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Public Consultation: Revision of the EU's electricity market design

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Electricity Market Design

The consultation document with the questions can also be downloaded here:

[EMD Consultation document.pdf](#)

Introduction

Background

Over the last year, electricity prices have been significantly higher than before. Prices started rising rapidly in summer of 2021 when Russia reduced its gas supplies to Europe while global demand picked up as COVID-19 restrictions were eased. Subsequently, Russia's invasion of Ukraine and its weaponisation of energy sources have led to substantially lower levels of gas delivery to the EU and increased disruptions of gas supply, further driving up the price. This has had a severe impact on EU households and the economy. High gas prices influence the price of electricity from gas fired power plants, often needed to satisfy electricity demand.

In the immediate reaction to global dynamics, the EU provided an energy prices toolbox with measures to address high prices (including income support, tax breaks, gas saving and storage measures). The subsequent weaponisation of gas supply and Russia's manipulation of the markets through intentional disruptions of gas flows have led not only to skyrocketing energy prices, but also to endangering security of supply. To address it, the EU had to act to diversify gas supplies and to accelerate energy efficiency and the deployment of renewable energy.

Following the Russian invasion of Ukraine in February 2022, the EU responded with REPowerEU - a plan for the Union to rapidly end its dependence on Russian energy supplies by strengthening the European resilience and security, reducing energy consumption, accelerating the roll-out of renewables and energy efficiency, and securing alternative energy supplies. The EU also established a temporary State Aid regime to allow certain subsidies to soften the impact of high prices. Further, to address the price crisis and security concerns, the EU has agreed and implemented a strong gas storage regime, effective demand reduction measures for gas and electricity, and price limiting regimes to avoid windfall profits in both gas and electricity markets.

The EU Electricity Market Design

The current electricity market design has delivered a well-integrated market, allowing Europe to reap the economic benefits of a single energy market in the normal market circumstances, ensuring security of supply and sustaining the decarbonisation process. Cross-border interconnectivity also ensures safer, more reliable and efficient operation of the power system.

Market design has also helped the emergence of new and innovative products and measures on retail electricity markets – supporting energy efficiency and renewable uptake and helping consumers reduce their energy bills also through emerging services for providing demand response. Building on and seizing the potential of the digitalisation of the energy system, such as active participation by consumers, will be a key element of our future electricity markets and systems.

In the context of the energy crisis, the current electricity market design has however also demonstrated a number of shortcomings. The reforms the Commission will undertake will address those shortcomings and ensure stable and well-integrated energy markets, which continue to attract private investments at a sufficient scale as an essential enabler of the European Green Deal objectives and the transition to a climate neutral economy by 2050.

In addition to these shortcomings, the European electricity sector is facing a number of more long-term challenges triggered by the rising shares of variable renewable energy and the progressive drive towards full decarbonisation by 2050. This includes ensuring investments, not just as regards renewables but also as regards weather independent low-carbon technologies until large scale storage and other flexibility tools become available. Stronger locational price signals in the system may be needed to ensure that the investments take place where they are needed, reflecting the physical reality of the electricity grid whilst at the same time ensuring incentives for cross-border long-term contracting. Some of these challenges will require ongoing policy reflections going beyond the scope of the current reform.

Making Electricity Bills More Independent from the Short-Term Cost of Fossil Fuels

The strong focus of the current market design on short-term markets, still very often determined by volatile fossil fuel prices, has exposed households and companies to significant price spikes with effects on their electricity bills. Many consumers found they had no option but to pay higher electricity prices driven by wholesale gas prices – either because they had no access to electricity cheaper electricity from renewable sources or could not install solar panels themselves.

The current regulatory framework regarding long-term instruments has proven insufficient to protect large industrial consumers, SMEs and households from excessive volatility and higher energy bills.

The gas price increase together with the strong role that short-term markets play in today's electricity market design have also boosted the revenues and profits well beyond the expectations of many generators with lower marginal costs such as renewables and nuclear (“inframarginal generators”), while receiving – in some cases - public support as well.

Short-term markets remain essential for the integration of renewable energy sources in the electricity system, to ensure that the cheapest form of electricity is used at all times, and to ensure that electricity flows smoothly between Member States. Whilst short-term price spikes can in general incentivize consumers to reduce or shift their demand, sustained high prices over a longer period translate into

unaffordable bills for many consumers and companies.

This is why there is a need to complement the regulatory framework governing these short-term markets with additional instruments and tools that incentivise the use of long-term contracts to ensure that the energy bills of European consumers and companies - and the revenues of inframarginal generators - become more independent from the fluctuation of prices in short-term markets (often driven by fossil fuel costs) and thus more stable over longer periods of time. The reforms should create a buffer between consumers and short-term markets, ensuring that they will be better protected from extreme prices and that electricity bills better reflect the overall electricity mix and the lower cost of generating electricity from renewables. Electricity bills across Europe should depend less on the short-term markets, with an increasing share of consumers shifting into more stable and affordable longer-term pricing arrangements.

There are two main types of long-term contracts which allow to pass on the benefits of renewables to all consumers. One is power purchase agreements (PPAs) between private parties which ensure that electricity is sold on a long-term basis at an agreed price, therefore not determined by short-term markets. Power purchase agreements bring multiple benefits. For consumers, they provide cost competitive electricity and hedge against electricity price volatility. For renewable projects developers, they provide a source of stable long-term income. For governments, they provide an alternative avenue to the deployment of renewables without the need for public funding. Although power purchase agreements are becoming more widespread in the EU and the Renewable Energy Directive obliges the Member States to remove unjustified barriers to their development, the overall market share of power purchase agreements remains limited. The growth of power purchase agreements is concentrated in some Member States only and confined to large companies.

The Commission will suggest ways in which the share of PPAs in the overall electricity market can be increased and their roll-out incentivised through the market design. The uptake of power purchase agreements, in particular by small and medium companies, can, for example, be more widely promoted by public tendering for renewable energy in which a share of a project could be contracted through power purchase agreements. Credit guarantees to power purchase agreements backed by public actors could be considered as a form of support that could efficiently drive the emergence of a power purchase agreement market. Potentially, measures could be considered to ensure that industrial consumers use the full potential of power purchase agreements to lower their exposure to short-term markets and that energy suppliers more actively enter into the power purchase agreement market.

The other type of long-term contracts applies where public support is needed to trigger investments, so-called two-way contracts for difference ("two-way CfDs"). These contracts ensure that the income of the generators in question (and the corresponding cost for consumers) provides an adequate incentive to invest and is less dependent on short-term markets. These contracts for difference are typically established by a competitive tender process, allowing support to be channelled to the projects with the lowest expected production costs. In situations of very high prices two-way CfDs would provide Member States with additional funds for reducing the impact of high electricity prices on consumers.

The upcoming reform offers an opportunity to present ways in which two-way CfDs can be integrated into the electricity market design. A number of issues need to be considered in this context, notably as to the extent to which the use of CfDs becomes mandatory for investments involving public support and whether the use of such contracts should only cover new generation assets entering the market or also certain types of existing generation assets.

In any case, given the multiple benefits of the power purchase agreements, the actions of the reform concerning the CfDs should not affect the development of the power purchase agreement market across the EU. Both instruments are necessary complements to achieve the necessary deployment of renewables.

- The simplest way to introduce two-way CfDs would be to complement the existing principles for support schemes with the specific ones to govern such contracts in the regulatory framework, with Member States deciding whether or not to use these instruments to drive new investments in inframarginal generation.
- A more binding way to anchor these contracts in the regulatory framework would be to require that all investments involving the use of public support rely on such contract structures. This would need to be carefully calibrated to ensure that CfDs provide the necessary incentives at the least cost for consumers.
- Another option would be to not only envisage the use of CfDs for new generation but also to allow Member States to offer contracts on certain types of existing inframarginal generators (e.g., for specific types of technologies). These contracts could be awarded to existing generation, where possible, on the basis of competitive bidding.
- A more far-reaching approach would be to not only envisage the use of CfDs for new generation but also to allow Member States to impose these contracts on certain types of existing inframarginal generators (e.g., for specific types of technologies). Contrary to the situation for new generation, the contracts for these types of existing generators would typically not result from market-based tendering but would result from ex-post price regulation. Whilst this would accelerate the uptake of contracts for difference, it would also create significant uncertainty for investors in renewables. This could risk the necessary investments in this type of generation, increase the costs of those investments and as a result be counterproductive.

