The Consumer Voice in Europe

REAPING THE BENEFITS OF RENEWABLES FOR CONSUMERS

BEUC's preliminary views on the wholesale market elements of the upcoming reform of the EU electricity market design

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Why it matters to consumers

Following Russia's decision to cut Europe's gas supply, consumers' electricity prices skyrocketed because Europe is too dependent on fossil gas to produce its electricity. This put tens of millions of households on the brink of energy poverty. To avoid volatility in international gas prices having an impact on consumers' energy bills, the European Commission should promote the build-up of new renewable power plants and grant consumers direct access to their stable prices. In addition, the European Commission should also promote flexible electricity consumption, to avoid the need to rely on gas in power generation when there are demand peaks.

Summary

During the past 25 years, the European Union successfully built an increasingly integrated electricity market. The upcoming reform of its rules is an opportunity for consumers to better be able to reap its benefits. To improve the functioning of wholesale electricity markets from the consumer perspective, the revision of the Electricity Market Design should:

1. Increase long-term price stability through consumers' access to renewables

- Require retail electricity suppliers to cover a minimum share of the electricity they supply to their customers with renewable power purchase agreements (PPAs), or alternatively with forward contracts or own generation capacities.
- Simplify access to renewable PPAs and further reduce their costs through pooling demand, state-backed guarantees and by making them tradable.
- Avoid over-subsidising renewable power plants by not making two-way Contracts for Difference (CfDs) mandatory. Government revenues generated by CfD schemes should be channelled back to foster consumers' investments in energy efficiency and renewables (e.g., by providing support for consumers to install solar panels).

2. Let consumers' flexibility replace fossil gas peak power plants

- Consumers should have better and easier-to-understand information on the financial benefits of flexibility, nudging them to engage in offers that remunerate their flexible consumption.
- Consumers have the right to a sub-meter, allowing them to sign up for a dynamic price tariff for those appliances that they can operate flexibly (e.g., electric vehicles, heat pumps), on the side of a fixed price tariff for the rest of their consumption.
- The minimum size for operators to participate in all electricity markets should be reduced, to make it easier for aggregators to access the market and ensure that consumers have access to financially attractive offers remunerating their flexibility.
- To phase out expensive fossil fuels, access to capacity mechanisms of consumers' flexible consumption should be facilitated. Capacity mechanisms should entail a minimum share of 50% of the contracted capacity from energy storage and/or demand response.

3. Allow all consumers to share energy based on cost-reflective network charges

- The Electricity Directive should clarify the rights and responsibilities of consumers who engage in energy sharing.
- Consumers should be able to participate in energy sharing that allows them to remotely use renewable electricity produced anywhere in the same bidding zone or transmission system area.
- Network charges should be cost-reflective and reward local self-optimisation.

This position paper details BEUC's views on the upcoming reform of the EU electricity market design that relate to the rules for the wholesale electricity market.

BEUC recommendations on consumer rights in retail markets are outlined in a separate paper.[1]

[1] On retail markets, see our position paper 'An electricity market that delivers to consumers', October 2022.

1. Increase long-term price stability through consumers' access to renewables

The current EU electricity market design exposes consumers to the volatility of wholesale prices. Retail suppliers quickly transferred the recent fossil gas price increases to households' bills.

Although solar photovoltaics and wind power have become the cheapest sources of electricity supply in the EU, only a few big corporate off-takers have the opportunity to access them directly under **Power Purchase Agreements (PPAs)**. These long-term contracts, concluded with operators at a fixed price for up to 20 years, should become more accessible to electricity suppliers, who could then transfer their price stability to consumers. This would allow consumers to benefit from more stable prices.

1.1. How to make low-cost renewables accessible to household consumers

It is neither realistic nor desirable that individual household consumers enter direct supply contracts with renewable power plant operators. Consumers do not have an interest to directly sign up to PPAs. They do not have an interest to purchase the entire production of a renewable power plant, as it would be much larger than their electricity needs and would presumably not wish to be tied to one supplier for more than ten years through a PPA.

