution network due to a near or complete absence of economically feasible renewable gas.

## 1.3. LEGAL AND POLICY CONTEXT

### 1.3.1. Gas Directive

The Gas Directive needs to be transposed into national law by 5 August 2026.

Under Article 27 of the recast Gas Directive the Commission is required 'to provide guidance on the protection of vulnerable customers and customers affected by energy poverty during the planning and carrying out the phase-out of natural gas or when natural gas distribution networks are being decommissioned, in particular to ensure that the specific needs of such customers are duly taken into account'.

Under Article 13 when planning and carrying out the phase-out of natural gas, specific needs of such customers must be duly taken into account and, where applicable, appropriate measures taken with the aim of removing adverse effects of the natural gas phase-out. Such measures may include the use of public funding and funding facilities established at Union level.

Article 26 obliges Member States to take appropriate measures to protect final customers, and to ensure that there are adequate safeguards to protect vulnerable customers and customers affected by energy poverty. Each Member State must 'define the concept of vulnerable customers which may refer to energy poverty'. This definition needs to be consistent with the concept of vulnerable customer as defined by a Member State under the 2019 Electricity Directive, as amended by the 2024 Electricity Directive.

Article 38(4) and (5) require that Member States develop legal frameworks that would allow transmission system operators and DSOs to refuse access or connection, or to disconnect, natural gas network users under specifically defined circumstances.

The refusal of access and connection, as well as the disconnection can be allowed if the decommissioning of the natural gas networks is foreseen in the national network development plans developed under Article 55 of the Gas Directive and/or the local network decommissioning plans developed under Article 57 of the Gas Directive. In the case of very small distribution systems, where no decommission plans are mandated the relevant authority would have to have been informed of the envisaged decommissioning of the relevant part of the network.

The article requires that the regulatory framework established by Member States ensures that decisions to refuse access and connection, and to disconnect are based on objective, transparent and non-discriminatory criteria developed by the regulatory authority. This framework needs to take account of the interests affected, the existing requirements to reduce or switch from natural gas consumption and the local heating and cooling plans established under the EED (see below). Member States also must take appropriate measures to protect network users when allowing disconnection.

Under Article 57 Member States are required to ensure that DSOs develop network decommissioning plans where a reduction in natural gas demand requiring the decommissioning of natural gas distribution networks or parts of such networks is expected. The development of these plans would be mandatory for DSOs that serve more than 45 000 connected customers by 4 August 2024.

The plans are based on the heating and cooling plans developed in accordance with Article 25(6) of Directive (EU) 2023/1791 and take into account the demands of sectors that are not covered by the heating and cooling plans. These plans must facilitate the protection of final customers (Article 13) and take their rights into account (Article 38(6)).

The phasing out of natural gas goes hand in hand with measures to promote the energy performance of buildings, so the legislation on energy efficiency and energy performance of buildings needs to be taken into account.

#### 1.3.2. Energy Efficiency Directive

The EED establishes 'energy efficiency first' as a fundamental principle of EU energy policy. In addition to general measures to empower and protect consumers, it places the emphasis on alleviating energy poverty. The Directive requires Member States to prioritise energy efficiency improvements for vulnerable customers, individuals affected by energy poverty and those living in social housing.

#### 1.3.3. Energy Performance of Buildings Directive

The EPBD aims to support the increase of the rate and depth of renovations in the EU, particularly for the worst-performing buildings in each Member State. It sets a long-term vision for achieving a zero-emission building stock by 2050 and guides Member States in their efforts to this end. Alleviating energy poverty is a major theme throughout the Directive.

The Directive acknowledges the differences between Member States in terms existing building stock, geography and climate and gives governments the freedom to decide on the renovation measures best suited to their specific national context. The Directive facilitates targeted financing to investment in the building sector, complementing other EU instruments and fighting energy poverty by supporting vulnerable households. Article 17(19) requires that Member States ensure that there are safeguards for tenants, such as rent support and caps on rent increases.

#### 1.3.4. Renewable Energy Directive

RED III sets out the EU's renewable energy targets and support mechanisms for the deployment of renewable energy sources. Under Article 23 Member States are obliged to ensure that low-income or vulnerable households, who would not otherwise have sufficient upfront capital to benefit, have access to support measures.

#### 1.3.5. Energy poverty recommendation

Commission Recommendation (EU) 2023/2407 on energy poverty, which is accompanied by a SWD, gives Member States advice on how to implement legislation: diagnosis of energy poverty,

monitoring by means of indicators, tackling energy poverty with structural measures and measures to improve affordability of energy. It recommends prioritising targeted structural measures to address the root causes of energy poverty (e.g. energy efficiency measures and access to renewable energy) and to provide tailor-made information and advice to energy-poor households, including in the rental sector. Another key area is targeted support to access energy efficiency, renewables and self-consumption schemes, including the development of innovative and/or dedicated financing mechanisms.

## 2. AN ENABLING ENVIRONMENT

The phasing out of natural gas is a lengthy and complex process. To ensure that it is planned and implemented in an optimal way, one should also consider the legal, regulatory (including infrastructure planning and financing) and administrative environment in which it takes place. While all Member States administrations have their specific characteristics that will influence decision-making and implementation, there are some issues that merit attention in every setting. The following issues should be taken into consideration in any situation where natural gas is being phased out.

### 2.1. COMPREHENSIVE PLANNING AND COORDINATION ACROSS ENERGY VECTORS THROUGHOUT THE PROCESS

The phasing out of natural gas amounts to a transformation of the energy system with high political relevance and potential for conflicts of interest. Successful implementation requires a strong and long-term commitment from the public administration and thorough planning with public bodies in the lead.

Municipalities are key players in implementing a local natural gas phase-out, but they can only act together with national and regional administrations. While the distribution between centralised and decentralised planning and roll-out will depend on Member States' specific administrative set-up, every scenario will require joint planning and implementation to be coordinated between the different levels of administration.

Local and regional energy agencies in the EU can play an important role in planning and implementing natural gas phase-out strategies by acting as coordinators, technical advisors and facilitators between municipalities, households and private stakeholders. They can support local authorities in developing data-driven energy transition plans, assessing energy demand and infrastructure needs, and identifying viable alternatives such as district heating, renewable gases and electrification. These agencies can also help secure EU and national funding, promote stakeholder engagement through public consultations, and ensure that policies align with regional development goals and just transition principles.

The Gas Directive provides a legal basis for network decommissioning plans for DSOs. To ensure coherent action, it emphasises the need to involve all relevant stakeholders, including public administrations, city planners, environmental agencies, residential estate building agencies, engineering bureaus, energy companies (network and suppliers), installers, consumer organisations, property management, housing companies and residents.

The provisions on network decommissioning plans in the Gas Directive also emphasise the need for coherence and consistency between various strategic planning exercises that **national authorities and energy sector operators** need to undertake under the EU energy acquis. These planning exercises include, in particular:

- the NECPs, the integrated national energy and climate progress report and the long-term strategy submitted pursuant to Regulation (EU) 2018/1999 (the Governance of the Energy Union Regulation) and the climate neutrality objective set out in Article 2(1) of Regulation (EU) 2021/1119 ("European Climate Law");
- the heating and cooling plans that regional and local authorities must prepare at least in municipalities that have a total population higher than 45 000 in accordance with Article 25(6) of the EED;
- the network development plans at distribution level that will take into consideration these heating and cooling plans;
- the national diversification plans for natural gas[604]; and
- the National Building Renovation Plans under the EPBD.

In this context, it is also important to highlight that such plans need to be developed in close cooperation and need to consider plans that influence the demand side, particularly the NBRPs.

Heating and cooling plans should be used when developing scenarios for network development across all energy sectors, which includes electricity, heating and cooling and potentially hydrogen. A common vision for developing energy supply and demand is key for effective planning. Whether gas boilers are replaced by heat pumps or district heating or a combination of both, will directly impact electricity and heat networks, for example.

Coordination needs to take place across the sectors to ensure that customers get timely access to the electricity grid, as stressed in the guidance on efficient and timely grid connections[605]. This guidance proposes that system operators set up working group(s) on network planning at national level, including local authorities, regulatory authorities, as well as grid users (such as associations representing generators and consumers, including industry, data and transport sector, gases and district heating and cooling system operators). This will ensure grid users' needs are reflected in grid planning sufficiently in advance and enable timely electrification.

### 2.2. AVAILABILITY OF AFFORDABLE ALTERNATIVES TO NATURAL GAS

The entire process of a national, regional or local natural gas phase-out is likely to run over a period of at least 10 years, in particular in areas with a high penetration of natural gas in the household sector and in areas where renewable gases will not be part of the available alternatives. From the outset measures to reduce overall energy (gas) consumption during the transformation should be

[604] Regulation (EU) 2026/261 of the European Parliament and of the Council of 26 January 2026 on phasing out Russian natural gas imports and preparing the phase-out of Russian oil imports, improving monitoring of potential energy dependencies and amending Regulation (EU) 2017/1938

[605] C(2025) 8473 of 19/12/2025 Commission Notice – Guidance on efficient and timely grid connections

prioritised, such as sufficiency and efficiency of energy use in buildings, voluntary and supported disconnections from gas grids, prohibition of gas connections for new buildings. Investments in alternatives to natural gas should already be made more attractive by phasing out fossil fuel subsidies and regulated natural gas prices and by equalisation of taxation of natural gas and electricity. The end of financial incentives for the installation of stand-alone fossil fuel boilers since 1 January 2025 and the obligation on Member States to plan policies and measures with a view to a complete phasing out fossil fuel boilers by 2040 will also stimulate the uptake of alternative technologies. Voluntary switches to alternative heat sources and disconnections from the gas grid should be incentivised for households, housing companies/associations and commerce.

As natural gas is phased out, alternatives will need to be phased in. These include individual solutions, such as residential heat pumps and solar thermal, and collective solutions such as district heating, block heating, large scale heat pumps. Decentralised generation, such as local energy communities and energy sharing can also have a significant role.

The adoption of national and local heating and cooling strategies and accompanying legislation and implementing measures will allow to plan and implement the decarbonisation on all levels and to outline, analyse and cost the different options available. Collective solutions may be the more economic and easily accessible solutions to low-income households, in particular in densely populated areas with an older housing stock. Local heating plans should ensure that in areas with a high potential for collective solutions, this potential is actually utilised.

### 2.3. INCREASING LOCAL ADMINISTRATIVE CAPACITY

Municipalities are key actors in planning, implementing and supporting the natural gas phase-out and in promoting solutions that benefit local communities and support vulnerable and energy-poor consumers. The local heating and cooling plans that are required by Article 25(6) of the EED should be used to outline the strategy for a natural gas phase-out for municipalities with more than 45 000 inhabitants.

Especially medium-sized and small municipalities, with a population of below 100 000 are likely to lack the administrative and financial capacity and expertise to plan, implement and support the local phase-out of natural gas. Support for municipalities to develop their administrative capacity would help address this challenge. Both national and EU support programmes can play a role in providing such support. EU-level support can be provided, for instance, through support initiatives. There is also a strong potential for knowledge sharing, demand aggregation/upscaling and pooling resources between municipalities.

### 2.4. ENABLING LOCAL COMMUNITIES TO ACT

Energy communities and energy-sharing initiatives can contribute significantly to the phase-out of natural gas in municipalities by promoting sustainable energy practices and fostering collaboration among local stakeholders. Through mechanisms like peer-to-peer energy trading and virtual power plants, energy sharing allows surplus renewable energy generated by one member of the community to be distributed to others. Joint investments in renewable production and energy efficiency, such as retrofitting buildings or utilising advanced energy management systems, help

to optimise local energy use and decrease costs. Involving stakeholders in decision-making fosters a sense of ownership, encouraging active participation in reducing reliance on natural gas.

National and local administrations can support energy communities by providing clear and simple rules to set them up and operate them, and financial incentives like grants and low-interest loans to offset initial costs.

The action plan on energy communities, which is part of the Citizens Energy Package, addresses five areas: (i) effective enabling frameworks; (ii) access to financing; (iii) awareness raising and capacity building; (iv) social inclusion and citizen participation; (v) digital innovation and system integration . These measures aim at supporting local energy transitions, alleviating energy poverty and including low-income and marginalised groups, and support a citizen centred energy transition.

### 2.5. RENTED BUILDINGS

For rented homes specifically, split incentives, as defined in Article 2(54) EED, are an important barrier to renovation. They must be addressed as part of the enabling framework for minimum energy performance standard schemes (Article 9(4)(d) EPBD). In addition, Article 22(9) EED stipulates that 'Member States shall take the necessary measures to remove regulatory and non-regulatory barriers to energy efficiency as regards split incentives between owners and tenants, or among owners of a building or building unit.' The EPBD also requires Member States to "report such barriers and the measures taken" in their NBRPs.

Higher rents and the increase in property value resulting from a future-proof building can provide economic incentives for building owners, while minimum energy performance standards overcome the split incentive dilemma. However, these incentives may have to be complemented by additional measures such as financial instruments or updates to the tenancy laws or other regulatory measures.

Detailed guidance on this matter is provided in Annex 2 (financing) to the guidance on implementing the EPBD[606] and in Annex 2 to the Commission Notice providing guidance on new or substantially modified provisions of the EPBD[607].

### 2.6. MULTI-APARTMENT BUILDINGS

Article 17(5) EPBD requires Member States to eliminate non-economic barriers to renovating buildings and highlights the specific case of multi-unit buildings. Depending on the national legal and administrative context, co-ownership structures may not be considered legal entities, which complicates funding and administrative efforts. Addressing these issues is vital for simplifying energy renovations and preparing apartment buildings for a natural gas phase-out.

[606] C(2025) 4132 final of 30 June 2025.

[607] Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275

When identifying alternative options, building co-ownership structures face challenges that may stem from national legislation (e.g. unanimity or high qualified majority requirements) and can complicate or slow down decision-making owing to diverse owner interests and shared systems. However, there are also numerous opportunities to be gained from renovating multi-apartment buildings. These include: (i) simplifying the administrative process by reducing the number of individual applications, agreements and monitoring processes; (ii) achieving economies of scale by allowing bulk procurement of materials, sharing labour costs and streamlining project management; and (iii) incentivising other comprehensive renovations not involving energy performance, such as structural upgrades, and improvements to accessibility and indoor climate.