Driving Renewable Investments – Europe’s Way Out of the Crisis

Increasing renewable energy deployment as well as electrification in general, is critical for Europe’s security of supply, the affordability of energy and achieving climate neutrality by 2050. The accelerated deployment of renewables and energy efficiency measures will structurally reduce demand for fossil fuels in the power, heating and cooling, industry and transport sectors. Thanks to their low operational costs, renewables can lower energy prices across the EU. Furthermore, faster deployment of renewable energy will contribute to EU’s security of energy supply.

Any regulatory intervention in the electricity market design therefore needs to preserve and enhance the incentives for investments and provide investors with certainty and predictability, while addressing the economic and social concerns related to high energy prices.

Alternatives to Gas to Keep the Electricity System in Balance

The consultation also covers ways to improve the conditions under which flexibility solutions such as demand response, energy storage and other weather independent renewable and low carbon sources, compete in the markets. These include measures aimed at incentivising the development of such flexibility solutions in the market (such as adapting the tariff design of system operators to ensure that they fully consider all flexibility solutions and use the existing network as efficiently as possible, allowing for access to more detailed data from electricity consumers through the installation of submeters or developing products

to reduce demand or shift energy consumption in periods of high demand or prices) and targeted measures to improve the efficiency of the short-term markets, with particular focus on the intraday market (such as allowing trading across Member States closer to the delivery of electricity and further increasing the liquidity in this market). In addition, the consultation seeks input on how to safeguard security of supply and adequacy also in situations of unforeseen crisis to ensure timely investments in capacity.

Combined with renewable generation and enhanced investments in grid capacity and inter-connectivity, this should contribute to reducing the role that natural gas-fired generation plays as a flexible source of generation and will, over time, replace, and thereby, phase out natural gas-fired power generation in line with the EU's decarbonisation targets.

Lessons Learned from Short Term Market Interventions

During the crisis, a number of emergency and temporary market interventions have been introduced to mitigate the impact of high energy prices on consumers and companies. In the electricity market, the measure introduced at EU level is the so-called inframarginal cap, which softened the impact of high prices whilst requiring mandatory demand reduction.

The consultation seeks stakeholders' views on whether certain aspects of these emergency interventions could be turned into more structural features of the electricity market design, for example activated in future crisis situations, and if so, under what conditions.

Any such potential element of the reform would depend on the success of these measures in terms of limiting the impact of high electricity prices and on whether they can be introduced without harming the investment incentives required to achieve the decarbonisation of the power sector.

Better Consumer Empowerment and Protection

The energy crisis has exposed consumers across the internal market to higher energy costs – resulting in a real lowering of their standard of living. In some cases, customers face a choice between paying for their energy and buying other essential goods[1][2]. The crisis has also hit industry and service sectors increasing energy costs, particularly for energy intensive industry. This has given rise to cuts in production capacity, temporarily or permanent closures and lay-offs.

The Electricity Directive has not yet been fully implemented. Better implementation, and enforcement of consumer rights, would have helped mitigate the impact of the crisis for consumers. However, targeted improvements are also needed. This consultation covers different options for creating a buffer between consumers and short-term energy markets.

By giving consumers who want to actively participate in energy markets more opportunities to do so, including by sharing energy to control their costs[3]. We can also better use digitalisation tools to make it easier for consumers with renewable heating or electromobility to manage their costs through avoiding the most expensive times of the day to use grid electricity. Even without being active on the market consumers need to be able to access longer term contracts for electricity, notably based on renewable power purchase agreements between suppliers and renewable producers. This will allow them to manage their costs and support new investments in renewable energy.

The crisis has also shown that often consumers pick up the costs when suppliers fail. This could be mitigated by requiring suppliers to be adequately hedged, combined with an effective Supplier of Last Resort Regime to ensure continuity of supply.

Finally, in cases of crisis it may be worthwhile enabling Member States to guarantee households and SMEs access to a minimum necessary amount of electricity at an affordable price, as was done in the Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices.

Stronger Protection against Market Manipulation

Regulation 1227/2011 on wholesale market integrity and transparency (REMIT) ensures that consumers and other market participants can have confidence in the integrity of electricity and natural gas markets, that prices reflect a fair and competitive interplay between supply and demand, and that no profits can be drawn from market abuse. In times of very high price volatility, external actors' interference, reduced supplies, and new trading behaviours, there is a risk that entities engage in illegal wholesale trading practices. There is therefore a need to ensure that the REMIT framework is up to date and robust. Further improvements would increase transparency, monitoring capacities and ensure more effective investigation and enforcement of cross-border cases in the EU to support new electricity market design.

Next Steps

The aim of the present public consultation is to give the opportunity to all stakeholders and other interested parties to provide feedback on a series of policy objectives to be pursued by the reform proposal and possible concrete legislative and non-legislative measures resulting from them.

The Commission intends to present a proposal for amendments to the electricity market design in March 2023. The replies to the present consultation should be provided by 13 February 2023 at the latest.

[1] See European Pillar of Social Rights, principle 20, and also the upcoming first EU Report on Access to Essential Services.

[2] See notably the Eurobarometer on "Fairness perceptions of the green transition", 10 October 2022

[3] Examples include allowing families to share energy among the different members located in different parts of the country; farmers installing renewable generation on one part of their farm and using the energy in their main buildings even if located a distance away; municipalities and housing associations including off-site energy as part of social housing, directly addressing energy poverty. Electricity production and consumption would need to take place at the same time which can be ensured by the use of smart metering.

About you

* Language of my contribution

- Bulgarian
- Croatian
- Czech
- Danish
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- Dutch
- English
- Estonian
- Finnish
- French
- German
- Greek
- Hungarian
- Irish
- Italian
- Latvian
- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* I am giving my contribution as

- Academic/research institution
- Business association
- Company/business
- Consumer organisation
- EU citizen
- Environmental organisation
- Non-EU citizen
- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

* First name

Clément

* Surname

Reinvaldt

* Email (this won't be published)

clrd@ens.dk

* Scope

- International
- Local
- National
- Regional

* Level of governance

- Parliament
- Authority
- Agency

* Organisation name

255 character(s) maximum

Danish Ministry of Climate, Energy and Utilities

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

* Country of origin

Please add your country of origin, or that of your organisation.

This list does not represent the official position of the European institutions with regard to the legal status or policy of the entities mentioned. It is a harmonisation of often divergent lists and practices.

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- Anguilla
- Antarctica
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- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
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- Estonia
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- Fiji
- Finland
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- Georgia
- Germany
- Ghana
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- Malawi
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- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
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- Saint Martin
- Saint Pierre and Miquelon
- Saint Vincent and the Grenadines
- Samoa
- San Marino
- São Tomé and Príncipe
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- Singapore
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka
- Sudan
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- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
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- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
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- Mozambique
- Myanmar/Burma
- Namibia
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
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- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Türkiye
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
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| <input type="radio"/> Colombia | <input type="radio"/> Jersey | <input type="radio"/> Pitcairn Islands | <input type="radio"/> Uruguay |
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To which category of stakeholder do you belong?

- a) National or local administration
- b) National regulator
- c) Transmission System Operator
- d) Distribution System Operator
- e) Market operator
- f) Energy company with generation assets
- g) Independent energy supplier with no generation assets
- h) Company conducting business in the energy sector no included in f) or g)
- i) Industrial consumer and associations
- j) Energy community
-

- k) Academia or think tank
- l) Citizen or association of citizens
- m) Non-governmental organisations
- n) Other

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Please provide feedback only on the questions that are relevant for you. Questions can be left blank.