Cheap renewable electricity could however lower household consumers' bills indirectly **if retail suppliers integrated long-term renewable PPAs into their supply portfolios**. Currently, this is not happening because the too large volume and too long duration of PPAs mostly does not match well the purchasing strategy of retail suppliers. PPAs do not necessarily fit into their specific portfolio. Suppliers also have no incentive to hedge their offers, as the current Electricity Directive allows them to increase consumers' prices at any point in time.[2]

To allow retail suppliers to access renewable PPAs and transfer their price stability to consumers, the Revision of the Electricity Market Design should:

- **Facilitate the aggregation of retailers** so that the aggregated pool can purchase PPAs from one single or several renewable power plant operators,[3]
- **Harmonise elements of PPA contracts**, allowing them to be easily traded on energy exchanges among market participants. As the price of trades in energy exchanges is public, if PPAs are traded in energy exchanges, this means an increase in their price transparency.[4] This in turn leads to lower procurement costs for suppliers, hence lower prices for consumers,
- Require Nominated Electricity Market Operators (NEMOs) to create **trade platforms** where to trade PPAs,[5]

1.2. How to kick-start the broadening of renewable PPAs

As an insurance against future price shocks and liquidity risks, the revision of the Electricity Market Design should foresee hedging obligations for suppliers. These hedging obligations

[2] See Article 10.4 of Directive (EU) 2019/944 on common rules for the internal market for electricity.
[3] See, for example, how Energi Danmark pools smaller customers to provide them access to PPAs (https://www.energidanmark.com/one-stop-shop/energy-for-businesses/ppa-pool/).
[4] European Commission: Guidance to Member States on good practices to speed up permit-granting procedures for renewable energy projects and on facilitating Power Purchase Agreements. SWD(2022)149, May 2022.
[5] CERRE: Recommendations for a Future-Proof Electricity Market Design, December 2022.

would allow retail suppliers to back up the fixed price fixed term contracts of their customers in a more stable and credible way.[6]

Suppliers should be able to fulfil this obligation by entering in renewable PPAs, by purchasing futures or forward contracts or through own generation assets including renewable energy installations.

If retail electricity suppliers are obliged to integrate long-term renewable PPAs into their portfolio, they would not only be better protected but also offer more stable, potentially lower retail rates.

National Regulatory Authorities should be tasked with establishing such hedging requirements at the national level.

If the national regulator finds disproportionate burdens, energy communities could be exempted from this obligation. In addition to the hedging provision, governments could also trigger sufficient volumes of renewable PPAs through a dedicated target for newly built renewable power plants to operate under PPAs.[7]

1.3. How to ensure a targeted use of disproportionate renewable power plant operators' revenues

Another way to avoid renewable power plant operators making excessive revenues when wholesale electricity prices increase is to promote two-way Contracts for Difference (CfDs).

A CfD is a long-term contractual agreement between a renewable electricity generator and a government entity, designed to provide the generator with price certainty over the lifetime of the contract. The contract foresees that the generator receives a pre-agreed price for all the electricity that they produce and sell on wholesale markets.

If wholesale prices are lower than this strike prices, the government entity covers the difference. If wholesale prices are higher than this strike price, then the generator returns the difference to the government entity, and then transferred to state budget.

The revised Electricity Market Design should require Member States to channel the revenues generated by CfDs back to consumers, e.g., through subsidies for energy efficiency improvements, or for supporting consumers' access to renewable energy supply such as solar self-generation, or to electric heat pumps.

1.4. How to prevent detrimental effects of Contracts for Difference

Despite the abovementioned advantages, it would not be appropriate to make two-way CfDs mandatory for new or existing renewable power plants:

1. Not all renewable power generation facilities require a subsidy like a CfD to enter the market anymore, due to strong cost reductions over the past decade. It would unnecessarily increase the costs of market introduction of renewables to the detriment of taxpayers and/or consumers' electricity bill.
2. When it comes to reclaiming excess revenues during periods of sustained high prices, two-way CfDs are neither the single choice nor the silver bullet. If power producers enter long-term renewable PPAs, then these excess profits do not materialise in the first place. For power producers who, instead, sell on short-term markets, Member States can rely on corporate taxation to avoid disproportionate revenues.
3. Any CfD agreement would involve disproportionately high administrative costs if applied to small-scale renewable self-generation in the hands of households.