Guidance on this matter is provided in Annex 2 on financing of the Commission Notice providing guidance on new or substantially modified provisions of the EPBD recast[608]

### 2.7. AVOIDANCE OF INCREASED NETWORK TARIFFS FOR ENERGY POOR AND VULNERABLE CONSUMERS

While the aim should be to include all households/consumers in the phasing out of natural gas, there is a distinct possibility that some consumers will be forced to remain on the gas network for a significant time. This could be due to technical and/or economic reasons. Vulnerable and energy-poor customers run an increased risk of remaining on the gas network, for instance, as they cannot afford to make the necessary individual investments because their landlord refuses to switch and/or because they live in an area where no collective solutions are available. As the number of consumers on the network goes down, the network costs will have to be covered by a smaller number of users, risking a substantial increase in network tariffs.

Regulatory measures, such as direct subsidies or rebates to vulnerable and energy-poor consumers, may be considered to protect vulnerable and energy-poor consumers remaining on the natural gas network from significant tariff increases as users decrease and to help offset increased costs.

The Gas Directive stipulates that where parts of the natural gas distribution network may have to be decommissioned before the end of their originally projected life cycle, the regulatory authority must draw up guidelines for a structural approach to depreciating such assets and setting tariffs. When developing such guidelines, regulatory authorities must consult the relevant stakeholders, in particular, DSOs and consumer bodies[609].

Member States are advised to empower NRAs in a timely fashion to develop such guidelines, which could contain various types of recommendations, including accelerated depreciation rates or inter-temporal cost allocation. The long-term financial pressure to increase tariffs can be reduced by allowing distribution companies to recover the costs of their investments more quickly or while there is still a broader user base. This can provide a financial cushion that helps stabilise network tariffs even while the user base is shrinking. Regulators could consider this as part of a broader strategy to support a just transition for vulnerable customers.

[608] Ibid.
[609] See Article 57 (6) of the Gas Directive (2009/73).

The EU Agency for Cooperation of Energy Regulators (ACER) has published a study on future regulatory decisions on natural gas networks that explores the options of repurposing, decommissioning and reinvesting. In view of the current uncertainty about the future role of natural gas in the EU energy mix, the study looks into the regulatory challenges, the current regulatory practice, and the possible regulatory options in relation to repurposing, decommissioning, reinvesting and extending the use of natural gas transmission assets beyond their regulatory asset lifetime[610].

## 3. CONSUMER ENGAGEMENT AND EMPOWERMENT

Shifting from natural gas to other solutions may require adaptations to the home, especially when natural gas is used for heating. Early and comprehensive engagement with consumers is essential for phasing out natural gas successfully. Key principles of this process include trustworthiness, transparency, inclusiveness, timeliness, predictability and stability. At the same time, it is key that consumers feel empowered to act by having a clear understanding of the process and its timeline and milestones, the roles of the respective actors, the actions they need to take, the support that is available to them and where to find it[611].

### 3.1. PROMOTION OF PUBLIC ACCEPTANCE AND SUPPORT

The transition away from natural gas will succeed only if people trust the process and believe that the shift to cleaner energy will be beneficial to them. It is therefore key to invest from the outset of the phase-out process in communication measures to explain why, when and how the natural gas phase-out will happen.

Information and promotion campaigns are key and can emphasise the personal and societal benefits of the energy transition. People will be more supportive of the transition if they see direct improvements in their daily lives, including lower energy costs, safer, healthier and more comfortable homes, cleaner air and job opportunities. The key to public acceptance is ensuring that the transition delivers on affordability, comfort, convenience and safety while providing reliable alternatives. At the same time, awareness campaigns can also explain the societal drivers for the gas phase-out, including increasing natural gas prices, climate change mitigation and security of supply.

As phasing out natural gas is a lengthy and complex process, decisions and milestones (including planning and financing) need to be adopted well in advance. In particular, if gas networks are to be decommissioned and the household sector depends heavily on natural gas, this decision should be announced at least 10 years before the actual date to take the lifetime of gas boilers into account. This means that strategic reflections on the path towards a natural gas phase-out should already be starting now.

[610] ACER publishes a Study on Future Regulatory Decisions on Natural Gas Networks | www.acer.europa.eu

[611] See for a science for policy briefing that highlights how individual behaviour is influenced by both internal and contextual social factors: JRC Publications Repository - Energy demand reduction: the role of end users

As natural gas is phased out, alternatives will need to be phased in. As early as possible in the process it should be made clear what alternatives are or will become available (including the timing of future availability). This should include a clear yes/no indication of whether renewable gases will be available as a financially viable alternative. This would leave all actors sufficient time to prepare their strategies and plan their investments, and to avoid stranded assets at system and household level.

### 3.2. TIMELY AND TARGETED INFORMATION CAMPAIGNS AND ENGAGEMENT STRATEGIES

To ensure acceptance and support for an impending natural gas phase-out, households must be informed of the implications for them and the strategies to mitigate these impacts.

In view of the cost of living, reduced trust in energy providers and greater scepticism about the affordability of the energy transition, it is essential to engage with people, particularly those affected by energy poverty and the vulnerable. The perception that only higher-income households can afford and benefit from the energy transition should be countered. Specific campaigns should target low-income households and consumers in or at risk of energy poverty, including tenants, to explain the benefits and support to them. Landlords should also be targeted with tailored information.

Information campaigns should address at least the following issues:

- why the phase-out is taking place;
- what alternatives are available – in general and specifically in the local context;
- what costs and savings can be expected and who will cover the costs;
- what subsidies and assistance are available; and
- what specific next steps are planned, including a clear and comprehensive timeline.

Information alone will not suffice to motivate people to act. They need to be actively engaged through targeted engagement strategies. Every engagement campaign should be planned and implemented transparently.

Engagement strategies should be developed that involve all relevant stakeholders at national and local level in the policy-making process. Such strategies can be part of the local or regional decarbonisation plans or NBRP, and should aim to increase awareness, obtain feedback on policies and improve their acceptance by the public.

To effectively engage with people local or national engagement strategies should outline the specific activities to be implemented. This involves understanding the target audience's needs, preferences and behaviours to provide tailored information that resonates with them. An effective engagement strategy should use multiple offline and online channels to reach its target audience. Specific attention should be paid to identifying the different target audiences (including the general public, homeowners, tenants, people in energy poverty and vulnerable customers, people living in multi-apartment buildings etc.) and to tailoring the messages accordingly.

Campaigns should deliver the right message to the right person at the right time. Providing information at key trigger points is particularly impactful. Those include periods when the

equipment reaches its end of life and has to be replaced, or when the acquisition of a dwelling is considered, or when regulatory requirements are about to enter into force. As an example, on average heating equipment lasts 15-30 years and cooking equipment 15-20 years. In some cases, renovations may be necessary to prepare a home for an efficiently operating heat pump. The EPBD recast (i.a. Article 29 on Information, Article 18 on one-stop shops) obliges national, regional and local authorities to inform people on available measures to stimulate renovations and also links such provision of information to specific criteria, such as targeting owners of worst-performing buildings (Article 19(12).

National, regional and local decision-making and planning needs to be communicated clearly and in good time. To ensure tailored and well-targeted communication and to reach out to vulnerable customers and those affected by energy poverty, it will be important to engage also with parties (for instance frontline workers such as social workers, charities, one-stop shops and national consumer organisations) that have easy access to those consumer groups through being in daily contact with them.

Information campaigns should indicate the timeframe for the different steps in the phase-out of natural gas and, as appropriate, indicate when:

- full natural gas phase-out/disconnection from the natural gas network will take place;
- new connections to the gas network will be refused;
- the installation of new natural gas boilers, e.g. on the basis of Article 13(1) of the recast EPBD, will be phased out; and
- rental homes will have to be fitted with electric cookers and heating systems.

### 3.3. IDENTIFYING THE TARGET POPULATION (ACCESS TO DATA)

For households in energy poverty, the 2023 Commission SWD on energy poverty provides a detailed overview of the available indicators and data sources for identifying and targeting energy-poor categories of households. This information provides a highly relevant basis for defining target groups eligible for financial support and rent safeguards.

Member States should also lay down criteria for defining categories of 'vulnerable customers' other than energy-poor households, in compliance with the definitions in the SCF and the recast EPBD.

Member States can use the data provided by existing EU platforms such as the Energy Poverty Advisory Hub and the emerging Common European Energy Data Space to monitor developments, ensure transparency and share comparable data on social and energy impacts.

### 3.4. ACCESS TO INFORMATION AND SUPPORT, ONE-STOP SHOPS

The planning of phase-out of natural gas and phase in of clean technologies for heating, cooking and domestic hot water is already part of implementing the EPBD. This is in particular crucial for heating.

Any engagement strategy must help citizens both to increase the energy efficiency of their dwelling and to switch to alternatives to natural gas. Without practical and financial support, it is likely that significant parts of the population will not be motivated to act.

### 3.4.1. Financial support

A critical stage in most energy renovation projects is securing finance for upfront costs, as these projects are often too costly to be financed by household savings alone. These sources typically include low- or no-interest consumer loans, secured housing loans or mortgages (particularly when the renovation is part of a home acquisition project), public grants, tax incentive and pay-as-you-save schemes. Social leasing schemes and all-in business models for heat pump roll-out in the residential sector are also options that can be considered. As a priority, vulnerable households and people living in social housing should be given financial incentives for energy efficiency-related renovations and switching to alternatives to natural gas.

To ensure that the measures target the relevant groups, Member States should ensure that criteria for prioritisation are linked to or are proportional to the available indicators related to social fairness, vulnerable households or energy poverty. For example, criteria could be linked to the national definition of energy poverty or "low-income household". The EPBD, in particular Article 3 and Annex II, Article 9, 17 and 18, already requires the development of such a modular approach. Options for putting in place such a modular approach are provided in Annex II on financing of the Commission Notice providing guidance on new or substantially modified provisions of the EPBD recast [612].

To target those recipients, Member States may set eligibility rules, based for example on income ceilings and EPC ratings, whereby worst performing buildings and vulnerable households get extra priority. In this case households are only eligible for support up to a certain level of income, covering the lowest income deciles. A more granular option is a system of variable support, for instance digressive in relation to the household's income (i.e. the higher the income the lower the support) or based on the number of dependent family members. Limitations may be considered in relation to the number and type of property, for instance owners of holiday homes or multi-property owners may receive lower or no support. A further possible approach is to reserve a minimum share of the overall funding to vulnerable households and social housing providers.

### 3.4.2. Practical support

One-Stop Shops (OSS) aim to make it easier for consumers to act, particularly in terms of contacts to be made and procedures to be undertaken. The objectives pursued when setting up OSSs vary and can include all or some of the following.

- The dissemination of information and practical advice on available alternatives for natural gas and on renovating buildings, paying attention to ensuring the consistency of the messages and the credibility of the entity (or entities) disseminating these messages and this information.

[612] Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275

- The simplification of access to financial support (e.g. a single funding portal), streamlining objectives and eligibility conditions, and optimising management costs.
- The clarification of liabilities and securing of trust, which is needed for more ambitious refurbishments. This also serves to structure new markets that could eventually be supplied by the private sector, but are not yet spontaneously structured by private initiative, or at least not at the desired pace.
- The pooling of skills by bringing together specialist skills and supporting the development of new skills.
- The aggregation of small-scale investments to reach critical mass, which could then justify developing dedicated financial solutions, including financial support and dedicated partnerships with financial institutions.

The OSSs that have been or will be established pursuant to the requirements of the EED and the EPBD would be well placed to also provide specific expertise and support related to the phasing out of natural gas. Detailed practical guidance on OSSs' services for energy efficiency and the energy performance of buildings as required by Article 18(1) of the recast EPBD can be found in Annex 2 to the Commission Notice providing guidance on new or substantially modified provisions of the EPBD[613].

## 4. FINANCING AND TECHNICAL ASSISTANCE FOR NATURAL GAS PHASE-OUT

### 4.1. FINANCING

To support the phasing out of natural gas, Member States may use available national financing and financing established at EU level, in particular the SCF, the Cohesion Funds, InvestEU, the auctioning of revenues from the EU emission trading system pursuant to Directive 2003/87/EC of the European Parliament and of the Council, and other public funding sources. Those funding sources must be deployed consistently with the path to achieving a zero-emission building stock by 2050.

The European Union has established a range of resources to support national governments and cities in their efforts to combat energy poverty. These resources include:

**The SCF**: this is a new EU funding instrument that was set up in response to the extension of the emissions trading system to buildings and transport, and aims to alleviate the impact of increased prices on vulnerable households and people in energy poverty. Its budget is EUR 65 billion, but it should be able to raise at least EUR 86.7 billion over the 2026-2032 period thanks to mandatory national contributions by Member States.

- To access this funding from 2026 onwards, EU countries must have submitted their indicative SCPs by June 2025.

[613] Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275.

- Citizens can benefit from the SCF through the national SCP on the basis of priorities set by their Member State. In general, eligible measures focus on energy efficiency renovations, the decarbonisation of heating, small-scale renewable energy installations, transport measures to alleviate transport poverty and direct income support.

**Cohesion policy funds:** projects that aim to decarbonise heating and phase out natural gas can receive support from several European Union funding sources, including the European Regional Development Fund (ERDF), the European Social Fund Plus (ESF+), and the Just Transition Fund (JTF). EUR 7.5 billion is earmarked under Cohesion Policy for housing investments with an energy poverty focus. These funds support the most vulnerable communities by improving the energy performance of over 722,000 dwellings, helping to reduce energy bills and improve living conditions. On top of that, the Regulation on the modernisation of Cohesion Policy (COM/2025/163 final) in the framework of the mid-term review incentivizes Member States to increase funding to affordable and sustainable housing, with a focus on households affected by energy poverty.

The ERDF focuses on strengthening economic and social cohesion within the EU by reducing disparities between its regions. The fund supports projects that foster innovation, energy transition and a low-carbon economy. Initiatives that aim to decarbonise heating systems and reduce reliance on fossil fuel are in line with the ERDF's objectives, particularly under its thematic concentration on a greener, low-carbon EU.

While the ESF+ focuses primarily on social inclusion, employment and education, it can also indirectly support decarbonisation projects by funding programs that reskill workers transitioning from fossil fuel industries to renewable energy sectors.