Making Electricity Bills Independent of Short-Term Markets

Subtopic: Power Purchase Agreements (PPAs)

The conclusion of PPAs between electricity generators and final customers (including large industrial customers, SMEs and suppliers), is a way of supporting long-term investment by providing both parties with certainty regarding the price level over a longer time horizon (typically, 5 to 20 years) compared to other alternatives. In particular, PPAs contribute to reduce the uncertainty of final customers concerning electricity prices and their exposure to price variations, allowing to make consumers' bills independent from the fluctuation of fossil fuels prices. However, as PPAs are contracts signed over a long period of time, they bear considerable risks and costs for smaller market participants. Hence, their accessibility is currently limited to a few large final customers (e.g. energy intensive undertakings), creating a risk that access to decarbonised generation is limited to a subset of consumers.

Whilst the uptake of renewable PPAs is growing year-on-year, the market share of projects marketed under renewable power purchase contracts covers still only 15-20% of the annual deployment. Furthermore, renewable PPAs are limited to certain Member States and large undertakings, such as energy intensive undertakings.

To address these barriers, Member States can consider ways of supporting the conclusion of PPAs in line with State Aid rules. The Commission has described in detail the additional measures that could help the development of renewable PPAs in the Commission Staff Working document accompanying the REPowerEU Communication[1]. This could be achieved, inter alia, by pooling demand in order to give access to smaller final customers, by providing State guarantees in line with the State Aid Guarantee Notice [2] and by supporting the harmonization of contracts in order to aggregate a larger volume of demand and enable cross-border contracts.

[1] Commission Staff Working Document Guidance to Member States on good practices to speed up permit-granting procedures for renewable energy projects and on facilitating Power Purchase Agreements Accompanying the document Commission Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements SWD/2022/0149 final

[2] <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52008XC0620%2802%29>

Do you consider the use of PPAs as an efficient way to mitigate the impact of short-term markets on the price of electricity paid by the consumer, including industrial consumers?

- Yes
- No

Please describe the barriers that currently prevent the conclusion of PPAs.

2000 character(s) maximum

We are not convinced that it is efficient to mitigate the impact of short-term markets via a selection of different tools such as PPAs, CfDs and forward markets instead of focusing the effort and pooling the liquidity in one market to make it more efficient at mitigating the impact of short-term markets on the price paid by consumers. It depends on what extra benefit PPAs deliver that CfDs and forward markets do not and at what expense? We are of the understanding that renewables do not need more than 5-10 year fixed contracts to make a business case – such a time period is close to financial traded standard products in electricity derivatives on central counterparties such as Nasdaq or EEX.

Likewise, measures for mitigating and protecting consumers should not be done through a variety of different

tools that at best deliver less efficient solutions and at worst counteract one another. Focus on the market side should therefore be on delivering one strong instrument that efficiently mitigates the short-term market impact on consumers, one example could potentially be a consumer right to a fixed price agreement. The more traction/liquidity an instrument attracts, the more efficient it becomes. It would therefore be harder to achieve an efficient solution if the interplay of different solutions is not properly assessed. These complex interactions between possible options is but one reason why an in-depth impact assessment needs to be carried out.

The main barriers to the conclusion of physical PPAs is that they are unsuited as a hedging instrument for the majority of consumers. Financial PPAs can already be concluded today. The major barrier for financial PPAs might be lack of transparency of the market as all transactions have to occur on bilateral basis. It might be worthwhile establishing exchange traded reference projects like profiled forward contracts that are based on regional or national average production profiles.

Do you consider that the following measures would be effective in strengthening the roll-out of PPAs?

at most 6 choice(s)

- a) Pooling demand in order to give access to smaller final customers
- b) Providing insurance against risk(s) either market driven or through publicly supported guarantees schemes (please identify such risks)
- c) Promoting State-supported schemes that can be combined with PPAs
- d) Supporting the standardisation of contracts
- e) Requiring suppliers to procure a predefined share of their consumers' energy through PPAs
- f) Facilitating cross-border PPAs

In addition to the measures proposed in the question above, do you see other ways in which the use of PPA for new private investments can be strengthened via a revision of the current electricity market framework?

- Yes
- No

If yes, please explain which rules should be revised and the reasons.

2000 character(s) maximum

It is crucial to increase liquidity in the forward markets e.g. through coupling the forward markets across borders to a greater extent. We find ACER's perspectives in last year's position paper very helpful in that regard. Furthermore, a reform of the forward capacity allocation (FCA) guideline as currently investigated at ACER could also be helpful.

Moreover, a requirement for a 'market maker' on the forward markets could be explored.

We do not in general consider PPAs as an efficient instrument. It is important to distinguish between different types of PPAs. In particular, physical PPAs and financial PPAs. Physical PPAs (sleeved PPAs?) are meant

to emulate a direct transfer of electricity from producer to consumer by using a virtual direct line. In this case, a consumers' possibility to buy directly depends on a specific producer's ability to generate electricity in a certain point in time. Such contracts lead to adverse incentives in the form of non-system-friendly behaviour.

We would like to develop on the 6 provided options to strengthen the roll-out of PPAs in the previous question:

- a) Demand is already pooled by electricity suppliers that can freely purchase PPAs. Forcing consumers or suppliers into PPAs risks removing the EU retail market or introducing large risks to suppliers, respectively.
- b) A general scheme seems inefficient, as any project including those that do not need it would be covered by such guarantees. If certain projects require support to be able to enter the market, the level of support should be determined in a competitive process and not by grandfathering a bank guarantee.
- c) Many support schemes already allow the sale of volumes into the market. Market participants should easily be able to conclude PPAs instead of selling into the spot market. The only barrier to remove may be to generally ensure that GoOs are issued under those schemes as well.

(continuing under next question)

Do you see a possibility to provide stronger incentives to existing generators to enter into PPAs for a share of their capacity?

- Yes
- No

If yes, under which conditions? What would be the benefits and challenges?

2000 character(s) maximum

If, for instance, consumers were granted a right to fixed price contracts of a longer duration in parallel to their existing right to dynamic price contracts, this could provide additional incentive for suppliers to enter into long-term agreements in the form of PPAs or standard forward transactions.

Such a provision would maintain a choice for consumers as it is foreseen in the current electricity directive; it should result in higher liquidity for long-term transactions; and it creates transparency on the cost of fixed price agreements that represents an insurance to consumers – the more liquidity that can be established, the smaller the insurance price will be.

Continuing on the 6 provided options to strengthen the roll-out of PPAs two questions earlier:

- d) Standardisation in financial forwards e.g. through a central counterparty based on reference volumes could be a good idea. Otherwise, it seems difficult to standardise PPA's as they often are based on individual unit's production. The GoO system already provides a standardised mechanism to transfer green electricity and could be further developed.
- e) This would introduce substantial risks to suppliers as it will be difficult to match consumer base with PPAs. A preferable option would be to establish an obligation for hedging by using the financial markets. If a right to fixed price agreements is pursued, this could be an even better solution in terms of hedging requirements, forcing suppliers to hedge a corresponding amount.
- f) Crossborder PPAs can be problematic in a zonal market based on market coupling. Any contract that directly ties together a certain producer with a consumer creates inefficiencies, as this does not correspond to the physical reality of the system - even worse if producers and consumers are located in different

countries leading to flows from high price to low price to low price areas. We prefer a solution based on coupled forward markets – PPAs should not inhibit this.

Do you consider that stronger obligations on suppliers and/or large final customers, including the industrial ones, to hedge their portfolio using long term contracts can contribute to a better uptake of PPAs?

- Yes
 No

Do you consider that increasing the uptake of PPAs would entail risks as regards

	Yes	No
(a) Liquidity in short-term markets	<input checked="" type="radio"/>	<input type="radio"/>
(b) Level playing field between undertakings of different sizes	<input checked="" type="radio"/>	<input type="radio"/>
(c) Level playing field between undertakings located in different Member States	<input checked="" type="radio"/>	<input type="radio"/>
(d) Increased electricity generation based on fossil fuels	<input type="radio"/>	<input checked="" type="radio"/>
(e) Increased costs for consumers	<input checked="" type="radio"/>	<input type="radio"/>

If yes, how can these risks be mitigated?

2000 character(s) maximum

If for instance a right to fixed price contracts is pursued, it introduces an obligation for suppliers to offer such agreements. This could be a sufficient incentive to use long-term agreements for hedging.