[6] Backing retail tariffs with renewable PPAs also closes the doors against greenwashing. Consumers would pay for electricity from clearly identifiable renewable power plants instead of paying for 'virtual' Guarantees of Origin (GOs) that are decoupled from the financial flows. For this reason, BEUC's Dutch member Consumentenbond recommends those retail suppliers that already integrate renewable PPAs into their portfolios.
[7] For example, the Irish government has already introduced such a national PPA target.

Long-term price stability: Key demands

Introduce hedging requirements for suppliers, that can be fulfilled with renewable power purchase agreements (PPAs), forward contracts, futures or own generation capacities.

Simplify access to renewable PPAs and further reduce their costs through pooling demand, state-backed guarantees and by making them tradable.

Avoid over-subsidising renewable power plants by not making two-way Contracts for Difference (CfDs) mandatory. Government revenues generated by CfD schemes should be channelled back to foster consumers' investments in energy efficiency and renewables (e.g., by providing support for consumers to install solar panels).

2. Let consumers' flexibility replace fossil gas peak power plants

When renewable power generation is not sufficient to meet society's demand, the electricity system needs to rely on expensive gas power plants to ensure that all consumers have access to electricity. However, should consumers receive financial incentives to use electricity flexibly or to purchase storage technologies, this would reduce the need to rely on gas power plants. This would in turn lead to lower electricity prices for consumers.

2.1. How to engage more consumers in flexibility

Demand response schemes and energy storage can significantly cut consumers' bills as well as the costs of running the energy system.[8] Engaging in such offers with variable prices and remuneration is however very complex for household consumers. Consumers need better information on realistic savings that they can achieve by engaging in these offers.

Consumers can provide flexibility to replace fossil gas peak power plants:

- In demand side response schemes, they ramp up or down their demand in response to a price signal to ease grids during oversupply or scarcity.
- With electricity storage such as home batteries, they can not only optimise solar self-consumption but also help to stabilise grids, serving as a back-up capacity.

The following improvements in the electricity market design would empower consumers who engage in electricity markets through demand response and storage:

- **Improve pre-contractual information** and **price comparison tools**: Consumers should have access to an estimate of savings that typical households can achieve with offers harnessing consumers' flexibility. Price comparison tools should integrate such parameters.

[8] BEUC: Consumers and the future electricity grids. How to make flexible consumption a win-win, October 2019.

- **Protect consumers from bill shocks**: National Regulatory Authorities should require suppliers to offer dynamic price tariffs that float within a clearly defined price corridor.[9] Suppliers should be required to inform consumers when their expected optimal consumption pattern deviates fundamentally over a certain period from the sustainable pricing model that was envisaged when concluding the contract.

- **Grant a right to a sub-meter**: Charging an electric vehicle is an inherently flexible electricity consumption because it is indifferent for consumers when their car is being charged, as long as they have a guarantee of a full charge when they need it. Similarly, consumers can shift the time at which their heat pumps are heating their homes, as they can decide to pre-heat them to avoid operating them between 6 and 8 pm, when overall demand and wholesale prices are the highest.

  Consumers should be able to sign up a separate dynamic price contract rewarding them financially for shifting their demand. The technical prerequisite for tracking this flexible consumption of the heat pump or of the electric vehicle with sufficient granularity is a sub-meter. Consumers should have the right to ask for a sub-meter. Consumers who ask for a sub-meter should not be penalised by disproportionate installation fees and network charges. The revised Electricity Directive thus should require National Regulatory Authorities to identify the costs for the roll out of sub-meters with the aim of defining thresholds for the fees that could be allocated to consumers. Access to sub-metering data should be at no additional cost and follow interoperability requirements, following provisions that apply to metering under articles 23 and 24 of the Electricity Market Directive.

2.2. How to make demand response and storage worthwhile from the consumer perspective

The hurdles for aggregators of flexibility to enter wholesale markets currently are too high. They prevent the broad market introduction of offers that reward household consumers for shifting their demand.

Aggregators of consumers' demand response should get simplified access to wholesale electricity markets. Network codes[10] should be amended to foresee a lower minimum threshold of aggregated demand response for participating in all market segments.