The JTF is specifically designed to mitigate the social and economic impacts associated with the transition to a climate-neutral economy. It supports regions and communities that are particularly affected by the transition, such as those dependent on solid fossil fuels. It does so by promoting balanced socio-economic development based on investments in future-proof sectors that offer opportunities for affected workers and jobseekers. The JTF can, under certain conditions, give support to large enterprises and, in industrial facilities, to investments reducing GHG emissions from certain activities and contribute to the transition towards climate-neutrality. This is not possible under the provisions of the ERDF and Cohesion Fund. The JTF EU allocations to clean energy concentrate mainly on solar, wind, biomass and other innovative technologies such as marine or geothermal energy[614] Under the current multiannual financial framework, these funds contribute around EUR 12 billion to the energy-efficient renovation of buildings.

The **Modernisation Fund**, which is financed from the EU emissions trading system, helps, among other things, to modernise energy systems and improve energy efficiency in 13 lower-income EU Member States. One of its priority areas is helping low-income households, including those in rural and remote areas, to combat energy poverty, and modernise their heating systems and infrastructure for zero-emission mobility.

[614] JTF: Leaving no region behind in the climate transition | Cohesion Open Data

## 4.2. TECHNICAL SUPPORT INSTRUMENTS

The European Commission has a broad portfolio of technical support instruments for local and regional actors. The most relevant instruments that provide support for issues related to decarbonising heating and cooling and addressing energy poverty are set out below.

### 4.2.1. EU Covenant of Mayors

The Covenant of Mayors for Climate and Energy supports EU municipalities striving to meet ambitious climate and energy objectives. Established as a grassroots movement, it unites local authorities that are committed to exceeding EU targets on climate action. The Covenant offers a comprehensive framework that empowers municipalities to design and implement sustainable energy policies while transitioning to low-carbon economies. By providing access to technical resources, guidance documents and a robust network of peer municipalities, the Covenant enables signatories to exchange best practices and innovative solutions, fostering a collaborative approach to achieving climate neutrality.

Municipalities can receive targeted technical assistance through the Covenant's extensive resources and community to help them decarbonise heating and phase out natural gas. This includes access to tailored guidance on sustainable heating solutions and best practices for transitioning towards RESs like district heating systems, heat pumps and biomass. The Covenant also provides capacity-building workshops and training sessions to equip local authorities with the knowledge and skills necessary to develop and implement effective decarbonisation strategies. Municipalities can also benefit from the Covenant's policy recommendations, which help align local efforts with broader EU climate and energy policies, ensuring coherence and maximising impact.

### 4.2.2. Smart Cities Marketplace

The Smart Cities Marketplace helps municipalities to implement sustainable energy projects by bridging the gap between innovative ideas and the investments needed to implement them. It serves as a collaborative platform that connects cities, industry stakeholders and financiers, simplifying the exchange of knowledge and best practices while providing critical financial matchmaking services. Acknowledging the complex challenges that cities face as they transition to low-carbon energy systems, the Smart Cities Marketplace offers guidance on developing bankable projects, identifying suitable financial opportunities and preparing robust business cases that can attract potential investors. Workshops, webinars and tailored advice give municipalities insights into market trends and innovative financing models that can accelerate the implementation of their sustainable energy initiatives.

The Smart Cities Marketplace plays a vital role in decarbonising heating systems and phasing out natural gas by simplifying access to the resources and expertise that help municipalities develop comprehensive transition strategies. This includes showcasing successful case studies of cities that have effectively integrated renewable heating solutions, such as district heating, heat pumps and geothermal energy, into their infrastructure. The platform also provides municipalities with tools and frameworks to assess the feasibility and impact of various decarbonisation options and to align them with broader EU climate targets. By fostering collaboration between cities, technology providers and financial institutions, the Smart Cities Marketplace enables municipalities to secure

the investments they need to modernise their heating systems, reduce reliance on natural gas and ultimately achieve their decarbonisation goals.

#### 4.2.3. Energy Poverty Advisory Hub

The Energy Poverty Advisory Hub (EPAH) provides practical assistance and strategic guidance to help EU municipalities tackle energy poverty. It provides local authorities with resources like best-practice case studies, toolkits and guidance documents, allowing them to design measures tailored to their communities. The Hub also increases municipal capacity by delivering training and workshops that equip officials with the skills needed to identify vulnerable households and implement effective assistance programs.

The EPAH ensures that the decarbonisation of heating and the phasing-out of natural gas help to alleviate energy poverty rather than exacerbating it. The EPAH helps municipalities to develop inclusive plans that protect vulnerable customers, identify funding for energy-poor households, and simplify access to energy-efficient technologies. By embedding energy poverty considerations into decarbonisation strategies, the EPAH helps to ensure that cleaner energy transitions are equitable and inclusive, ultimately aiming to eradicate energy poverty and improve the quality of life for vulnerable populations.

#### 4.2.4. Citizen Energy Advisory Hub

The Citizen Energy Advisory Hub is a platform designed to empower communities and individuals by guiding them in the transition to sustainable energy solutions. Its main purpose is to support citizen-led energy projects, promoting renewable energy adoption and efficiency at community level. The Hub provides essential information on project planning, technology choices, financial strategies and regulatory frameworks to help communities make informed energy decisions.

In addition to information resources, the Hub offers support services to help individuals and community groups overcome barriers in the renewable energy sector. These services include expert consultations, workshops and training to build local capacity and technical skills. The Hub also assists in securing funding, facilitating partnerships and ensuring regulatory compliance. By connecting with a network of experts and organisations, the Hub fosters collaboration and shared resources for successful community-driven energy projects.

#### 4.2.5. Coal Regions in Transition

The Coal Regions in Transition initiative offers targeted support to EU regions and municipalities that rely on coal, providing a framework to help them shift towards a low-carbon future. The initiative simplifies the exchange of knowledge and best practices, and provides technical assistance that is tailored to the specific challenges of carbon-intensive areas. By fostering collaboration among EU institutions, national governments, local authorities and stakeholders, the initiative aids in developing transition strategies that meet environmental goals while addressing socio-economic impacts. Support includes access to funding, technical expertise and policy guidance to help create sustainable economic alternatives and job opportunities.

For regions transitioning from coal to natural gas, the initiative stresses reducing carbon intensity, particularly when decarbonising heating systems. It provides guidance on integrating RESs and

improving energy efficiency in municipal heating networks. By assisting regions in planning a gradual switch to sustainable, less carbon-intensive energy, the Coal Regions in Transition initiative encourages diversification by incorporating renewables. This support aims to ensure that regions evolve from relying on coal to using sustainable, resilient energy systems while preserving economic stability and social cohesion during the transition.

The JTF works in tandem with the Coal Regions in Transition initiative to provide financial and strategic support for regions undergoing significant economic shifts due to decarbonisation efforts (see information on JTF in the section on financing of this SWD).

#### 4.2.6. EU Mission for Climate-Neutral and Smart Cities

The Cities Mission, which is part of the EU Mission for Climate-Neutral and Smart Cities, offers substantial support to aid municipalities in their journey towards climate neutrality. The programme provides comprehensive assistance to the 112 cities selected to develop and implement ambitious climate action plans that aim to achieve net-zero greenhouse gas emissions by 2030. This support includes tailored guidance, access to European funding mechanisms and opportunities for peer learning and knowledge exchange. To help them transition from fossil fuels, these selected cities receive specialised consultancy services focusing on innovations such as integrating RESs into heating systems and phasing out natural gas. By acting as testbeds for innovative solutions, these cities can explore cutting-edge technologies and infrastructure improvements, setting precedents that can be scaled up across Europe.

For cities not among the initial 112, the Cities Mission still serves as a beacon of resources and inspiration, providing a road map towards future participation and engagement. While they may receive less extensive direct support in terms of funding and consultancy, all EU cities can benefit from the twinning programmes, the open-access information, best-practice databases and toolkits developed as part of the cities mission and its open-access knowledge repository.

#### 4.2.7. CET LIFE

The Clean Energy Transition (CET) LIFE facility is an EU funding programme for projects that accelerate the renewable energy transition and improve energy efficiency across Europe. It offers grants for projects that focus on knowledge transfer, capacity building and innovative solutions. Municipalities can access resources to implement local decarbonisation initiatives, specifically targeting the heating sector. CET LIFE supports municipalities in adopting renewable technologies like solar thermal, biomass and geothermal heating, thereby helping them to reduce their reliance on natural gas and cut carbon emissions.

Beyond financial support, CET LIFE fosters collaboration and knowledge exchange among European municipalities, industry experts and stakeholders. This networking is vital for municipalities phasing out natural gas, enabling them to adopt best practices for sustainable heating solutions. Involvement in CET LIFE actions increases municipalities' technical capacity to design effective decarbonisation strategies. Furthermore, CET LIFE is in line with broader EU climate goals, ensuring that local efforts contribute to large-scale environmental targets while promoting a sustainable and resilient energy infrastructure for communities.

#### 4.2.8. Just Transition Platform (JTP)

The Just Transition Platform (JTP) offers support to the Member States and regions in their implementation efforts of the Just Transition Fund. The Platform provides tailored technical assistance (JTP Groundwork), facilitates exchanges between regions and with excepts (JTPeers), contributes to knowledge sharing (JTP Knowledge Hub, JTP website), and promotes stakeholder engagement (JTP conferences, JTP Working Groups, Technical Regional Forums). In addition, JTP offers platforms to discuss different aspects of JTF implementation (yearly JTP Conferences, JTP Working groups) and disseminates knowledge through the JTF Knowledge hub (for publications).

#### 4.2.9. Cohesion for Transitions (C4T) Community of Practice

The Cohesion for Transitions (C4T) Community of Practice supports public authorities in implementing sustainable investments under Policy Objective 2 (a greener, low-carbon economy), including those focused on renewable energy and energy efficiency across Europe. C4T Groundwork Technical Assistance helps authorities overcome existing bottlenecks in the implementation of Cohesion projects. For example, it supported the preparation of technical documentation for an energy community in Romania as well as the creation of a one-stop shop for building renovation in Bulgaria, among others. C4T also offers networking and knowledge-exchange opportunities through its Working Groups. These groups address implementation barriers through targeted actions, such as developing guidance for public calls on energy communities. In addition, C4T organises regular events to foster cooperation among stakeholders, including an annual C4T conference in Brussels and an annual regional event combined with visits to projects funded by the Cohesion Funds.

## SECTION 6: SUPPLIER RISK MANAGEMENT

### 1. INTRODUCTION

This section aims to further clarify the recommendation on supplier risk management in Article 18a of Directive (EU) 2019/944 as amended by Directive (EU) 2024/1711 of the European Parliament and of the Council of 13 June 2024 amending Directives (EU) 2018/2001 and (EU) 2019/944 as regards improving the Union's EMD.

This Section also focuses on the perceived role of the National Regulatory Authorities (NRAs) or of other designated authorities in understanding article 18a of Directive (EU) 2019/944 as amended by Directive (EU) 2024/1711, as they will primarily enforce it. The aim is to help ensure that it is transposed consistently across Member States. To this end, this section will include some good practices from various Member States. These examples are intended to illustrate different approaches and do not exclude other methods, provided they are in line with the article itself.

#### 1.1. LEGAL AND POLICY CONTEXT

During 2021/2022, the EU experienced various supplier failures, primarily due to the energy price crisis. This situation led to consumer uncertainty, defaulted forward payments, and consumers needing to switch to new, often less favourable contracts. Several bankruptcies were caused, among other things, by supplier portfolios that relied heavily on fixed-price contracts and could not cope with sudden price increases due to inadequate hedging.

Article 18a of Directive (EU) 2019/944 as amended by Directive (EU) 2024/1711 aims to strengthen suppliers' electricity portfolios to withstand volatile price shocks in energy markets. The article empowers Member States to require suppliers to implement appropriate hedging strategies, thereby limiting the risk of supplier failure. Additionally, it provides Member States with the means to require NRAs or other designated national authorities to enforce these obligations on suppliers, taking into account supplier size and the national market structure.

### 2. MEMBER STATES – TRANSPOSITION

The purpose of this Section is to provide Member States with information on how the various provisions of Article 18a of the Electricity Directive could be transposed and implemented. This Section will focus on two factors that Member States should be aware of when implementing this provision.

#### 2.1. LEGAL FRAMEWORK

When transposing Article 18a(1) of the Electricity Directive, Member States must require NRAs, or alternative designated independent competent authorities to ensure that electricity suppliers have in place appropriate hedging strategies and take all reasonable steps to limit their risk of failure.

Consequently, Member States need to ensure that suppliers are subject to an obligation to hedge appropriately and minimise risks. This can be done in national law or by making use of a licensing

regime, for example. Member States could give guidance in line with the provisions on NRA competence and independence stemming from Directive (EU) 2019/944.

The existence of appropriate hedging strategies can be ensured by general rules that can be monitored without specifically reviewing the positions or strategies of individual suppliers. Suppliers' hedging strategies could be assessed through stress tests and imposing reporting requirements on suppliers.

General rules on suppliers should be made, the enforcement of which is at the discretion of the NRA. Enforcement can occur without a detailed examination of individual positions or strategies. However, stress tests and reporting requirements are advised to be used as mechanisms for implementation. The Section below elaborates on this matter.

Member States or NRAs must impose a legal obligation on suppliers tailored to their legal frameworks. This obligation should require suppliers to maintain appropriate hedging strategies and to undertake all reasonable measures to minimise their risk of failure. This objective can be achieved by setting general prudential rules for suppliers, which will subsequently be specified in greater detail by the NRA through tertiary legislation, decisions, or via other means at their disposal. Furthermore, if a Member State operates a supplier licensing regime, this can be leveraged to make prudential or financial competencies a condition for obtaining a licence. The NRA can assess purchasing strategies and other reasonable actions taken to mitigate the risk of failure through this mechanism. An example of this can be found in the Dutch case study below, where the Dutch NRA has leveraged its license obligations to enforce prudential rules on suppliers.

Under the second paragraph of Article 18a of the Electricity Directive, these hedging strategies may include PPAs to cover the portfolio or other appropriate financial instruments such as forward contracts. Member States may opt to require that some of the risk be covered by using PPAs for electricity from RESs. This part of the article is optional for Member States to transpose, which is indicated by the word 'may'.

**Case study Netherlands, Dutch NRA – Licensing conditions, risk management and hedging obligations**

The Dutch Authority for Consumers and Markets (ACM) has strengthened licensing regulations for energy suppliers, focusing on financial and organisational assessments to ensure robust risk management and financial health. Suppliers must now demonstrate positive equity and solvency, alongside robust liquidity projections that include stress testing for scenarios such as increased energy prices and demand.