The liquidity in short-term markets will be maintained if PPAs are required to be financial and not physical. As physical PPAs introduce an incentive to “produce-and-forget”, which drains liquidity from the day-ahead, intraday and balancing markets and further can work against the system imbalance needs. Pure financial PPAs on the other hand do not interfere with the physical dispatch of the production unit but may drain liquidity from the forward markets as a demand and supply for hedging is satisfied through the PPA.

Please explain

2000 character(s) maximum

Subtopic: Forward Markets

Organised forward markets are a useful tool for suppliers and large consumers such as energy intensive undertakings to protect themselves against the risk of future increases in electricity prices and to decouple their energy bills from fluctuations of fossil fuel prices in the medium to long-term. However, it has been argued that liquidity in many organised forward markets across the EU is insufficient and that the time horizon for such hedging seems too short (usually up to one year). One possibility to increase the liquidity

in forward markets would be to establish virtual trading hubs for forward contracts, as already exist in certain regions.

Such hubs would need to be complemented with liquid and accessible transmission rights to hedge the remaining risk between the hub and each zone.

While hedging up to approximately three years could be improved with better organization of the market, additional measures might be needed to incentivise forward hedging beyond this timeframe (see for example the section above on PPAs).

Do you consider forward hedging as an efficient way to mitigate exposure to short-term volatility for consumers and to support investment in new capacity?

- Yes
- No

Do you consider that the liquidity in forward markets is currently sufficient to meet this objective?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

We consider strengthening existing forward markets in line with last year's ACER policy paper to be recommendable. Therefore, we consider it to be counter-productive if other types of long-term agreements like PPAs become mandatory. It is also generally important that PPAs are financially settled and not based on physical delivery to ensure system-friendly incentives.

If, for instance, a right to enter into fixed price contracts of a certain duration is pursued, it could increase liquidity in forward markets by introducing an obligation onto suppliers to offer those contracts. For suppliers to be able to hedge their risk efficiently they would have to enter into agreements via the forward market or PPAs.

In your view, what prevents participants from entering into forward contracts?

2000 character(s) maximum

The coupling of forward markets as suggested by ACER might be a way forward. Creating larger trading hubs might also be useful. One of the challenges in the forward markets seems to be the relatively high geographic resolution of the physical markets. The liquidity of financial markets is better in larger zones like e.g. Germany. It should therefore be considered how to handle this dilemma between short-term and long-term efficiency by instruments such as market coupling or trading hubs.

In your view, would requiring electricity suppliers to hedge for a share of their supply be beneficial for consumers and for retail competition?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

The need of suppliers to hedge their portfolio depends largely on the agreements their customers want to enter into. If all consumers of a certain supplier want dynamic prices, it would be unnecessarily costly to ask the supplier to hedge a certain share of their supply. If, for instance, consumers get the right to enter into a fixed price agreement, i.e. suppliers are required to offer fixed prices of longer duration to consumers that are binding for the supplier, this creates an implicit incentive for the supplier to enter into forward agreements in the wholesale markets.

Further, we find it difficult to envision the concrete enforcement and monitoring of a requirement on suppliers to hedge parts of their supply. In our view, such requirements could lead to even higher price premiums on e.g. a fixed price agreement – we need the consumer protection instruments to be as efficient as possible. We do acknowledge that if suppliers are not required to hedge parts of their supply, a consumer right to enter into a fixed price agreement would still entail a risk of supplier bankruptcy. If supplier bankruptcy is considered a substantial risk, it might become necessary to take a closer look into the regulation of supplier of last resort. We are aware that some Member States have had bankruptcy issues with their suppliers, where requirements on the supplier to hedge parts of their supply could have made sense. In that context, a voluntary implementation on a Member State basis for a requirement on suppliers to hedge parts of their supply might be a way forward in those Member States where this would be relevant.

Do you consider that the creation of virtual hubs for forward contracts complemented with liquid transmission rights would improve liquidity in forward markets?

- Yes
- No

If yes, do you consider that such virtual hub(s) should be developed at national, regional or EU level?

- National level
- Regional level
- EU level

Do you have additional comments?

2000 character(s) maximum

It seems recommendable to develop them at regional level. In order to ensure swift implementation, though, the European Commission or ACER could be considered to get a role in resolving conflicts. However, the exact level for the development is less important than it is to figure out the optimal mix between pooling liquidity through a wider geographic coverage as compared to having a relevant price correlation between the virtual hub and underlying physical markets. Ultimately, it will be important that a virtual hub price is considered useful by market participants and helpful in long-term hedging of production and consumption.

Do you have experience with the existing virtual hubs in the Nordic countries?

- Yes
- No

In case you have experience with the existing virtual hubs in the Nordic countries, how do you rate this experience?

7

Do you have additional comments related to the existing virtual hubs in the Nordic countries?

2000 character(s) maximum

The Nordic countries have had a positive experience with a system price as reference at Nord Pool level. It offers a useful benchmark/proxy for hedging assets across the region. It does however require a certain capability of market participants to manage the remaining price risk. In the Nordic market, this is possible by the use of price differential contracts, but for many zones the liquidity of those contracts is low. Larger market participants, however, are able to hedge their long-term price risk in a sufficiently accurate way by the use of the system price forwards.

In your view, what would be the possible ways of supporting the development of forward markets that could be implemented through changes of the electricity market framework?

3000 character(s) maximum

It will be key, on the one hand, to ensure that consumption is present in the forward market, and on the other hand, that liquidity in the market is not reduced substantially by the use of alternative instruments like direct PPAs between producers and consumers. Rather, it should be considered how liquidity from products such as financial CfDs and PPAs may be channelled into the forward markets to further increase liquidity. This could, e.g., be achieved by the introduction of new standardised hedging products that are tailored to the needs of renewable energy producers. A market making requirement in order to ensure that market participants always find counterparties could also be considered. On the consumption side, if, for instance, a consumer right to fixed price agreements is pursued, this could contribute to increased liquidity.

These complex interactions between different instruments highlight the importance of a thorough impact assessment before introducing significant regulatory changes.

Subtopic: Contracts for Difference (CfDs)

Two-way CfDs and similar arrangements have been used in some Member States to support publicly financed investments in new inframarginal generation (in particular, renewables) to cater for situations where the necessary investments are not made on a market basis. Similarly to PPAs, they ensure a greater

certainty to investors and consumers, and they cater for situations where the necessary investments require public support.

Public support for new inframarginal generation granted in the form of two-way CfDs could ensure that the beneficiaries receive a certain minimum level of remuneration for the electricity produced, while preventing disproportionate revenues. Typically, the beneficiary receives a guaranteed payment equal to the difference between a fixed 'strike' price and a reference price and the revenues above the strike price need to be returned to the CfD counterpart (i.e. Member State).

At the same time, two-way CfDs require the generation supported by the CfDs to pay back the difference between the market reference price and a maximum strike price whenever the reference price exceeds the strike price. If these paybacks are then channelled back to the consumers, suppliers or taxpayers, two-way CfDs also provide them with some protection against excessive prices and volatility, if they are passed on proportionally and objectively.

As it may be difficult for regulators to estimate the actual investment costs, the possibility to determine the remuneration of supported generators through a competitive bidding process is an important instrument to avoid long-lasting excessive costs.

Do you consider the use of two-way contracts for difference or similar arrangements as an efficient way to mitigate the impact of short-term markets on the price of electricity and to support investments in new capacity (where investments are not forthcoming on a market basis)?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

As long as e.g. renewable energy capacity established with a CfD (as public support to power producers) is inframarginal, the CfD does not mitigate the effect of short-term markets in the price (see below). CfDs should therefore not in itself be considered as an effective tool to mitigate the impact of short-term markets on the price of electricity for final consumers.