Current capacity mechanisms favour fossil fuels. Electricity storage technologies such as home batteries of solar self-generators or consumers' demand response can take over their role as a flexible backup solution. If capacity mechanisms are made more accessible to demand side response and storage, it also could become more financially attractive for consumers to engage in flexibility.

The activation of consumers' flexibility and storage technologies would reduce the need for fossil gas turbines, hence consumers' electricity prices, as well as greenhouse gas emissions. Current rules, however, restrict participation to capacities above a relatively high threshold. This makes it impossible for aggregators with small-scale capacities to contribute. The minimum size for bids from storage and demand response to participate in capacity mechanisms should be lowered to allow more small-scale installations and schemes.

[9] Such dynamic tariffs unite a certain price stability for consumers with a meaningful incentive to shift demand. For example, the German aggregator Awattar (https://www.awattar.at/tariffs/hourly) and the UK retail supplier Octopus (https://octopus.energy/works-with-octopus/#smart_tariffs) offer such tariffs.
[10] Including the Electricity Balancing Guidelines and the System Operator Guidelines.

Whenever capacity mechanisms are launched, they should entail a minimum share of 50% of the contracted capacity that shall originate from either energy storage or demand response or a combination of both.

Consumers' flexibility: Key demands

Consumers should have better and easier-to-understand information on the financial benefits of flexibility, nudging them to engage in offers that remunerate their flexible consumption.

Consumers have the right to a sub-meter, allowing them to sign up for a dynamic price tariff for those appliances that they can operate flexibly (e.g., electric vehicles, heat pumps), on the side of a fixed price tariff for the rest of their consumption.

The minimum size for operators to participate in all electricity markets should be reduced, to make it easier for aggregators to access the market and ensure that consumers have access to financially attractive offers remunerating their flexibility.

To phase out expensive fossil fuels, access to capacity mechanisms of consumers' flexible consumption should be facilitated. Capacity mechanisms should entail a minimum share of 50% of the contracted capacity from energy storage and/or demand response.

3. Broaden consumers' engagement through energy sharing

Thanks to its massive cost reductions,[11] renewable self-consumption allows millions of consumers a direct access to affordable energy.[12] Although existing EU legislation provides a strong legal framework, not all consumers can directly benefit from the stable price of renewable electricity because they cannot install solar panels at their premises (e.g. because they live in a multi-unit building) or because they are not willing to join an energy community.

Moreover, Member States have often implemented these consumer rights inconsistently, limiting the scope of renewable self-consumption.[13] The reform of the electricity market design is an opportunity to promote consumer engagement in renewables.

3.1. How to engage more consumers in renewable self-consumption

The legal form of an energy community is an effective tool to unite consumers so that they can jointly invest into and benefit from renewable energy. While communities have proven to be a success story for energy democracy,[14] they can come along with the obligation to own generation capacities and/or to buy shares. For low-income households, this is a

[11] International Renewable Energy Agency (IRENA): Renewable power generation costs in 2021, July 2022.
[12] CE Delft: Potential of prosumer technologies in the EU, March 2021.
[13] CLEAR X project: Policy recommendations, February 2022; REScoop.eu: Transposition tracker (https://www.rescoop.eu/transposition-tracker); Frieden/Tuerk/Antunes et al: Are we on the right track? Collective self-consumption and energy communities in the European Union. In: Sustainability, 2021, 13, 12494.
[14] Diestelmeier/Cappelli: Conceptualizing 'energy sharing' as an activity of 'energy communities' under EU law: Towards social benefits for consumers? Journal of European Consumer and Market Law, 1/2023, vol. 12, p. 15-24, February 2023.

barrier to entry. As legal provisions at the national level can **geographically limit activities** of renewable energy communities,[15] many consumers might just not find any community to join.

The Electricity Directive should **ease consumers' access to collective self-consumption**. Consumers who cannot (or do not want to) become a member of an energy community need an alternative. Legal provisions must be reinforced in this regard. It is not necessary to introduce a new legal entity in addition to energy communities. A clear definition of energy sharing as a distinct activity would suffice.

3.2. How to define energy sharing

Energy sharing should be defined as a form of collective renewable self-consumption. Household customers and/or small and medium-sized enterprises (SMEs) should be able to directly provide all, or a certain part of the renewable electricity that they generate to other consumers, using the existing electricity grid. Consumers should be able to purchase electricity in energy sharing schemes whenever they match their demand with the available shared renewable electricity, based on smart metering with at least hourly netting.