Organisational assessments require suppliers to present comprehensive business plans, employ qualified risk managers and maintain financial recovery plans to ensure that they are prepared for financial challenges. These stringent evaluations are carried out bi-annually and are integrated into the licensing framework to foster a resilient energy market.

The ACM also revised hedging rules in 2024 to address market risks, as well as liquidity and

solvency risks. Suppliers must maintain a 100% back-to-back hedge for all contracts, with temporary deviations allowed if financially supported. A structured supervision approach includes detailed hedging templates and stress-testing tools, with potential enforcement and extended supervision for non-compliance.

Risk management strategies focus on stress tests that: (i) evaluate extreme market impacts; (ii) monitor liquidity to ensure sufficient cash flow; and (iii) monitor capital requirements to buffer financial shocks. By requiring these measures, the ACM aims to protect both consumers and suppliers from market volatility, ensuring a stable energy supply.

The ACM also uses standardised templates to assess suppliers' hedging practices across all contract types, including dynamic, variable and fixed-price contracts. Suppliers must report contracted and hedged delivery volumes per megawatt hour (MWh) for short-term and multi-year forwards. This reporting, which is currently required annually, but is expected to increase in frequency, involves a comprehensive position-hedging template covering time frames ranging from intra-day to years. Suppliers unable to hedge directly on energy exchanges must secure a sourcing contract with a party for a minimum of 12 months, ensuring that the entire hedged position, up to five years, is covered back-to-back with futures contracts.

### 2.2. OTHER ELEMENTS

The last paragraph of Article 18a of the Electricity Directive requires *Member States to endeavour to ensure the accessibility of hedging products for citizen energy communities and RECs and to put in place enabling conditions for that purpose.*

When transposing this paragraph, Member States should: (i) enable energy communities to hedge their demand on wholesale markets; and (ii) simplify regulatory frameworks to make it easier to access electricity markets through diverse mechanisms such as PPAs, peer-to-peer trading platforms and wholesale market participation. For example, in some markets, access to hedging products is limited by the required minimum volume. This minimum volume can exceed the capacity of many small energy community suppliers, preventing them from securing fixed long-term pricing and making them vulnerable to price volatility.

Access to hedging products for citizen energy communities and renewable energy communities can be ensured by: (i) introducing exemptions or simplified licensing requirements for energy communities with limited energy supply capacities; (ii) promoting collaboration between energy communities and fully licensed suppliers or balance responsible parties; and (iii) supporting the development of tools and platforms like standardised PPA templates or trading systems based on smart contracts. This should be in line with the Commission Recommendation (EU) C(2026)2850 on supporting the development of energy communities and maximising the potential of self-consumption.

# 3. NRAs – Operational Considerations

The following Section concerns the NRAs or other designated independent authorities. As regulatory authorities, these bodies will be tasked with enforcing the legislation and ensuring that suppliers are hedged appropriately and that they limit their risk to supplier failure. Without prejudice to Member States' competence and NRAs' independence, this Section aims to clarify what the various components of Article 18a of the Electricity Directive mean and how NRAs can use that article to enforce hedging requirements on suppliers.

## 3.1. Guiding principles

### 3.1.1. Appropriate hedging strategies

Member States and NRAs have to ensure that suppliers have in place and implement appropriate hedging strategies. As per recital 18 of the amending Directive (EU) 2024/1711, an appropriate hedging strategy should consider: (i) the supplier's access to owned production assets; (ii) its capitalisation; (iii) its exposure to changes in wholesale market prices; (iv) the size of the supplier; and (v) the market structure.

What is considered appropriate can differ between suppliers and Member States, depending on the supplier's size and the market structure, as mentioned above. While the NRA has discretion to shape its enforcement strategy, **the supplier should be able to demonstrate why their hedging strategy is sound according to their situation.** An NRA can decide on general requirements or guiding benchmarks, but the provision is not meant to preclude suppliers from maintaining different hedging strategies, as long as these minimise risk. When NRAs design their enforcement strategy, they should consider the availability of hedging options and tailor their enforcement strategy accordingly.

In terms of what constitutes appropriate hedging strategies, a situation that must be considered concerns for example suppliers with a considerable number of fixed price contracts, where this volume should be hedged for the duration of the retail contracts. Large open positions should be avoided, as they will be impacted by the risk of increasing prices. However, a perfect 100% hedge is often not desired as to take into account fluctuating consumption patterns or expected churn. Positions with hedges that are slightly lower or higher than 100% can be considered 'fully hedged'.

In the above-mentioned case, an NRA should accept open positions if a supplier can demonstrate it has either have access to own production that is able to cover the open positions, or enough capital/liquidity to close open positions when wholesale prices increase by X per cent, for instance the wholesale price increase during the energy crisis. This percentage can be further detailed by the NRA. Stress tests can help suppliers to demonstrate their liquidity in relation to their open positions and possible price increases to NRAs. In any case, it should remain possible for suppliers

to deviate from any guiding benchmark if the supplier can demonstrate consumers are not exposed to risk unduly. The size of the supplier should also be considered. In large portfolios, price increases have a larger impact on the costs for suppliers, which makes the risks of failure higher, depending on capital. This would mean that a highly capitalised small supplier has more margin than a thinly capitalised large supplier. Consequently, the risk for the market as a whole is also higher for large portfolios than for smaller portfolios. This warrants a diversified approach. It remains up to the NRA how to implement this, depending on the national market and internal capacity.

### 3.1.2. Stress test

A stress test is a hypothetical simulation of the impact of a pre-determined risk factor on the liquidity of a supplier. This can be done for a certain period of time, e.g. 12 months, half a year or even monthly on a rolling forecast.

When offering fixed-price contracts, price changes on the wholesale market pose one of the largest risks for suppliers with open positions. This risk could be quantified, for example, as a doubling of the average wholesale price in the coming X months. The simulation would then assess what the cost of this would be, taking the open positions into account. This cost would have a negative impact on the supplier's liquidity position.

Other risks can be identified as well. For example, an increase in the volume used due to an extremely cold winter, an increase in margin calls due to volatile prices, an increase in late payments by consumers or party-to-party risks due to a failure to comply with obligations. It is up the NRA to assess whether these risks are to be included in stress tests, and in what form they deem necessary, *taking into account the size of the supplier or the market structure.*

As recital 18 of amending Directive 2024/1711 states, a stress test can be a helpful tool for both suppliers and NRAs to assess suppliers' risks. In principle, a stress test assesses the impact of a development on the liquidity position of a supplier. One such development could be a sudden price increase as seen in the energy crisis of 2021/2022. As suppliers would have to purchase their energy for the open positions at a higher price, this will have a negative effect on their liquidity.

Besides price increases, other risks can include:

- market risk; i.e. changing prices, margin calls, volumes or customers;
- debtor risks; i.e. consumers not being able to pay their bills;
- counter-party risks; i.e. counter parties not fulfilling their obligations; and
- other liquidity risks.

The stress test could take the form of a liquidity forecast with an additional scenario. In this case, in addition to the actual forecast, a separate forecast with event X (for example a price increase) is simulated. In this scenario, the effect of the event on the liquidity positions will be calculated. If the event has a severe negative effect on the liquidity, there is a risk of supplier failure. This would give the NRA cause to act. However, it remains up to the NRA how best to do this. The case study

below, in which the French NRA proposed using stress testing as a second tier when enforcing prudential rules, provides an example of how stress testing can be used. In this proposal, when hedging falls outside a certain benchmark, a supplier needs to provide additional data to show that the risk entailed is sufficiently covered.

NRAs are encouraged to consult with their respective central banks or financial regulators as well as market participants to determine the most effective approaches for their national markets. These entities possess expertise and understanding of the national context, thereby providing invaluable guidance in such discussions.

#### 3.1.3. Suppliers' risk exposure

Suppliers' risk exposure is the potential loss a supplier could incur due to an event. It is the risk multiplied by the costs. For suppliers, such an event could be, for example, price increases on the wholesale market, although there could be other risks as well. The risk exposure for open positions is the volume of the open position multiplied by the estimated new price (after the increase).

This figure can be used to describe a supplier's risk tolerance in their broader risk strategies. It remains for the supplier to demonstrate its ability to cover this exposure.

**Case study France, French NRA Commission de régulation de l'énergie (CRE) – Proposed approach to hedging assessment and conditional use of stress tests**

In July 2024, the French energy regulator, CRE, proposed a prudential regulation system based on three key principles to ensure the financial stability and risk management efficacy of energy suppliers.

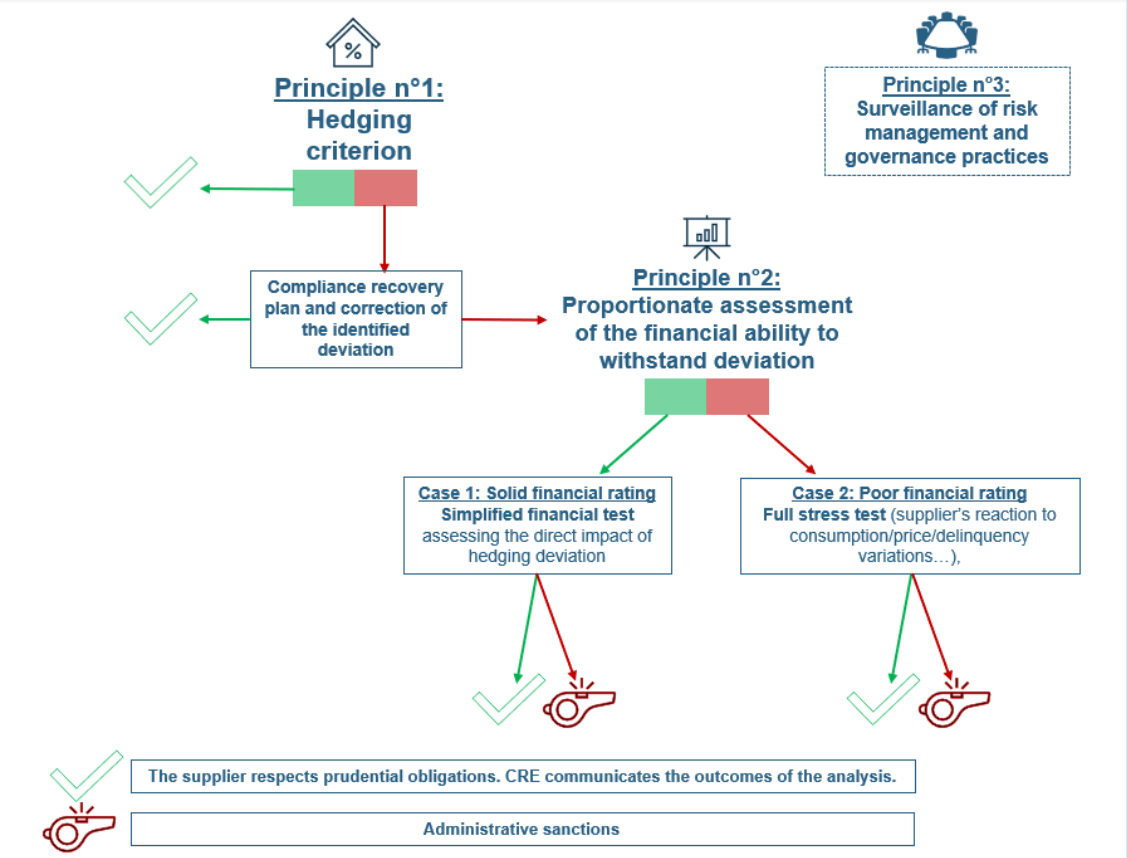
- A hedging criterion: CRE assesses whether suppliers have hedged at least X% of their contractual commitments through instruments like futures, physical assets or PPAs. The system evaluates how well suppliers' hedging covers consumer commitments.

- A deviation assessment: suppliers deviating from the hedging criterion undergo stress tests based on their financial ratings. Those with robust ratings face simplified stress tests to evaluate their ability to handle risk.

- Risk management culture: suppliers must report on their governance and risk management practices, promoting a standardised risk management culture within the industry.

Should a supplier's hedging fall short at the end of the compliance recovery plan, as illustrated by a practical example with a 92% hedging rate against a requirement above 92%, the supplier must undergo a stress test to evaluate exposure to adverse market conditions. Sanctions could be imposed if this test indicates failure to manage open volumes.

The CRE's review process includes confidential analysis publication and requires suppliers to hedge their positions adequately, with failure to comply resulting in sanctions. This regulatory approach ensures a resilient energy market by maintaining financial health and promoting effective risk management among suppliers.




In this example, a supplier managing 1 000 household customers as of 1 January 2025, offers two types of fixed-price contracts: a six-month offer without termination fees (all contracts signed on 1 December 2024) and a 12-month offer with termination fees (all contracts signed on 1 January 2025).

Each client category consumes 1 MWh monthly, but only from October to March for client category 2. The churn rate for contracts with termination fees is 1% per month. The prudential evaluation in March assesses volumes under contractual commitment, totalling 6 467.77 MWh, against hedged volumes, which currently cover 5 950 MWh, or 92%. If the required hedging criterion (X%) exceeds 92%, the supplier must undergo stress tests, which will be simplified in the case of a strong financial rating. In that case, the tests consider open volume schedules to evaluate the impact of potential price shocks on the supplier's financial position, and use market price modelling to determine the impact on solvency and liquidity.

### 3.1.4. Ensuring effective and simple reporting

The following section will delve deeper into the various ways of enforcing these obligations. It will focus on the various levels of strictness in which NRAs can operate.

The starting point of any action by an NRA is a legal basis. Member States and NRAs therefore have to implement article 18a of the Electricity Directive in their respective frameworks.

As recital 18 of Directive (EU) 2024/1711 indicates, *the existence of appropriate hedging strategies can be ensured by general rules overseen without undertaking a specific review of the positions*. Enforcement on the basis of general rules can be done in a reactive manner. When an NRA detects inappropriate, or lack of hedging strategies in an ad hoc review or otherwise, a supplier should be subject to the NRAs enforcement measures following the general rules, depending on the national framework.