As far as supporting investments in new capacity, promoting market-based deployment of renewable energy should be a first priority. To the extent that public support is required, governments can use CfDs for producers of new capacity, but governments should also consider alternatives. CfDs are not necessarily in general the best/efficient way to support new capacity. In Denmark, for instance, it is likely that power producers will establish new offshore capacity in combination with Power-to-X (PtX). This combination raises at least two set of issues for CfDs. The first is whether PtX-products can be regarded as CO₂-neutral if the power production receives public support. The second issue is to design CfDs that do not to distort the efficient allocation of the power production between PtX and the grid. With PtX production and a CfD contract, the power producer may choose to use the power for PtX when the spot price is high, rather than to supply the collective grid. With a contract that preserves market incentives, the producer would sell to the market, when the spot price is high. Hence, compared to such a contract, a CfD could risk increasing market prices.

Further, it is likely that power producers can establish new offshore capacity without public support (contrary

to the presumption in the question). Governments can in principle use CfDs as a mechanism for the power producer to pay for the right to use an offshore area - and hence to decide a tender - but it might not be the most appropriate mechanism. It should thus be left to Member States how best to support investments into RE.

Should new publicly financed investments in inframarginal electricity generation be supported by way of two-way contracts for differences or similar arrangements, as a means to mitigate electricity price spikes of consumers while ensuring a minimum revenue?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

See the response to the previous question above. CfDs are not an appropriate tool to mitigate electricity price spikes for consumers. Until now, CfDs have been physical contracts between authorities and electricity producers, and have not been directly related to consumer prices. In periods with high prices, the revenue from a two-way CfD could in principle be channelled back to consumers to reduce consumer prices. However, it is difficult to find an appropriate way to channel back the revenue. The authorities could possibly sell off the obtained CfD to commercial parties on a standard forward contract in the forward markets in order to increase liquidity and facilitate consumer protecting through the forward market (see below).

What power generation technologies should be subject to two-way contracts for difference or similar arrangements?

2000 character(s) maximum

No power generation technologies should be subject to obligatory CfDs.

Provided CfDs continue to be voluntary, some technologies could appear more suitable to CfDs than others. A CfD removes the effect of the volatility of the electricity price on the profit of the power producer. In that sense, two-sided CfDs appear less suitable for dispatchable technologies, which may profit from price volatility. Hence, CfDs (and other fixed price arrangements) are relatively more useful for less-dispatchable compared to dispatchable technologies.

It is generally important to evaluate alternative ways to support power generation (and whether support is needed in the first place). Hence, no technology should be subject to obligatory CfDs.

Why should those technologies be subject to two-way contracts for differences or similar arrangements?

2000 character(s) maximum

What technologies should be excluded and why?

2000 character(s) maximum

What are the main risks of requiring new publicly supported inframarginal capacity to be procured on the basis of two-way contracts for difference or similar arrangements, for example as regards of the impact in the short-term markets, competition between different technologies, or the development of market based PPAs?

2000 character(s) maximum

As far as supporting investments in new capacity, promoting market-based deployment of renewable energy should be a first priority. Where public support is required, governments can use CfDs for new capacity, but governments should also consider alternatives. CfDs are not necessarily in general the best/efficient way to support new capacity. A physical CfD is a “produce-and-forget” contract with no incentive for the producer to react on the market price. A wind turbine may e.g. be repaired in periods with high prices.

In DK, it is also likely that power producers will establish new offshore capacity in combination with Power-to-X (PtX). This combination raises at least two issues for CfDs. The first is whether PtX-products are CO₂-neutral if the power production receives public support. The second issue is to design CfDs that do not distort efficient allocation of electricity between PtX and the grid. With PtX production and a CfD contract, the producer may use the power for PtX when the spot price is high, rather than supply the collective grid. With a contract that preserves market incentives, the producer would sell to the market when the spot price is high. Hence, compared to such a contract, a CfD could increase market prices.

Further, it is likely that power producers can establish new offshore capacity without public support (contrary to the presumption in the question). Governments can use CfDs as a mechanism for the power producer to pay for the right to use an offshore area - and hence to decide a tender - but it might not be the most appropriate way. It should be left open to Member States how best to support investments into RE.

To some extent, CfDs and PPAs are mutually exclusive because they both are fixed price agreements. It would appear more appropriate to focus on ensuring liquid forward markets instead of focusing on a selection of instruments such as PPAs or CfDs, which instead risk draining the forward markets of much needed liquidity

What design principles could help mitigate the risks identified in your reply to the question above, in particular, in terms of procurement principles and pay out design? Should these principles depend on the technology procured?

2000 character(s) maximum

Governments could use financial CfDs rather than traditional (physical) CfDs. This can solve the problems caused by lack of incentives to react to prices mentioned above, but expose the producer to more risk. It is possible that designs that mix the characteristics of financial and traditional CfDs can be developed. A design that mixes characteristics of traditional CfD and a fixed feed-in premium (i.e. a fixed per unit subsidy) could also mitigate the risks. The latest Danish tender for off shore capacity had such a mix. Either way, CfDs should remain one voluntary instrument among many others.

How can it be ensured that any costs or pay-out generated by two-way CfDs in high-price periods are channelled back to electricity consumers? Should a default approach apply, for example, should these revenues or costs be allocated to consumers proportionally to their electricity consumption?

2000 character(s) maximum

Revenues should be channelled to electricity consumers in a way that does not diminish incentives to save energy, invest in energy efficiency or respond to price signals in a flexible way. There are various ways of achieving these objectives. A default approach does therefore not necessarily seem appropriate, provided these objectives are ensured, given also different national circumstances.

It could be considered to introduce financial CfDs where the Member State – after having successfully chosen a producer for the production tender – in a new public tender sells off its obtained CfD to commercial parties on a standard forward contract in the forward markets through a central counterparty such as Nasdaq or EEX to increase forward market liquidity further.

What should be the duration of a two-way CfD for new generation and why? Should this differ depending on the technology type?

2000 character(s) maximum

Hitherto, states have used physical CfDs with a long duration to reduce the risk of power producers. As mentioned above, physical CfDs might not be an efficient way to promote further new capacity.

Should generation be free to earn full market revenues after the CfD expires, or should new generation be subject to a lifetime pay-out obligation?

2000 character(s) maximum

The power producer should earn full market revenue should after expiration. For example, exposure to the market price will give the correct signals for the producer to repair the production capacity.

Without prejudice to Article 6 of Directive (EU)2018/2001[1], should it be possible for Member States to impose two-way CfDs by regulatory means on existing generation capacity?

[1]

Article 6 (1): Without prejudice to adaptations necessary to comply with Articles 107 and 108 TFEU, Member States shall ensure that the level of, and the conditions attached to, the support granted to renewable energy projects are not revised in a way that negatively affects the rights conferred thereunder and undermines the economic viability of projects that already benefit from support.

Article 6(2): Member States may adjust the level of support in accordance with objective criteria, provided that such criteria are established in the original design of the support scheme.

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

Retroactive regulation of this type will most certainly deter producers in future tenders and should not be pursued. Retroactive regulation creates risk of breach of contract, questions of expropriation and a risk that member states have to design the imposed CfDs with a high strike price to avoid legal conflict. Retroactive regulation of this kind generally risks undermining the confidence in, and stability of, the EU electricity market design, which can be counterproductive in terms of ensuring sufficient investments in new renewable energy capacity to achieve the EU's ambitious climate targets.

How would you rate the following potential risks as regards the imposition of regulated CfDs on existing generation capacity?

	Negligible risks	Low risks	Medium risks	High risks	Very high risks
Legitimate expectations/legal risks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Ability of national regulators/governments to accurately define the level of the price levels envisaged in these contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Locking in existing capacity at excessively high price levels determined by the current crisis situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Impact on the efficient short-term dispatch	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you address those potential risks as regards the imposition of contracts for difference on existing generation capacity?

2000 character(s) maximum

First of all, retroactive regulation should be avoided.

To avoid legal risk, an imposed CfD should be designed with a high price. This makes the lock-in price high. A low price, on the other hand, makes the legal risks high. Both risks cannot be avoided.

Would it be enough for existing generation to be subject only to a simple revenue ceiling instead of a revenue guarantee?

- Yes
- No

What are the relative merits of PPAs, CfDs and forward hedging to mitigate exposure to short-term volatility for consumers, to support investment in new capacity and to allow customers to access electricity from renewable energy at a price reflecting long run cost?