- Energy sharing should not be the primary commercial activity of involved consumers.
- Energy sharing must allow participation independently from ownership of generation capacities. No limitations shall apply to the size of the installed capacity or the amount of shared kilowatt-hours.
- Energy sharing must enable exchanges going beyond exchanges in a building, behind a metering point or substation. It shall enable consumers to remotely access renewable electricity across an entire bidding zone.
- Energy sharing shall be facilitated by a professional intermediary, in contrast to simple peer-to-peer trading between two persons. The legal entity taking over this role is an energy community, an aggregator or a licensed retail electricity supplier.

3.3. How to integrate energy sharing in electricity grids and markets

Member States should ensure that consumers can engage in energy sharing schemes within an entire bidding zone or a Transmission System Operator's (TSO) control area.

The Electricity Directive should require Member States to develop a protocol for the settlement between the administrator of an energy sharing scheme and the Distribution System Operator (DSO). This protocol should clarify the responsibilities of the different roles, including retail suppliers that continue delivering electricity to consumers whenever they cannot match their demand with the shared renewable electricity.

The balancing responsibility should be assigned to the legal entity that takes over the role of the energy sharing administrator. Alternatively, energy sharing administrators should have the right to fall back on the supplier of last resort in case of limited access to balancing service providers.

3.4. How to ensure consumer rights in energy sharing

The Electricity Directive should guarantee that the existing consumer rights and protections apply to the activity of energy sharing, regardless of the legal entity taking over the role of the energy sharing administrator. Whoever administrates the energy sharing scheme has a duty to provide clear pre-contractual information, including how much shared

[15] The Renewable Energy Directive defines renewable energy communities as a group of shareholders or members 'located in the proximity of the renewable energy projects that are owned' (Directive (EU) 2018/2001, art. 2(14)). While the Electricity Market Directive defines citizen energy communities without any reference to the geographical proximity, some Member States however apply just one single community definition with a geographical limitation or confining the community concept to self-consumption on premises.

electricity is available through the scheme. Consumers should have the right to receive a bill for the electricity that they purchase through the energy sharing scheme. Consumers need to know whether the shared kilowatt-hours will be deducted from their retail supplier's bill or whether they will get a separate bill from the energy sharing administrator. Energy sharing schemes also must entail access to alternative dispute resolution (ADR).

National regulators should be tasked with the elaboration of a template agreement for contracting parties in energy sharing. Such a template would make it easier for consumers to enter in such agreements and would increase transparency and comparability of energy sharing offers.

The Electricity Directive should grant consumers the right to sign up to an energy sharing agreement on top of an offer from their "default" supplier.

3.5. How energy sharing can ease electricity grids with cost-reflective network tariffs

If renewable electricity is generated and consumed at the same time, this reduces the cost of managing the grids. Such local self-optimisation of consumers prevents grid congestion and helps to accommodate additional power flows with less grid expansion.

National Regulatory Authorities should be tasked with assessing what are the costs that energy sharing schemes generate in electricity grids and establish dedicated network tariffs reflecting such costs.[16]

Consumers should be exempted from the payment of any network charges in the case where the solar panel and the consumer are connected to the same distribution grid substation.[17]

Energy sharing: Key demands

The Electricity Directive should clarify the rights and responsibilities of consumers who engage in energy sharing.

Consumers should be able to participate in energy sharing that allows them to remotely use renewable electricity produced anywhere in the same bidding zone or transmission system area.

Network charges should be cost-reflective and reward local self-optimisation.

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[16] This rationale is already applied in the Brussels region, where the regulator BRUGEL adopted special distribution network tariffs for energy sharing, based on an assessment of avoided grid costs made by the DSO (https://energysharing.brugel.brussels/energysharing/tarifs-de-reseau-409).

[17] For instance, in Spain, no network charges apply in case of energy sharing behind the substation ('autoconsumo compartido', https://energia.gob.es/electricidad/autoconsumo-electrico/Paginas/preguntas-frecuentes-autoconsumo.aspx).

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