### 3.1.5. Reporting requirements

The instrument of reporting requirements builds on national implementation of the obligation of suppliers to hedge mentioned above. NRAs can require suppliers to report on their hedging and risk management strategies and, as described in the previous sections, this may include a stress test. NRAs are encouraged to establish clear and comprehensive reporting requirements to monitor suppliers' hedging strategies effectively. These requirements should be communicated well in advance to the sector and, where possible, integrated into existing frameworks, such as licensing regimes, and promoted through user-friendly digital platforms. NRAs should create consistent reporting cycles that increase predictability for the industry and should consider different intervals so that these cycles align with both regulatory and operational needs. For example, NRAs could request that suppliers provide a yearly or biannual updated risk strategy pertaining to their hedging portfolio, and that they review their open positions quarterly or monthly, or even at other intervals if needed. An example is provided below of how the Flemish NRA designed its enforcement strategy and reporting requirements.

Reference is also made to existing data reporting obligations under Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency ('REMIT')[615], especially Article 8 thereof. NRAs should take note of the REMIT Implementation Regulation, with a view to suppliers reporting, amongst others, their exposure in line with Article 8(1) of REMIT. NRAs should streamline any additional reporting, where possible, with existing reporting structures such as these to minimise administrative burdens.

When enforcing this obligation, equal treatment of suppliers should be ensured. While a risk-based approach to enforcement can help in allocating an NRAs internal capacity, this should be done according to pre-defined conditions. Furthermore, such an approach should not allow smaller suppliers to escape their (hedging) obligations. In addition, NRAs should ensure that their enforcement strategies treat all suppliers equally, while ensuring a level playing field. Such strategies, particularly those based on risk, should adhere to clear, pre-defined criteria to maintain transparency, predictability and consistency. NRAs should also tailor review strategies to fit the national market structure, which might include comprehensive evaluations of all suppliers, segmenting reviews into different supplier groups, or taking a risk-based approach that evaluates

[615] Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency.

factors like supplier size, portfolio complexity or self-generation capacities. The effect of possible failures on the market as a whole should also be considered by NRAs when deciding on their enforcement strategy.

Reporting requirements can also include other reasonable steps that suppliers should take *to limit their risk of supplier failure* as set out in the second paragraph of Article 18a of the Electricity Directive. Such reporting requirements could include, for example, NRAs requesting to see the internal risk strategy and documents of suppliers, while respecting their confidentiality, as illustrated in the three case studies included in this section.

Finally, NRAs should continuously evaluate and adapt these reporting requirements to remain in tune with evolving market conditions, thereby ensuring that the requirements remain relevant and effective. Enforcement should not be static but should respond to evolving market conditions. Consulting with national central banks or financial regulators and incorporating feedback from (industry) stakeholders can strengthen these processes and improve acceptance within the national system.

**Case study Belgium, Flemish Utility Regulator – Licensing conditions and reporting requirements**

The Flemish Utility Regulator (*Vlaamse Nutsregulator*, VNR) oversees a stringent licensing regime for energy suppliers in Flanders, prioritising financial resilience, technical capability, customer service, risk management and personnel competence to maintain healthy competition in a mature market. Applicants for a supply license must demonstrate these attributes and submit key documents like financial statements and business plans, as specified by the Flemish Energy Act. The VNR retains the discretion to set assessment criteria and mandates full cooperation.

Licensed suppliers are required to confirm ongoing compliance by submitting annual reports, including financial assessments through agency ratings, annual documents and forward-looking financial plans. Newer licensees are subject to greater scrutiny.

This detailed oversight ensures that only financially and technically sound suppliers operate in the energy market, maintaining reliability and protecting consumers.

Following the energy crisis, the VNR introduced additional reporting requirements to strengthen the oversight of energy suppliers. Annually, suppliers must submit detailed monthly cash flow statements for the period of May to April, highlighting financing plans for anticipated negative cash flows. They also need to outline their sourcing and hedging strategies for electricity and natural gas, detailing how they manage price fluctuations.

Suppliers must identify major financial and operational risks, such as market volatility, debtor and counter-party risks, liquidity challenges and operational inefficiencies. They are required to report on their risk mitigation strategies and evaluate their effectiveness. Additionally, the VNR mandates the reporting of ‘bad debt’ percentages by comparing current figures to past years and pre-crisis levels.

Household-serving suppliers must provide monthly reports on non-payment data, including default notices, payment plans initiated, average debt levels, payment behaviours and contract cancellations. This enables the VNR to monitor customer payment behaviour and assess potential default risks.

The VNR also ensures financial transparency by checking for outstanding supplier debts with national tax authorities and using specialised software to evaluate the credit scores, creditworthiness and risk profiles of suppliers. This comprehensive approach aims to maintain market stability and protect consumers by closely monitoring the financial health and risk management practices of energy suppliers.

## SECTION 7: PROMOTING REMUNERATION OF FLEXIBILITY IN RETAIL CONTRACTS

### 1. INTRODUCTION

In line with its commitment to ensure energy affordability and enable flexible participation in electricity markets, the Commission, as announced in the affordable energy action plan[616] (AEAP), seeks to promote the remuneration of flexibility in retail contracts[617] as a means to make energy more affordable, also through lower electricity supply costs.

In line with Action 2(d) of the AEAP, this section of the Staff Working Document sets out key considerations and identifies examples of good practices emerging across Member States and stakeholders involved in the design and functioning of the electricity retail markets, supporting the objectives of the AEAP and the clean industrial deal to promote flexible market participation that benefits all consumers. Retail market flexibility is also closely linked to the wider delivery of the AEAP and, in particular, to the upcoming electrification action plan and the strategic roadmap for digitalisation and AI for the energy sector, with particular attention to ensuring that these are delivered in a consumer-friendly manner.

To ensure that these policies are effective, it is essential to move towards market-based retail prices, as required by Article 5 of the Electricity Directive. In Member States where price interventions remain in place, this transition should be carefully managed to safeguard affordability, while enabling clear price signals that underpin flexible retail contracts.

As noted in the AEAP, more flexible electricity demand can provide tangible cost savings (with industry estimates indicating EUR 2.7 billion per year in avoided peak generation capacity by 2030), while also supporting the integration of renewables that could help lower wholesale electricity prices by almost 40%. Moreover, a study by the European Environment Agency (EEA) and ACER[618] confirms that the electricity system in Europe will need more than twice the amount of flexibility resources to keep up with changing needs stemming from expansion of renewable energy sources. Without demand-side flexibility, the system would rely more heavily on generation using fossil fuels, curtailing renewables or costly grid reinforcements[619]. Pilot projects have demonstrated that distributed flexibility can mobilise hundreds of megawatts for balancing and congestion management, reducing grid stress and avoiding the curtailment of renewables or costly reinforcements[620].

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616 COM(2025) 79 final, 'Action plan for affordable energy: Unlocking the true value of our Energy Union to secure affordable, efficient and clean energy for all Europeans'.

617 Within the context of this document, retail electricity supply contracts refer mainly to contracts concluded between energy suppliers and customers who cannot access wholesale markets directly, such as households and businesses (e.g. small and medium-sized enterprises and microenterprises).

618 EEA-ACER, *'Flexibility solutions to support a decarbonised and secure EU electricity system'*, 2023.

619 smartEn, DNV, *'Demand-Side Flexibility 2030: Quantification of benefits in the EU'*, 2022.

620 INTERRFACE Project, Deliverable D5.5 – Demonstration of the IEGSA architecture in Finland, Estonia and Latvia, 2022. CoordiNet Project, Final Report on Demonstrations – Sweden, Svenska Kraftnät, 2022 (showing congestion management capacities of up to 397 MW).

Demand-side flexibility[621], which is enabled by different resources[622], plays a central role in aligning markets with consumer needs, delivering affordability, savings and system efficiency. Flexibility delivers value both directly to participating consumers, through lower prices and better energy usage, and to the wider system by reducing costs and increasing efficiency. However, the guiding principle should be that flexibility serves – not burdens – consumers, with retail offers and system incentives being designed to ensure clarity, fairness and inclusivity. To achieve these benefits in practice, demand-side flexibility should be actively promoted where it creates clear benefits, particularly for final customers who are equipped and motivated to participate in the retail market, but also for the energy system as a whole.

This section of the Staff Working Document focuses specifically on the provision of flexibility services through retail contracts[623] where consumers can respond to price signals by adjusting their electricity usage and aligning it with supply and demand dynamics. It also explains how flexible demand, particularly through flexible retail contracts, can be beneficial both to consumers and to the wider system, while safeguarding affordability and maintaining consumer protection. In addition, this section sets out how the internal market legislation provides a framework for retail contracts that: (i) fairly remunerates flexibility and ensures consumer rights (free choice of supplier, access to dynamic pricing, multiple supply contracts, access to smart metering data); (ii) provides the necessary technical enablers (deployment of smart metering, data interoperability, dedicated measurement devices); and (iii) lays down rules for non-discriminatory market access (aggregation, non-discriminatory participation). This section also examines developments in relation to flexible electricity supply contracts and finally makes recommendations for Member States to increase the availability and attractiveness of flexible retail contracts to consumers.

## 2. THE ROLE OF DEMAND-SIDE FLEXIBILITY IN THE ENERGY TRANSITION

### 2.1. FLEXIBILITY AS A CORE ENABLER OF A CONSUMER-CENTRIC, DECARBONISED ELECTRICITY SYSTEM

EU energy policy aims to deliver a decarbonised, secure and consumer-focused electricity system. Demand-side flexibility – when supported by flexibility programmes that are voluntary, beneficial and tailored to the capabilities of different consumer segments – is an important tool for achieving an efficient, market-driven retail electricity market that can generate direct benefits for the consumers and the wider system.

In recent years, increased generation of renewables has contributed to rising congestion costs and more frequent instances of negative wholesale prices. At the same time, the growing electrification

621 Where 'flexibility' is understood from the system perspective to be the ability of an electricity system to adjust across relevant market timeframes to the variability of generation and consumption patterns and to grid availability, in accordance with Article 2(2)(b) of Regulation (EU) 2024/1747.

622 Such as distributed storage and generation, electric vehicles, heat-pumps and other electricity loads through demand response.

623 This kind of demand response is usually referred to a price-based (or implicit) demand response, since the consumers respond to retail electricity price changes and shift their consumption to time periods where electricity is cheaper.

of the energy system leads to increasing demands on electricity grid, as the uptake of new loads places additional pressure on network operation and raises the need for additional capacity.

Flexibility brings the dual benefit of supporting the energy transition, while also creating opportunities for consumers to reduce their bills. Consumers can reduce their energy costs by changing their consumption in certain periods in response to price signals, while their actions can have a positive impact on wholesale market prices and system resilience. Activating retail flexibility will also help to integrate the generation of variable renewable energy and empower consumers to better manage their energy consumption. This shift should be accompanied by an effective regulatory framework that protects consumers, fosters equitable access and maintains affordability. Smart metering infrastructure is central to this process, as it enables granular pricing and real-time energy management, driving the transition to a more flexible and consumer-responsive energy system.

Overall, consumers who wish to be active and to allow the market to benefit from their flexibility should be enabled to do so. They can enter into contracts with suppliers and aggregators to provide their flexibility to the market or participate through energy communities and other collective schemes. It is crucial to ensure the right of consumers to participate in the market for providing their flexibility through a clear legal framework that provides for such a legal right, alongside the availability of competitive flexibility services and products that enable consumers to benefit from choice, innovative solutions, fair prices and rewards. Moreover, consumers should have access to information and tools through smart metering systems and effective data access arrangements that empower them to make informed choices.

It is equally important to use robust safeguards on contractual arrangements, transparency and information about products and prices to protect final customers participating in flexibility, while ensuring data protection. At the same time, raising consumer awareness can support informed engagement. Targeted communication campaigns and initiatives can help highlight the potential benefits and risks of flexibility programmes, enabling consumers to make informed choices and encouraging broader participation.

### 2.2. DEMAND RESPONSE PROGRAMMES

Article 2(20) of the Electricity Directive defines ‘demand response’ as the change of electricity load by final customers from their normal or current consumption patterns in response to market signals, including in response to time-variable electricity prices or incentive payments, or in response to the acceptance of the final customer’s bid to sell demand reduction or increase at a price in an organised market whether alone or through aggregation[624].

[624] According to Article 2(20) of Directive (EU) 2019/944, ‘demand response’ means the change of electricity load by final customers from their normal or current consumption patterns in response to market signals, including in response to time-variable electricity prices or incentive payments, or in response to the acceptance of the final customer’s bid to sell demand reduction or increase at a price in an organised market as defined in point (4) of Article 2 of Commission Implementing Regulation (EU) No 1348/2014, whether alone or through aggregation.

Demand response programmes can be price-based (or 'implicit') and incentive-based (or 'explicit')[625].

Incentive-based demand response requires consumers to commit to a specific reduction or shift of load in exchange for direct rewards. Demand response through explicit incentives mostly concerns participating in ancillary services, balancing markets and capacity mechanisms[626]. In the case of incentive-based demand, response aggregation is key for market participation, especially when it comes to domestic, commercial and small industrial customers. By organising clusters of flexible resources, including demand and storage assets, aggregators facilitate the participation of these resources in flexibility markets and the provision of system services. Therefore, the existence of aggregators and their access to the market under non-discriminatory conditions, as well as the availability of aggregation services for consumers, are important elements for the organisation of and participation in demand response through explicit incentives.

The flexible retail contracts fall under price-based demand response, where consumers respond to a retail price structure that differentiates between time periods (e.g. time-of-use pricing, dynamic pricing or critical peak pricing (CPP)).

## 3. LEGAL FRAMEWORK

The key provisions for enabling demand flexibility and setting the obligations of the relevant players on the market and the modalities for fostering flexibility in retail electricity contracts including consumers' rights, were introduced with the Clean Energy Package and further strengthened through the EMD reform[627]. Together, the Electricity Directive and the Electricity Regulation provide the legal framework for flexible retail offers and flexibility services.

The Electricity Directive enables consumers to change suppliers promptly, and without undue costs. Since the EMD amendments, consumers can also conclude multiple supply contracts for the same premises without needing an additional connection with the grid. This allows consumers to isolate flexible loads, like electric vehicle charging or heat pumps, from their primary household use. which, in turn, helps to provide flexibility and the remuneration for adjusting the use of those flexible loads in response to prices or, in certain cases. to the needs of the system.