It may be inefficient to mitigate the impact of price volatility on short-term markets on consumers/producers via a selection of different tools such as PPAs, CfDs and forward markets instead of focusing efforts and pooling liquidity in one market. It depends on what extra benefit PPAs deliver that CfDs and forward markets do not and at what expense. We are of the understanding that renewables do not need more than 5-10 year fixed contracts to make a business case – such a time period is close to financial traded standard products in electricity derivatives on central counterparties such as Nasdaq or EEX.

Similarly, measures to protect consumers should not ideally be done through different tools that at best deliver less efficient solutions and at worst counteract one another. The focus on the market side should be on delivering a strong instrument that efficiently mitigates the short-term market impact on consumers. One example could potentially be a consumer right to a fixed price agreement. The more traction/liquidity an instrument attracts, the more efficient it becomes. It would therefore be harder to achieve an efficient solution if the interplay of different solutions is not properly assessed. Promoting bilateral PPAs and CfDs could drain liquidity from the forward markets, in turn increasing the premium consumers can expect to pay for a fixed price agreement. These complex interactions between possible options underscore why an in-depth impact assessment is needed.

The main barriers to the conclusion of physical PPAs is that they are unsuited as a hedging instrument for the majority of consumers. The major barrier for financial PPAs might be lack of market transparency as transactions have to occur on a bilateral basis. Exchange traded reference projects like profiled forward contracts based on regional or national average production profiles could help.

Subtopic: Accelerating the deployment of renewables

The shortage in gas and electricity supply as well as the relatively inelastic energy demand have led to significant increases in prices and volatility of gas and electricity prices in the EU. As stated above, a faster deployment of renewables constitutes the most sustainable way of addressing the current energy crisis and of structurally reducing the demand for fossil fuels for electricity generation and for direct consumption through electrification and energy system integration. Thanks to their low operational costs, renewables can positively impact electricity prices across the EU and reduce direct consumption of fossil fuels.

Through the REPowerEU plan, the European Commission has put forward a range of initiatives to support the accelerated deployment of renewable energy and to advance energy system integration. These include the proposal to increase the renewable energy target by 2030 to 45% in the Renewable Energy Directive, legislative changes to accelerate and simplify permitting for renewable energy projects or the obligation to install solar energy in buildings.

These efforts should be accompanied by appropriate regulatory and administrative action at national level and by the implementation and enforcement of the current EU legislation.

Within the framework of the Electricity Market legislation, accelerating the deployment and facilitating the uptake of renewables is one of the guiding principles of the Clean Energy Package and of this consultation paper. For example, a transmission access guarantee could be envisaged to secure market access for offshore renewable energy assets interconnected via hybrid projects, where the relevant TSO(s) would compensate the renewable operator for any hours in which the actions of the TSO led to not enough transmission capacity being accessible to the offshore wind farm to offer their export capabilities to the

electricity markets[1].

Also, removing the barriers for the uptake of renewable PPAs or generalising two-way CfDs, enhancing consumer empowerment and protection, and increasing demand response, flexibility and storage should contribute to the accelerated deployment of renewables.

[1] See the recommendations of the Study “Support on the use of congestion revenues for Offshore Renewable Energy Projects connected to more than one market” https://energy.ec.europa.eu/system/files/2022-09/Congestion%20offshore%20BZ.ENGIE%20Impact.FinalReport_topublish.pdf

Do you consider that a transmission access guarantee could be appropriate to support offshore renewables?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

In some Member States, financing transmission access guarantee (TAG) through congestion income could create the correct socioeconomic incentive for the TSOs to consider congestion management and net investment decisions. Therefore, regulation should allow for Member States flexibility to apply TAG, though mandatory application requires further impact assessment.

Congestion income must not be used multiple times so other congestion income usages on the relevant interconnectors must be cancelled such as long-term transmission rights. There could be a challenge in figuring out which TSO is responsible for the lower interconnector capacity availability when the flow based capacity allocation method is implemented, as it would not be obvious which critical net element is the cause of the lower availability.

TAG should also take into account that overplanting production capacity with regards to interconnector capacity is one way of utilizing the infrastructure more efficiently. However, in that regard TAG should only compensate the potential production that could have been exported and not potential production for which the interconnector did not in any case have the capacity to transport.

It should be made clear how TAG would distribute compensation between two or more market participants also in the case where both have overplanted production capacity.

The term “offshore bidding zone” (OBZ) brings forth new regulation with a potential TAG and it is also used in the delegated act “Renewable Fuels of Non-Biological Origin” (RFNBO), however, we do not have a clear notion of the OBZ definition. How does an OBZ defer from an ordinary onshore bidding zone and what justifies new regulation? Should an OBZ be defined according to how much installed production capacity is exported out of the bidding zone? If that is the case more Power-to-X installed over time could phase out the OBZ regulation for the specific bidding zone – which is also the case for the TAG.

Do you see any other short-term measures to accelerate the deployment of renewables?

	Yes	No
At national regulatory or administrative level	<input type="radio"/>	<input type="radio"/>
In the implementation of the current EU legislation, including by developing network codes and guidelines	<input type="radio"/>	<input type="radio"/>
Via changes to the current electricity market design	<input type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>

If yes, please specify

2000 character(s) maximum

It should be underlined that possible new measures should be consistent with undergoing negotiations and the following implementation on the existing proposals regarding deployment of renewables: The EU's Renewable Energy Directive (REDIII) from June 2021, the adjustments to RED related to the Commission's RePower Plan from May 2022 (focusing on an acceleration of permitting processes) and the temporary emergency regulation on accelerating the deployment of renewable energy from November 2022.

How should the necessary investments in network infrastructure be ensured? Are changes to the current network tariffs or other regulatory instruments necessary to further ensure that the grid expansion required will take place?

4000 character(s) maximum

DSO network development plans are useful for ensuring cost effective and necessary net planning and help create transparency for different actors to better coordinate and plan the development of renewable energy investments, EV charging infrastructure etc. These plans can become a platform for information and dialogue that can ensure input to investment decisions on grid expansion between network owners and network users. Initiatives that contribute to more transparency about the grid can generally be supported, e.g. a mapping of the capacity of the grid system in the EU could be helpful. Furthermore, digitalisation is seen as a driver for more dynamic network development plans and grid mapping, increasing the effective use of such instruments by market actors. However, the cost-effectiveness of the above will vary for large and small DSOs which should continue to be taken into account.

The framework for network tariff design and TSOs' and DSOs' possibilities for developing new tariff solutions to solve challenges related to grid expansion generally works well, but lacks clarity in how tariffs relate to other grid-based incentives to consumers and producers, e.g. interruptible connection agreements or flexibility services. Several changes have recently been made to the tariff design in Denmark (e.g. introduction of time and geographical differentiation). Tariffs are, however, still primarily seen as instruments to remunerate network operators. Market actors that provide flexibility to the grid can oftentimes not be sufficiently compensated within the tariff regime. Denmark is thus looking into new concepts such as collective tariffs that allow for a local group of customers and producers to be subject to a tariff payment based on the sum of individual meters. It might also be relevant to revisit regulation 838/2010 on a common regulatory approach to transmission charging that sets a rather rigid range on the tariff on producers. If e.g. a generator supports the grid, it is not possible, based on the regulation, to pay out a remuneration, as the

lower bound of the tariff zero. Market actors have also requested that procedures to implement new tariff solutions be sped up and made more transparent. Danish authorities are looking into how this can be achieved nationally.

There is a need to speed up and increase investments in renewables which in turn requires timely investments in the grid. In this context it could be relevant to explore the extent to which the current framework for tariffs includes barrier towards a more proactive grid investment policy aiming at early grid expansion ahead of concrete renewables' connection applications.

A continued focus on the use of alternative instruments to grid development is needed, including the promotion of co-location of production and consumption. Direct lines, as regulated in the electricity directive, can be an instrument to promote co-location, provided that on balance, they provide socio-economic advantages and are not used to circumvent the basic principle of open third-party access to transmission and distribution systems, which is one of the essential features of the internal market in electricity. Direct lines as defined in the electricity directive was conceived in the context of the 1st liberalisation package, which is reflected in the definition of what constitutes a direct line. Today it is difficult to interpret in the context of the green transition. The concept would benefit from increased transparency, notably concerning the definition of what constitutes a direct line and the boundaries for its use, including its demarcation to the concepts of distribution and transmission. In general, increased clarity on the role of distribution and transmission of electricity via the public grid and its interaction with the concepts of self-generation /consumption as promoted in the recast renewable energy directive would contribute to a more consistent and solid framework

Subtopic: Limiting revenues of inframarginal generators

During the current energy crisis, temporary emergency measures have been put in place under Council Regulation 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices. One of these measures is the so-called inframarginal revenue cap which limits the realised revenues of inframarginal generators to a maximum of 180 Euros per MWh. The aim of introducing this inframarginal cap was to limit the impact of the natural gas prices on the revenues of all inframarginal generators (new and existing) and to generate revenues allowing Member States to mitigate the impact of high electricity prices on consumers.

The question to be addressed in the context of the reform of the electricity market rules is whether, in addition to relying on long-term pricing mechanisms such as forward markets, CfDs and PPAs, such revenue limitations for inframarginal generators should be maintained.

Do you consider that some form of revenue limitation of inframarginal generators should be maintained?

- Yes
- No

How do you rate a possible prolongation of the inframarginal revenue cap according to the following criteria:

(a) the effectiveness of the measure in terms of mitigating electricity price impacts for consumers

4

(b) its impact on decarbonisation

1

(c) security of supply

3

(d) investment signals

1

(e) legitimate expectations/legal risks

3

(f) fossil fuel consumption

3

(g) cross border trade intra and extra EU

1

(h) distortion of competition in the markets

1

(i) implementation challenges

1

Do you have additional comments?

3000 character(s) maximum

A revenue cap as seen with the emergency regulation or variations thereof should not be prolonged nor become a structural part of the electricity market. The priority of the electricity market should be to allocate resources efficiently by ensuring cost-effective operation in the short term. In the long term, the market objective should be to incentivise investments into the required technologies needed to deliver on the EU's ambitious climate objectives at least cost. A revenue cap seeks to provide a distributional role to the electricity market, which is inappropriate and inefficient. Distributional challenges are best handled outside of the market structure, for instance through social policies. While a temporary revenue cap could be justified to match a correspondingly temporary supply crisis, it should not become a structural part of the electricity market. Not only are distributional issues best handled outside of the market, but a long-term revenue cap

also brings a host of different risks, as outlined above, including weakening investment signals at a time when they are perhaps most needed to decarbonise the energy system.

Should the modalities of such revenue limitation be open to Member States or be introduced in a uniform manner across the EU?

- Member States
- EU

Do you have additional comments?

2000 character(s) maximum

How can it be ensured that any revenues from such limitations on inframarginal revenues are channelled back to electricity consumers? Should a default approach apply, for example, should these revenues be allocated to consumers proportionally to their electricity consumption?

3000 character(s) maximum

Revenues should be channelled to electricity consumers in a way that does not diminish incentives to save energy, invest in energy efficiency or respond to price signals in a flexible way. There are various ways of achieving these objectives. A default approach does therefore not seem appropriate, provided these objectives are ensured, given also different national circumstances.

Alternatives to Gas to Keep the Electricity System in Balance

Short-term markets enable trading electricity close to the time of delivery, covering day-ahead, intraday and balancing timeframes. Well-functioning short-term electricity markets guarantee that the different assets are used in the most efficient manner – this is key to deliver the lowest possible electricity prices to consumers. Short-term markets should therefore deliver relevant price signals reflecting locational, time-related and scarcity aspects: this will ensure the adequate reaction of generation and demand. Even if an increasing share of generation were covered by long term contracts such as PPAs or CfDs (cf. the sections above), the short-term markets would remain key to ensure efficient dispatch. The short-term markets also ensure efficient exchanges of electricity across borders.

Well-functioning short-term markets require healthy competition between market participants so that they are incentivised to bid at their true cost and regulators have the necessary tools to detect any kind of abusive or manipulative behaviour. Demand response, storage and other sources of flexibility must be put in a situation where they can compete effectively so that the role of natural gas in the short-term market to provide flexibility is progressively reduced, which will bring multiple benefits including lower electricity prices

for consumers. To ensure this, targeted changes to the functioning of short-term markets could be envisaged, which could include:

Incentivising the development of flexibility assets

The Commission together with ACER has started the work on new rules to further support the development of demand response, including rules on aggregation, energy storage and demand curtailment, and address remaining regulatory barriers.

Adapt incentives in the System operators tariff design: The Electricity Regulation and Directive already give the possibility for system operators to procure flexibility services including demand response. However, in most Member States, the current regulatory framework treats capital expenditures (CAPEX) of system operators different from operational expenditures (OPEX), resulting in a bias in detriment of investments by system operators concerning the operation of their network. An alternative to this approach is a regulatory framework based on overall total expenditure (TOTEX), including capital expenditures and operational expenditures, which would allow the system operators to choose between operational expenditures and capital expenditures, or an efficient mix of both, to operate their system efficiently without bias for a certain type of expenditure. This would incentivise system operators to procure further flexibility services, and in particular demand response, which should be a key enabler for greater renewable integration.

Using sub-meter data for settlement and observability: The deployment of smart meters as envisaged in the Electricity Directive is delayed in several Member States. In addition, smart meters do not always provide the level of granularity required for demand response and energy storage. In these situations, it should thus be possible for system operators to use sub-meter data (incl. from private sub-meters) for settlement and observability processes of demand response and energy storage, to facilitate active participation in electricity markets (see also section “*Adapting metering to facilitate demand response from flexible appliances*” in the section on “**Better consumer empowerment and protection**”). The use of sub-meter data should be accompanied by requirements for the sub-meter data validation process to check and ensure the quality of the sub-meter data. Access to dynamic data of electricity consumed (and injected back to the grid) notably from renewable energy sources helps increasing awareness amongst the consumers and allows shifting demand towards renewable electricity.

Developing new products to foster demand reduction and shift energy at peak times: To foster demand reduction and energy shifting (through demand response, storage and other flexibility solutions) at peak times, a peak shaving product could be defined and considered as an ancillary service that could be bought by system operators. Such a product could be auctioned a few weeks/months ahead (with a capacity payment) and activated at peak load (with an energy payment), considering renewables generation, therefore contributing to phasing out gas plants from the merit order, and contributing to lowering the price. Demand reduced could also be shifted to another point in time, outside of peak times. This would incentivize flexibility when fossil fuel capacity is needed the most in the system. It would be important to ensure such a product is cost effective if implemented over the long term.

Coordinating demand response in periods of crisis: In periods of crisis, it would also be possible to combine the limitations of inframarginal revenues described in the section above with market-based coordinated demand response (reduction and/or shifting) in times of peak prices or peak load. The aim would be to reduce the market clearing price and fossil fuel consumption.

Improving the efficiency of intraday markets

Shifting the cross-border intraday gate closure time closer to real time: Intraday trade is a key tool to integrate renewable energy sources and balance their variability with flexibility sources up to real time. Wind and solar producers see their forecasts strongly improving close to delivery, and it should be possible to trade shortages and surpluses as close as possible to real time. Setting the cross-border intraday gate closure time closer to real time therefore appears as a meaningful improvement, in combination with maximising the cross-border trade capacity.

Mandating the sharing of the liquidity at all timeframes until the time of delivery: EU day-ahead and intraday electricity markets are geographically coupled, meaning that trades can take place anywhere across Europe if the grid cross-border capabilities are sufficient. This considerably increases the liquidity and therefore the efficiency of the markets. The Commission considers extending these benefits also to intra-border trade between different market operators. This would support competition development and facilitate market participants to balance their positions - a key aspect for integrating further variable renewables.