Price-based demand response is most effective in combination with market-based retail prices, as required by Article 5 of the Electricity Directive. In Member States where price interventions remain in place, the transition away from them should be carefully managed to safeguard affordability, while enabling clear price signals that underpin flexible electricity supply contracts.

Article 11 of the Electricity Directive complements the basic provisions on free choice of supplier and market-based supply prices by requiring that at least one dynamic electricity price contract is available on the market for final customers with a smart meter. This type of contract ties the retail

[625] SWD(2013) 442 final.

[626] Or other support schemes, e.g. non-fossil flexibility support schemes in accordance with Article 19g of Regulation (EU) 2024/1747.

[627] EC-ENER website on electricity market design, accessed the 25/9/2025; url: https://energy.ec.europa.eu/topics/markets-and-consumers/electricity-market-design_en.

price directly to wholesale market price changes, encouraging consumers to shift their use to cleaner, cheaper hours. To ensure transparency and trust, and to facilitate informed decisions, suppliers are required to describe in clear terms the possible benefits and risks before customers sign up.

These provisions are reinforced by Article 13 on aggregation contracts and by Articles 15 and 17, which define the regime for active customers and demand response by means of aggregation, respectively. Member States are obliged to ensure non-discriminatory access to all electricity markets for consumers and aggregators, and to establish suitable market mechanisms that give consumers and aggregators flexibility to participate and be properly valued in all markets.

Forthcoming rules, such as the network code on demand response[628] (which will set out a common EU framework for activating and remunerating flexibility across markets) and an Implementing Act on data interoperability for demand response[629] (which will simplify access to relevant data), are expected to complement the existing framework and further support the uptake of demand response. In addition, the code of conduct for smart appliances[630] will help ensure that connected devices in smart homes can seamlessly respond to flexible supply contracts, strengthening both consumer participation and system efficiency.

Accurate measurement and timely information are a prerequisite for the effective market participation of flexibility services. Article 19 of the Electricity Directive requires Member States to roll-out fit-for-purpose smart metering systems, where the cost-benefit assessment is positive or where Member States have decided to proceed with deployment. Smart meters should register the consumption in time intervals that permit time-based pricing and provide consumers with near real-time information.

Article 20 specifies the core functionalities that are essential for dynamic pricing and for developing innovative retail contracts. These functionalities include the ability to: (i) provide validated and non-validated data to consumers and service providers; (ii) guarantee the secure communication of data; and (iii) ensure privacy.

The principles of access to data are established in Articles 23 and 24, which mandate transparent, non-discriminatory handling of data as well as interoperable procedures. These are complemented by the first Implementing Act on access to metering data (Commission Implementing Regulation (EU) 2023/1162)[631], which helps service providers to provide consumers with flexibility solutions.

[628] As provided for in Article 59 of Regulation (EU) 2019/943.

[629] The legal basis for this implementing act is Article 24 of Directive (EU) 2019/944.

[630] EC-JRC website on the Code of Conduct for Energy Smart Appliances, accessed the 25/9/2025; url: https://ses.jrc.ec.europa.eu/development-of-policy-proposals-for-energy-smart-appliances.

[631] Commission Implementing Regulation (EU) 2023/1162 of 6 June 2023 on interoperability requirements and non-discriminatory and transparent procedures for access to metering and consumption data (OJ L 2023/154, 15.6.2023, pp. 10), ELI: http://data.europa.eu/eli/reg_impl/2023/1162/oj.

| Legal provisions enabling demand response and consumer participation in the electricity market (Electricity Directive and Electricity Regulation) | | | |
|---|---|---|---|
| **Cluster** | **Provision** | **Subject** | **Key enablers** |
| **Price-based demand response & consumer choice** | **Article 4** (Directive) | Free choice of supplier | Consumers can switch suppliers without undue cost. Since 2024, it is possible to have multiple contracts for one premises with a single connection with the main grid, allowing flexible loads to be separated from main consumption. |
| | **Article 5** (Directive) | Market-based supply prices | Pricing that reflects the market as the default, with the phasing out of regulated prices, except for targeted protections. This creates a legal basis for flexible retail offers. |
| | **Article 11** (Directive) | Dynamic electricity price contracts | Consumers with smart meters should have access to dynamic pricing offers, thereby linking retail prices to wholesale markets. |
| **Aggregation & active participation** | **Article 13** (Directive) | Aggregation contracts | Consumers should be able to enter into contracts directly with aggregators, without their supplier's consent. |
| | **Article 15** (Directive) | Active customers | Customers can be market actors who generate, store, consume or sell electricity, or participate in flexibility or energy efficiency schemes, individually or through aggregation. |
| | **Article 17** (Directive) | Demand response through aggregation | Aggregators should be given non-discriminatory access to electricity markets and remunerated for flexibility on the basis of market value. |
| | **Article 7b** (Regulation) | Dedicated measurement devices | In the absence of smart meters, dedicated measurement devices can be used to support demand response services. |
| **Smart metering & data access** | **Article 19** (Directive) | Smart metering systems | Member States are obliged to deploy smart meters where the cost-benefit is positive. This provides the basis for time-based pricing, accurate billing and verification of demand response. |
| | **Article 20** (Directive) | Smart meter functionalities | The minimum requirements are: time-based measurement, near real-time data, remote reading and secure communication. These are essential for flexible retail offers. |
| | **Article 21** (Directive) | Entitlement to a smart meter | In cases where there is no systematic deployment of smart meters, consumers are entitled to the installation of a smart meter under certain conditions. |
| | **Article 23** (Directive) | Data management | Authorised parties must be given secure, non-discriminatory access to metering and consumption data, thereby empowering consumer choice. |

| | | | |
|---|---|---|---|
| | **Article 24** (Directive) | Interoperability & data access procedures | Provides for EU implementing acts to establish interoperability requirements and procedures for access to data, thereby ensuring seamless supplier switching and access to the data required for energy services, including demand response. |
| **System security** | **Article 7a** (Regulation) | Peak-shaving product | Allows system operators to procure demand reduction in times of electricity price crises. Recognises flexibility as a reliability and adequacy tool. |

Table 1: Key provisions in EU legislation for enabling demand response.

## 4. SMART METERING AS A FOUNDATIONAL ENABLER

Smart meters are an essential requirement for consumers to participate in flexible energy consumption, making time-based billing possible, enabling real-time insights, and supporting automation. They also provide improved access to metering and consumption data[632] and help final customers receive clear cost estimations and tailored offers. This empowers them to make educated choices.

Alongside smart meters, flexible devices within the home, such as smart appliances, electric vehicles, or heat pumps, play an increasingly important role as a primary source of flexibility. These tools align well with the concept of multiple supply contracts, as set out in Article 4 of the Electricity Directive.

The smart metering infrastructure forms the basis of an innovative retail electricity market. Smart meters that provide granular consumption data enable interaction between demand and supply, so that consumers can be appropriately incentivised for altering their consumption patterns. Hence, smart meters are a key enabler for the introduction of dynamic price contracts, hybrid contracts and local flexibility services in the retail market. Where deployment is more advanced, like in the Nordic region, consumers already enjoy products that are tied to wholesale market prices, thereby encouraging responsiveness on the demand side and helping to lower system costs.

Smart meters provide the measurement data needed to remunerate consumers for their flexibility. They enable suppliers and aggregators to offer products and services based on the actual time of use, thereby providing consumers with greater transparency and confidence. Smart meters also allow system operators to procure network flexibility with clear verification of the services delivered, which helps to minimise high-cost redispatch and unnecessary grid reinforcement.

While the deployment of smart metering systems across the EU has advanced considerably, the situation remains uneven. The penetration rate for electricity smart metering in the EU-27 was

[632] Regulation (EU) 2023/1162 provides a transparent framework for enabling final customers and eligible parties to access validated historical and non-validated near real-time metering and consumption data in a timely, simple and secure manner. The Regulation set rules that promote the interoperability of data access and data exchange by market participants, while promoting energy services and competition in the retail market.

around 60% at the end of 2024, based on data from ACER-CEER[633]. In particular, 15 Member States have reached penetration levels above 80%, including 10 Member States that are close to full coverage. Moreover, 12 Member States remain below 80%, of which 7 Member States are lagging either due to delays in their roll-outs or because they have not yet decided to go ahead with a large-scale deployment. The following graph shows the penetration of smart meters across the EU.

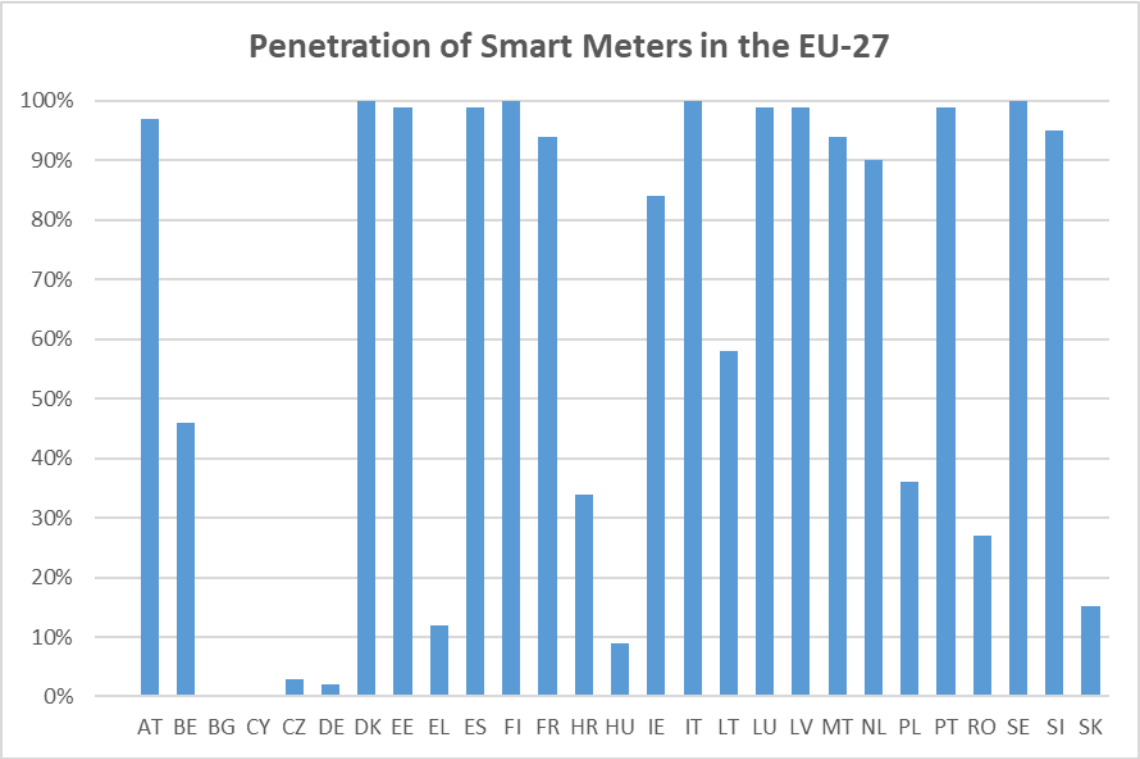


Figure 1: Smart metering deployment in the EU (based on data from the 2024 ACER-CEER MMR Report and the 2025 ACER Country Sheets).

The Electricity Directive (Articles 19 and 20) establishes clear obligations for Member States to deploy smart metering systems where it is economically justified. Members States that are not rolling out smart meters because of a negative cost-benefit assessment[634] are required, in accordance with Article 19(5) of the Electricity Directive, to review their assessments at least every four years, or more frequently where significant changes occur in the underlying assumptions, or in response to technological and market developments.

Smart metering systems should incorporate the functionalities set out in Article 20 of the Electricity Directive. Functionalities such as near real-time data provision and the delivery of

[633] ACER-CEER, 2024 Energy Retail Market Monitoring Report (September 2024) and 2025 ACER Electricity Country Sheets monitoring data (July 2025).
[634] See SWD(2023) 58 final for further information on smart metering roll-out plans across the EU Member States.

validated measurement data that reflect the imbalance settlement period in the national market are crucial for supporting the introduction of energy services that incentivise and reward flexible consumption patterns.

The provision of near real-time non-validated data directly to consumers via interoperable interfaces on smart meters, as required by Article 20, is not used for billing. However, it can support home energy management systems and behind-the-meter flexibility and stimulate innovative offers in the market.

The smart metering infrastructure should also support the option of having different contracts under the same grid connection point where this is technically and economically feasible. In such cases, suitable sub-meters that are linked to the main meter can also be used to obtain measurement data. Where additional costs arise, such costs should be allocated accordingly.

Furthermore, in accordance with Article 20(f) of the Electricity Directive, consumers need appropriate advice and information before or during the installation of smart meters. This should include clear and accessible explanations on the functionalities of smart meters, such as their ability to monitor consumption in near real-time, support for dynamic or hybrid contracts and the possibility to participate in demand response programmes. Providing such information is essential to build consumer trust and enable informed choices. Targeted information programmes and campaigns for consumers, energy service providers and installers are also important. These should aim not only to raise awareness of the options available to consumers, but also to build understanding of how flexibility-enabled appliances (such as heat pumps, electric vehicle chargers, or smart home devices) can interact with smart meters. Such initiatives will accelerate the effective use of flexibility in retail markets by promoting the practical integration of flexible appliances and smart metering infrastructure.

Interoperable access to metering and consumption data is also essential to fully harness the potential of smart meters and to facilitate flexibility services. Articles 23 and 24 of the Electricity Directive set out the principles for data management and interoperability, requiring Member States to ensure that consumers, as well as authorised third parties such as suppliers, aggregators and energy service companies, can easily and securely access relevant data. This framework was set out in more detail in Commission Implementing Regulation (EU) 2023/1162, which lays down a common reference model and principles for the interoperability of energy data access. Member States must implement the reference model, thereby ensuring that data exchange is transparent, standardised and consumer-centric. Building on this foundational framework, the Commission is preparing the ground for more specific technical rules on data interoperability for demand response. These rules will be adopted in an Implementing Act establishing interoperable access to the data necessary for demand response, thereby enabling the retail market to respond effectively to demand signals.

Enabling access to metering data is essential not only to support demand response services but also to foster innovative retail offers and empower consumers to actively manage their consumption and flexibility potential. Smart metering is not an end in itself, but an enabler of consumer participation that can: (i) unlock the potential of retail flexibility; (ii) deliver tangible consumer

benefits; and (iii) support the EU's transition towards a cost-effective, resilient and decarbonised electricity system through increased deployment and effective use of demand-side flexibility.

Realising this potential depends on several enabling conditions linked to the installation and use of smart metering systems. In this context, three interrelated priorities stand out.

- **Rapid deployment:** smart meters should be deployed without delay and fitted with functionalities that enable dynamic prices, near real-time feedback and interoperability for seamless and secure data access.
- **Interoperable access to data:** EU data access requirements, including Regulation (EU) 2023/1162, ensure that both service providers and consumers can readily and effectively make use of metering and consumption data in flexibility services.
- **Promotion of consumer engagement:** to be fully effective, smart meter roll-out should be accompanied by clear communication, in-home displays and digital tools that allow consumers to view, understand and act upon their consumption and energy cost data.

### 5. PROMOTING FIT-FOR-PURPOSE FLEXIBLE RETAIL CONTRACTS

Flexible retail contracts are a main tool that consumers can use to actively engage in the energy transition. They enable better peak management and system efficiency, while at the same time allowing households and businesses to: (i) interact with the market based on price signals; (ii) manage their electricity use; and (iii) reduce their bills. Flexible retail contracts also support the integration of the generation of renewables by incentivising consumption during periods of abundant low-cost, low-carbon electricity.

There are different types of flexible electricity supply contracts that are suitable for different consumer profiles.

- Dynamic pricing contracts[635], which are based on wholesale market prices, provide consumers with price signals that encourage them to adjust their energy use in real time. They are particularly relevant for consumers with flexible assets such as electric vehicles and heat pumps. Such devices can easily shift their demand, thereby reducing energy bills considerably.
- Time-of-use price contracts divide the day into a limited number of price intervals (e.g. day/night or peak/off-peak zones). They are less complicated and more predictable, and are accessible to end-users with fixed load-shifting ability.
- Hybrid contracts often integrate a fixed and a flexible pricing element for consumers who wish to have a more predictable energy cost. They permit the consumer to take advantage of flexibility while avoiding complete exposure to price volatility.
- Critical peak pricing (CPP) contracts apply significantly higher electricity prices during limited periods of system stress, such as exceptionally high demand or tight supply conditions (e.g. because of low RES generation). They are designed to incentivise short-term demand reductions during system stress events, typically announced in advance and applied only for a limited number of hours per year.

[635] Dynamic pricing is often referred as real-time pricing, see for example FSR, *'Dynamic Retail Electricity Tariffs: Choices and Barriers'*, 2020.

Collectively, these contracts provide consumers with ample choice to match their ability and willingness to take advantage of flexibility. The following table summarises the different contract types and their key characteristics.

| Contract type | Key features | Consumer benefits | Risks / limitations | Consumer profile |
|---|---|---|---|---|
| **Dynamic pricing contracts** | - Price reflects variations in wholesale electricity markets;<br>- requires a smart meter. | - Potential for lower bills if consumption is shifted flexibly;<br>- encourages real-time demand response;<br>- supports the integration of renewables. | - Exposure to price volatility;<br>- requires active engagement and/or automation;<br>- not the best option for risk-averse or vulnerable consumers. | - Consumers with flexible assets (EVs, heat pumps, batteries);<br>- digitally engaged households. |
| **Time-of-use price contracts** | - Limited price periods (zones) within the day (e.g. peak/off-peak, 2-4 zones);<br>- prices fixed in advance. | - Simple, predictable incentives to shift load;<br>- makes it easy to understand and manage consumption. | - Less granular responsiveness to system needs;<br>- limited savings compared with dynamic pricing;<br>- requires stable consumption patterns. | - Households with predictable usage (night-time EV charging, heating);<br>- consumers preferring stability with some flexibility. |
| **Hybrid contracts** | Combine fixed-price stability with flexible elements (e.g. fixed baseline + dynamic or zonal component). | - Balance between predictability and flexibility;<br>- consumer-friendly risk profile;<br>- reward partial flexibility. | - More complex contract design;<br>- requires clear communication of terms;<br>- risk of misunderstanding savings potential. | - Wider consumer base, including moderately flexible households;<br>- small businesses;<br>- risk-averse consumers. |
| **Critical Peak Pricing (CPP)** | - High prices during a limited number of 'critical peak' hours, declared in advance (e.g. system stress events);<br>- usually capped at a set number of days/year. | - Strong incentive to reduce demand at times of acute system stress;<br>- helps avoid blackouts and costly generation;<br>- consumers retain stable pricing most of the year. | - Risk of high bills if consumers cannot respond during critical events;<br>- requires clear communication and advance notice. | - Consumers with some flexibility but not ready for full dynamic pricing;<br>- can be combined with other products. |

Table 2: Flexible contract types and key characteristics.

### 5.1. DYNAMIC ELECTRICITY PRICE CONTRACTS

Dynamic electricity price contracts link retail prices directly to wholesale market prices, typically the day-ahead or intra-day market. They can offer significant energy cost savings to consumers with flexible assets and a willingness to manage price risk, such as EV owners or households with smart heating systems, as they allow consumers to benefit from lower prices when renewable generation is abundant, while being exposed to higher prices when the system is tight[636].

According to ACER-CEER data[637], dynamic price contracts are available to households in 16 Member States. However, only in a few countries is there a considerable uptake of such contracts[638]. Smart meters are the technical prerequisite for billing based on time-varying prices, and the Electricity Directive explicitly links the entitlement to dynamic contracts with the presence of such meters. Where smart meters are widely deployed, consumers should be able to access dynamic offers; conversely, in markets without smart meters, such products cannot realistically be implemented[639].

In principle, close alignment would be expected between the roll-out of smart metering and the availability of dynamic electricity contracts. However, the available data reveal that this alignment is not consistent across the EU, demonstrating an imbalance between smart meter penetration and the availability of dynamic contracts. In some Member States, while the deployment of smart metering systems is already underway or completed, households still have no access to dynamic price contracts. This suggests that regulatory frameworks or supplier offerings have not yet caught up, leaving consumers unable to benefit from the flexibility opportunities anticipated under Article 11 of the Electricity Directive. By contrast, other Member States demonstrate the expected alignment of smart meter roll-out with the availability of dynamic price contracts, thereby enabling consumers to respond to market price signals. In most of these cases, consumers also have access to near real-time consumption data.

At the other end of the spectrum, several Member States with very low smart meter penetration, do not offer dynamic price contracts at all, with only a few exceptions. In these markets, the absence of enabling infrastructure explains the lack of offers, but it also highlights the importance of accelerating smart metering roll-outs to unlock demand-side flexibility.

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[636] According to the 2025 ACER-CEER MMR report (*'Rewarding Flexibility: How retail contract choice can help unlock consumer flexibility'*, November 2025), a consumer with an EV and a HP in western and southern Europe would save EUR 979 annually as a result of changing to a dynamic price contract and demand shifting, while in the case of eastern and south-eastern Europe, the total benefit is considerably lower at EUR 137.

[637] The 2024 ACER-CEER Energy Retail Market Monitoring Report (Table, Annex 3).

[638] According to the ACER Electricity Country Sheets (July 2025), the penetration of dynamic price contracts is above 5% only in a few Members States (FI, LV, NL, SE, ES).

[639] According to data from the 2024 ACER-CEER Energy Retail Market Monitoring Report, the Member States with the highest uptake of dynamic price contracts in households are Finland (30%), Latvia (15%), Sweden (14%), Austria (6%), Spain (4%) and the Netherlands (4%). It is also noted that the penetration of dynamic price contracts in EEA member Norway is 93%.

### 5.2. LEGAL FRAMEWORK AND MAIN PRINCIPLES FOR DYNAMIC ELECTRICITY PRICE CONTRACTS

EU law already requires Member States to ensure the availability of and access to dynamic electricity price contracts. Article 11 of the Electricity Directive, together with the definition of dynamic electricity price contracts in Article 2(15), provide a comprehensive framework for introducing corresponding products in the market. All consumers with a smart meter should enjoy the right to a dynamic electricity price contract from at least one supplier and from all suppliers with more than 200 000 customers in the country.

Dynamic price contracts should provide consumers with a close reflection of market price fluctuations, allowing them to respond accordingly. While the price should generally follow the market trend, suppliers may include additional charges or adjustments (e.g. balancing costs, administrative fees, or a margin). The overall objective is that final customers with dynamic price contracts adjust their consumption patterns, providing elasticity of demand and reducing price spikes on wholesale markets.

The Electricity Directive defines dynamic electricity price contracts as supply contracts that reflect prices in spot markets at intervals that are at least equal to the market settlement period[640]. For example, in the case of a product that is linked to a day-ahead market that is settled every hour, the prices should vary hourly or more frequently (e.g. half-hourly). It should be noted that the definition of dynamic electricity price contracts under the Electricity Directive should not exclude other time-differentiated electricity products with less granular pricing periods.

In accordance with paragraph 1a of Article 11 of the Electricity Directive, customers must be informed about the total price and its breakdown, and be given an explanation as to whether the price is fixed, variable or dynamic before they conclude or extend any contract, including a dynamic-price contract. In the case of a dynamic price contract, it is not possible for the suppliers to communicate the final price to the consumer weeks in advance[641]. However, they should be in a position to: (i) clearly communicate how spot market prices translate into consumer prices, detailing any added components so consumers understand the basis for their final price; and (ii) communicate any price changes before these changes take effect. This allows consumers to adjust their usage according to market price signals that reflect the value of electricity in different time periods and to make immediate adjustments in response to these price signals, which is the essence of dynamic pricing.

Furthermore, to ensure consumer protection, final customers need to be fully informed by the suppliers of the opportunities (e.g. lower costs when adapting consumption to cheaper periods, participation in the integration of renewables), costs and risks (e.g. exposure to price spikes, greater bill volatility for consumers without flexibility), in line with Article 11(2) of the Electricity

[640] 'Dynamic electricity price contract' means an electricity supply contract between a supplier and a final customer that reflects the price variation in the spot markets, including in the day-ahead and intraday markets, at intervals at least equal to the market settlement frequency.

[641] As required by Article 10(4) of Directive (EU) 2019/944.

Directive. It is equally important to inform final customers about the technical prerequisites, particularly the need for an adequate smart meter.

### 5.3. HYBRID CONTRACTS

Dynamic price contracts may not be suitable for all customers. The circumstances of some consumers may be such that they are limited in terms of the flexibility they can provide under a dynamic price contract. Other consumers may be concerned about exposure to financial risk during periods of intense price volatility.

Recent energy price spikes have made this even more obvious, highlighting the need for contract options that offer both flexibility and stability. Hybrid pricing contracts can offer a practical middle ground between traditional fixed-rate electricity plans and fully dynamic pricing. They achieve this by providing a blend of stability and flexibility that can be ideal for consumers who want to keep their energy bills predictable but are also open to saving money by adjusting how and when they use electricity. By combining predictability with responsiveness, hybrid contracts can be tailored to diverse consumer needs and have the potential to offer a degree of security, alongside a level of flexibility for these consumers. Thus, they provide consumers with more choice, control and confidence in how they manage their energy use.

Hybrid contracts can combine elements of fixed and variable contracts, offering greater flexibility and protection against market volatility, thereby addressing the needs of households and small businesses that may wish to engage with variable price signals without being fully exposed to market risks. Hybrid contracts come in a variety of formats, each designed to strike a balance between consumer protection and encouraging more active involvement in the energy system.

ACER-CEER[642] identify different types of hybrid contracts. Some hybrid contracts are designed to protect consumers from price spikes while still reflecting market trends. For example, variable and protection plans follow wholesale market prices but also include a price cap, so that the consumer does not experience unexpectedly high bills when prices surge. Other contracts, like fixed or variable rates with free or discounted hours, offer cheaper electricity during certain times like weekends or nights, encouraging consumers to shift their usage to those lower-cost periods. Dynamic price elements can also be coupled with added flexible price elements that incentivise reduced demand during peak hours, helping to align household demand with system needs.

Another category are hybrid contracts that aim to meet the needs of specific consumers, for example those with flexible assets or specific consumption profiles. For example, tailor-made contracts for electric vehicles, which combine flat off-peak rates with smart charging incentives, help to keep charging costs in hand and optimise EV-charging during periods with abundant RES production. Such contracts could accommodate bi-directional charging capabilities, providing specific incentives to encourage consumers to discharge at times of peak demand, and to charge when prices are low. In this context, EU research and innovation activities under Horizon Europe have supported demonstration projects[643] aimed at accelerating the development of vehicle-to-

[642] ACER-CEER, 2024 Energy Retail Market Monitoring Report.
[643] See for example the V2X Cluster of projects: https://ev4eu.eu/v2xcluster/

everything (V2X) technologies and interoperable EV charging solutions, addressing barriers to wider deployment.

All these contract types offer significant benefits. They empower consumers who seek stability but also wish to make savings from flexibility, and they enhance system efficiency by encouraging load shifting during critical periods. To ensure their uptake, Member States should create regulatory conditions that allow suppliers to experiment with innovative hybrid offers, while guaranteeing transparency, comparability and consumer protection. Making such products visible through price comparison tools will be key for consumers to make informed choices and avoid confusion.

While this type of contract is not required by the Electricity Directive, Member States could, with the necessary adjustments, also apply the framework for protecting consumers and monitoring the market described in Article 11 to other flexible electricity supply products, such as time-of-use and hybrid contracts.

In **Finland**, a hybrid contract[644] combines fixed and flexible pricing. Consumers pay a fixed price for their consumption but can reduce their bills by shifting usage to hours with cheaper prices (e.g. between 1:00 am and 6:00 am). They can benefit by correctly timing energy-intensive activities such as EV charging or water heating, while avoiding the risk of significant price increases when compared with a dynamic price contract.

Also in Finland[645], a variation of fixed and flexible pricing combines a fixed-price contract with a monthly 'consumption impact' where consumers can use information received through an application to adjust their electricity usage to take advantage of cheaper days and hours, thereby lowering their final electricity cost.

In **Belgium**, a flexible contract[646] offers fixed off-peak hours in three time periods, combining periods with a low rate and those with a very low rate. The customers can obtain information on the different time periods through an application and optimise their consumption. EV owners can use a smart-charge feature.

In **France**, an EV-specific contract[647] combines a charging station, a dedicated electricity tariff and an application through which the user has access to monitoring and smart charging services. Customers can charge their vehicles during low-cost periods and optimise charging and savings through the smart charging feature.

[644] 'Välkky' contract offered by Väre Ltd.

[645] 'Oomi Flex' contract offered by Oomi Oy; the company estimates that 90% of customers who have this flexible contract pay less than if they had a fully fixed-price contract by timing their electricity usage. Customers can pay more than the fixed rate if they do not time their consumption accordingly. The application plays a key role by informing customers of the most cost-effective consumption periods.

[646] 'Empower Flexi-time' contract offered by ENGIE, for customers with greater consumption who are able to shift a significant part of their electricity consumption (for example electric cars, smart batteries or programmable energy intensive devices).

[647] 'Ma Recharge Intelligente' contract offered by ENGIE.

### 5.4. CRITICAL PEAK PRICING (CPP)

Article 7a of Regulation (EU) 2024/1747 sets out a special peak-shaving product, which is meant to be used only in times of electricity price crisis[648]. In these situations, system operators can request the procurement and activation of such products to reduce electricity demand during peak hours. There are strict limits on how long and how often these measures can be used, and they must be approved by the national regulator before being rolled out.

This regulated peak-shaving mechanism does not exclude the development of market-based CPP offers, which already exist in some Member States, where suppliers offer peak pricing products to incentivise consumers to reduce demand during high-cost periods as part of normal retail operations. Unlike the emergency tool defined in Article 7a, these commercial CPP products are part of regular retail innovation and consumer choice.

### 5.5. ENHANCING CHOICE THROUGH MULTIPLE SUPPLY CONTRACTS

Article 4 of the Electricity Directive strengthens consumer rights by ensuring that all final customers are free to choose their electricity supplier, as well as to conclude more than one supply contract and have more than one metering and billing point under a single connection point for their premises. This option can be enabled by smart metering systems or sub-meters[649].

This new provision has important implications for promoting flexibility in retail contracts. In particular, it allows consumers to disaggregate their electricity demand across different contracts depending on the nature of their loads. Therefore, consumers can cover their electricity needs by using different contracts for their devices, for example:

- a dynamic or time-of-use contract for EV charging, which allows customers with EVs to optimise costs by shifting charging to low-price hours;
- a time-of-use contract (or, where the installation permits, a dynamic price contract or a hybrid contract), which allows customers with heat pumps to cover their heating loads;
- a conventional fixed contract, which allows customers to cover the remainder of their household demand (household base load), providing predictability for daily consumption.

Such contractual separation avoids the ‘all-or-nothing’ choice that consumers may face by adopting a dynamic contract for their entire household consumption. Instead, households can combine stability with flexibility by keeping part of their demand shielded from any price risk, while providing the appropriate price signals to flexible assets.

From a system point of view, letting consumers conclude separate supply contracts for flexible devices helps expand the use of time-based and dynamic electricity pricing without making consumers feel uncertain about their overall energy bills. Also, it may accommodate new business

[648] As declared in accordance with Article 66a of Directive (EU) 2019/944.

[649] According to Recital 19 of Directive (EU) 2024/1711, advances in metering and sub-metering technology combined with information and communication technology make it technically possible to have multiple suppliers for individual premises.

models, where energy service providers can offer integrated solutions for managing flexible loads under separate retail contracts.

This option of multiple supply contracts is particularly relevant in the context of smart metering deployment. By enabling separate metering points under the same connection, smart meters can make it technically and administratively feasible to apply different pricing contracts to different appliances. This could be further supported by automated control devices, allowing consumers to optimise load management without sacrificing convenience. Where smart meters cannot offer this option, suitable sub-meters[650] can be used to support the option of multiple supply contracts.

### 5.6. INTERACTION WITH NETWORK TARIFFS

Network charges make up a considerable part of the electricity bill[651]. While this part may vary depending on how the other parts of the bill (e.g. supply and energy cost, taxes and levies) are formed, it contributes significantly to the overall cost borne by households and businesses. With grid investments expected to increase in the coming years, this part is likely to rise further[652].

Therefore, the way in which these charges are structured can have a direct impact on consumer behaviour, i.e. cost-reflective network tariffs can provide incentives to shift demand away from peak periods, reduce overall system costs and complement flexible retail contracts[653]. When designed in a coordinated manner, network tariffs can complement dynamic and hybrid retail offers, amplifying incentives for consumers to shift demand. Conversely, poorly designed network tariffs risk creating conflicting signals or undermining consumer trust. To maximise effectiveness, tariff structures should reflect system costs, encourage load shifting at peak times, and remain fair and affordable for all users, including those with limited flexibility potential. This can help reduce grid congestion and allow the integration of new loads, thus promoting electrification without the need for costly investments.

Cost-reflective network charges can align with incentives and further reward demand shifts in situations where suppliers offer dynamic or hybrid contracts. On the other hand, if retail and network components are not coordinated, consumers may get conflicting signals that could diminish their trust and engagement. The Commission's 2025 Guidance on distribution tariff

[650] Meters (including sub-meters) used to measure energy for the purpose of electricity supply, should comply with the requirements of Directive 2014/32/EU on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments.

[651] According to the ACER-CEER 2024 Energy Retail Market Monitoring Report, network electricity costs represent 24% of the average EU electricity bill. While network costs used to represent a higher proportion of the electricity bill, the recent electricity price hikes have made the energy component the primary driver of the overall energy cost borne by consumers.

[652] C(2025) 4010 final 'Guidelines on future proof network charges for reduced energy system costs'.

[653] Flexible distribution network tariffs can provide an additional lever for incentivising flexible consumption. Currently, in a number of Member States, optional or mandatory 'night-day' or other time-of-use network tariffs are already applied (ACER, *'Unlocking flexibility: No-regret actions to remove barriers to demand response'*, 2025). Network tariffs can be charged either directly through a grid service contract or indirectly through the energy supply contract.

design[654] highlights that tariffs should be transparent, predictable and based on cost causality, while avoiding undue complexity for consumers.

ACER[655] highlights the absence in several Member States of time-differentiated network tariffs that could enhance the use of flexibility solutions, for instance, by incentivising consumers to invest in generation and/or storage assets to become active customers or to provide implicit demand response.

Properly aligned tariffs and contracts can also improve system efficiency and help contain future cost increases. The joint EEA–ACER assessment[656] stresses that maximising the potential of market signals and cost-reflective network charges will allow consumers to benefit financially from shifting demand, while supporting the integration of renewables and optimising the use of existing infrastructure. In this way, tariff design and flexible contracts together can contribute to a more efficient and equitable energy transition.

Member States and regulators are therefore encouraged to ensure that network tariffs are cost-reflective and provide flexibility signals that are consistent with flexible retail contracts. It is important to ensure close coordination among regulators, system operators and the relevant stakeholders so that network and retail signals become mutually supportive and encourage consumer flexibility.

## 6. KEY CONSIDERATIONS AND GOOD PRACTICES FOR THE UPTAKE OF FLEXIBLE RETAIL CONTRACTS

The deployment of flexible retail electricity contracts builds on the effective implementation of the revised Electricity Directive and Electricity Regulation, and the development of suitable frameworks that boost the availability of flexible offers in the market. Member States and regulators have an important role vis-à-vis key stakeholders in encouraging flexible retail contracts and identifying and reducing barriers to their adoption.

For dynamic electricity pricing to succeed, consumers need clear and transparent information regarding prices and electricity consumption to enable them to make informed choices. Consultation feedback[657] confirmed that transparency and comparability are essential to build trust, while gaps in smart metering and data access remain key barriers. Without such support, unexpected increases in bills could undermine trust and slow down the transition towards a more flexible demand side.

In parallel, it is important to support the introduction of other flexible contracts, such as time-of-use and hybrid products, to meet the needs of a wider customer base. Public input also indicated

[654] C(2025) 4010.
[655] ACER, *'Demand response and other distributed energy resources: what barriers are holding them back?'*, 2023.
[656] EEA-ACER, *'Flexibility solutions to support a decarbonised and secure EU electricity system'*, 2023.
[657] See the feedback to the open consultation held by the European Commission under the 'Citizens Energy Package: Protecting and Empowering Consumers in the Just Transition' (open consultation, Initiative No 14737), *Have Your Say* portal, accessed 25/9/2025; url: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14737-Citizens-Energy-Package-protecting-and-empowering-consumers-in-the-just-transition_en.

strong support for hybrid models as a balanced solution between price signals and consumer protection. Moreover, safeguards are needed to ensure that all contracts remain voluntary, transparent and comprehensible, with special attention being given to consumers who may be less able to assess the risks and opportunities of such products. Stakeholders also underline the need for proportionate protections, particularly for vulnerable consumers, while cautioning against blunt measures that could weaken price signals.

Building on these insights, a number of good practices and areas for consideration emerge that may merit particular attention at national level. Retail product diversification with the introduction of dynamic, time-of-use and hybrid products that limit market exposure while preserving price signals, so that consumers with differing degrees of willingness and ability to take risks have the choice of a flexible contract.

Innovation may be encouraged, including through pilot projects and regulatory sandboxes for new products in the market, such as hybrid contracts. This can be complemented, where appropriate, by fair, time-limited and socially calibrated incentives to support the initial uptake of flexible offers and enabling devices (e.g. EV and heat pump integration, smart controllers), while avoiding regressivity and ensuring that vulnerable and energy poor households are not excluded.

Flexibility works best when it remains voluntary, transparent and tailored to different consumer needs, with safeguards for energy-poor and vulnerable customers. Retail offers are most effective where they reward flexibility that can genuinely be delivered, while providing appropriate protection for those less able to engage in flexibility, including protection from unfair marketing practices.

The availability of fit-for-purpose smart metering and optimal access to data remains central. Accelerating smart meter roll-out and fully enforcing data access interoperability requirements (Implementing Regulation (EU) 2023/1162) can enable timely and secure access to information for consumers and service providers. Minimum standards in line with the mandated functionalities (Article 20 of the Electricity Directive) for smart meter coverage, near-real-time data access and automation hooks can help ensure that consumers and third-party tools are able to respond effectively.

Raising consumer awareness through clear information regarding the advantages, disadvantages and appropriateness of each contract type can further strengthen trust. This may include clear and simple campaigns covering price formation, typical bill impacts for different consumer profiles, risk scenarios and complaints channels. Illustrative bill comparisons, showing what a consumer would have paid under dynamic, fixed or time-of-use offers, based on historic consumption data can support informed decision making. Independent customer risk-profiling methods may also be considered prior to the conclusion of contracts with customers. Disclosure of the allocation of risks and remuneration principles in simple, comparable terms can enhance transparency. Moreover, during contract performance, personalised information and advice can help consumers adjust their consumption habits accordingly.

Online comparison tools that also present risk exposure and potential savings for the consumer, compared with fixed-price or other time-differentiated products, can contribute to improved

transparency. Such tools should benefit from being neutral, publicly overseen and accessible to digitally less-skilled consumers.

The use of automation technologies (e.g. home management systems and smart thermostats, EV smart chargers, smart devices) can support consumers benefit from dynamic pricing without constant manual intervention. When developing national initiatives relating to smart appliances, Member States may build on the EU Code of Conduct for Interoperable Energy Smart Appliances. This will encourage the uptake of appliances with interoperable and open flexibility features, rather than the development of national approaches that risk fragmenting the single market for appliances, such as heating, ventilation and air conditioning appliances, or white goods[658].

Addressing digital inclusion and equitable access remains important to ensure that consumers with limited digital skills or connectivity are not left behind. Measures such as offline access points, helplines, paper-based comparison tools and targeted support through consumer organisations can help ensure that flexible offers are accessible to all households and are not at risk of being underused due to digital barriers.

The development of simple guides by national consumer organisations and energy regulators can support consumers in understanding which profiles are most suited to dynamic, time-of-use or hybrid contracts. Such guides may also highlight targeted safeguards available to vulnerable consumers and energy poor, such as optional 'bill-stabiliser' features within flexible contracts. These mechanisms can cushion households from short-term volatility or temporary extreme price spikes while preserving the incentive to shift demand, and may take the form of optional add-ons, targeted measures for vulnerable groups, or temporary instruments activated during crisis periods.

Progress can be monitored and reported by Member States and/or regulators, including: (i) tracking the take-up of dynamic price contracts and their impact on electricity costs for consumers; and (ii) reporting their findings accordingly to inform evidence-based adjustments in the market in line with Articles 11 and 59 of the Electricity Directive. Monitoring can also consider equitable and distributional outcomes, consumer complaints and the effectiveness of protection measures thereby contributing to continuous and proportionate market adjustments. In that context, similar considerations may also be applied when assessing the development of other flexible retail contracts.

## 7. CONCLUSIONS

Evidence shows that retail flexibility plays an increasingly important role in a consumer-centric, affordable and resilient energy system. Dynamic, time-of-use and hybrid contracts, supported by smart metering and clear data access rules, enable consumers to participate more actively in the market, lower their bills and contribute to overall system efficiency.

[658] The Commission will ensure that models declared compliant with the code of conduct by the signatory manufacturers can be found when searching on the European Product Registry for Energy Labelling (url: https://energy-efficient-products.ec.europa.eu/eprel_en).

Flexibility delivers the greatest benefits when it remains voluntary, transparent and tailored to different consumer needs, with safeguards for vulnerable customers. Retail offers work best where flexibility can actually be achieved, while consumers who are less able to fully engage require appropriate protection.

Broad participation depends on incentives that are clear, easy to understand and financially attractive to encourage consumers to opt in with confidence. A diverse range of supply offers can cater for different consumers' needs, including innovative contracts that balance fair remuneration with limited exposure to risk and price volatility. Hybrid contracts are particularly relevant in this context, as they allow consumers to secure a stable price component while taking advantage of a flexible price element during low-cost periods.

Overall, the transition towards electricity prices that reflect real market conditions, benefits from a balanced approach that combines market-based signals with practical measures that build trust and encourage consumer participation. Such measures typically involve the roll-out of smart meters, interoperable access to data, the availability of innovative contract options and investment in consumer information and education so that consumers feel confident in making their choices.

Monitoring the uptake of flexible contracts helps identify what is working and where adjustments may be appropriate. This can contribute to unlocking the full potential of retail flexibility, make it easier to integrate more renewables into the grid and support affordability and fairness, while advancing the EU's broader goals of decarbonisation, competitiveness and consumer empowerment.