Do you consider the short-term markets are functioning well in terms of:

	Yes	No
(a) accurately reflecting underlying supply/demand fundamentals	<input checked="" type="radio"/>	<input type="radio"/>
(b) encompassing sufficiently liquidity	<input checked="" type="radio"/>	<input type="radio"/>
(c) ensuring a level playing field	<input checked="" type="radio"/>	<input type="radio"/>
(d) efficient dispatch of generation assets	<input checked="" type="radio"/>	<input type="radio"/>
(e) minimising costs for consumers	<input checked="" type="radio"/>	<input type="radio"/>
(f) efficiently allocating electricity cross-border	<input checked="" type="radio"/>	<input type="radio"/>

Do you see alternatives to marginal pricing as regards the functioning of short-term markets in terms of ensuring efficient dispatch and as regards the determination of cross border flows?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

We do not see any better alternative to marginal pricing for determining prices in the short-term. Furthermore, we have a strong opinion that any proposed regulation must take into consideration any effects or distortions to short-term markets. Marginal pricing drives an efficient dispatch, removes barriers for participation and speculation in market prices, creates incentive for further cost-efficient investments and if allowed satisfies demand in all time frames.

A comment on point e) in the table above. It is not the role of short-term markets to minimize the costs for consumers but to maximize total social welfare i.e. the Euphemia algorithm maximizes consumer and producer surplus and congestion rent. The role of short-term markets is to ensure that electricity is produced

in the most cost-efficient manner and is sold to the consumers who are willing to pay the most. Thus a cost-efficient allocation of resources, which minimizes consumer prices for the (exogenous) given situation. Regulation can always minimize consumer prices further, but this comes at an expense for generators and the welfare state and in the end the tax payers.

How can the EU emission trading system and carbon pricing incentivize the development of low carbon flexibility and storage?

3000 character(s) maximum

The EU ETS incentivize producers and companies to use low carbon sources, including flexibility and storage. The incentive is linked directly to the price of the price of carbon, which historically has been too low to ensure sufficient investment in low-carbon sources.

The ETS does currently not cover all sectors (like transport, agriculture, waste), and it is still possible for countries to apply for some of their sectors like steel and cement production to be excluded from the ETS. To incentivize development of low carbon flexibility and storage, it should be of high priority to include the sectors that are able to be flexible, like steel, cement, transport, and household heating.

Do you consider that the cross-border intraday gate closure time should be moved closer to real time (e.g. 15 minutes before real time)?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

If it is possible to maintain safety standards in the operation of the electricity system while allowing for gate closure time to move closer to real time trades in cross-border intraday this would benefit the system in trading their imbalances more efficiently. This should, however, first be introduced after closer investigations into maintaining the safe operation of the electricity system. If this is not possible, closer real time trading risk jeopardizing a safe operation of the electricity system, which would not be recommendable.

Do you consider that market operators should share their liquidity also for local markets that close after the cross-border intraday market?

- Yes
- No

What would be the advantages and drawbacks of sharing liquidity in local markets after the closure of the cross-border intraday market?

2000 character(s) maximum

The sharing of order books between NEMOs would be beneficial by increasing liquidity in the local intraday markets and increase the possibility for the market participants to balance their positions in the market. Sharing of order books will also enable a level playing field between NEMOs as the market participants' choice of NEMO not will rely on historical established liquidity but on the service, products and user interface that the NEMOs provide and thereby deliver an incentive for the NEMOs to increase innovation which will

drive competition between the NEMOs and potentially contribute to decrease NEMO trading fees.

Amendments to clarify the provisions around the shared order book are needed with some urgency. Both the EU Commission and ACER have e.g. in respective letters to the All NEMO Committee dated May 2021 supported shared order book within a bidding zone until gate closure for trades within the bidding zone. A separate fast-track legal clarification through the CACM amendments should therefore not necessarily await the conclusions of the electricity market reform.

We are not aware of potential drawbacks with sharing liquidity in local markets.

Would a mandatory participation in the day-ahead market (notably for generation under CfDs and/or PPA's) be an improvement compared to the current situation?

- Yes
- No

What would be the advantages and drawbacks of such an approach?

2000 character(s) maximum

We would rather focus our efforts at promoting financial CfDs and PPAs than making day-ahead participation mandatory. Financial CfDs and PPAs have all the right incentives to participate fully in the day-ahead market, which also goes for the intraday market and balancing market – liquidity in the short-term market will therefore not be affected negatively with purely financial contracts.

Although a mandatory participation would likely help mitigate the produce-and-forget issues that comes with physical CfDs and PPAs we would not forbid such contracts. We would rather focus our efforts on providing and creating other more appealing options by pooling as much liquidity in the future markets as possible and work on developing the Guarantee of Origin (GoO) system further in creating more transparency on certain characteristics. It would be beneficial to work on increasing the transparency on the following characteristics: instalment year (crediting additionality); whether the production unit has received support; and on proving simultaneity between production and consumption. With a liquid future market and a more transparent GoO system it should be possible to provide the same product as a bilaterally traded PPAs or CfDs in a more market based approach, which would contribute to secure a more efficient fixed price agreement for consumers, if e.g. a right to such agreements are pursued.

What would be the advantages and drawbacks of having further locational and technology-based information in the bidding in the market (for example through information on the composition of portfolio, technology-portfolio bidding or unit-based bidding)?

2000 character(s) maximum

There could be some advantages by having further location information in the bidding in the market. The TSO can for example better manage congestions in the grid by knowing where generators are located in the system. We have a similar system implemented in parts of DK called geotagging. This allows the TSO to know exactly where generators are located, thereby making it easier for the TSO to manage grid congestions.

What further aspects of the market design could enhance the development of flexibility assets such as demand response and energy storage?

2000 character(s) maximum

It should be reviewed how demand response can be remunerated for the flexibility they make available or activate. This could for example be by through implementation into existing renewable energy credits or carbon trading systems, or a new scheme for flexibility resources, in order to foster more benefits for demand response and the services they provide to the system.

In particular, do you think that a stronger role of OPEX in the system operator's remuneration will incentivize the use of demand response, energy storage and other flexibility assets?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

It is possible that a stronger focus on OPEX-remuneration – depending on design – can have an effect on the use of flexibility products. However, regulation should aim at neutrality between OPEX and CAPEX in order to incentivize the overall most cost efficient solutions.

Do you consider that enabling the use of sub-meter data, including private sub-meter data, for settlement/billing and observability of demand response and energy storage can support the development of demand response and energy storage?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

Sub meters can have a positive impact in households, as it would become easier for aggregators to know the consumption of appliances at different points in time. It would become easier for aggregators to remotely adjust charging/usage of i.e. electric vehicles or heat pumps at optimal times, thereby increasing flexibility and demand response.

It could also allow for differentiated billing, e.g. fixed price contract for essentials like cooking, and dynamic price contracts for e.g. heat pumps or electric vehicles, thereby incentivizing consumer flexibility.

Sub meters can also help with identification of areas with poor energy efficiency, thereby helping consumers and companies with making investments into the areas that can produce the highest benefits (monetary and energy wise).

Sub meters can also assist home-owners or facility managers in identifying equipment that is malfunctioning or in need of maintenance. In Denmark, we have had a pilot on utilising meters that are already installed in

commercial products - this could for instance be in battery charging stands for EVs. The pilot has to our awareness established sufficiently accurate results as the commercial meter and a dedicated sub meter recorded equivalent results. This means that there may not be a need to install bespoke sub-meters, as existing meters built into appliances could potentially be exploited instead.

Do you consider appropriate to enable a product to foster demand reduction and shift energy at peak times as an ancillary service, aiming at lowering fuel consumption and reducing the prices?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

It could be useful for products such as washing machines, dishwashers, freezers, fridges, electric vehicles, heat pumps etc. (generally high consumption devices, but not limited to just those) should have settings allowing aggregators to adjust or move their consumption across time. This could be integrated into digitalization services allowing consumers to decide when i.e. a dishwasher has to be finished, or an electric vehicle has to be fully loaded. Aggregators should then adjust or reschedule consumption accordingly.

Do you consider that some form of demand response requirements that would apply in periods of crisis should be introduced into the Electricity Regulation?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

It depends of the requirement, and the definition of a "crisis". Nevertheless, it should be well defined exactly when, for whom, and how such a requirement is enacted, and under which conditions it would be revoked.

Do you see any further measure that could be implemented in the shorter term to incentivize the use of demand response, energy storage and other flexibility assets?

- Yes
- No

Do you consider the current setup for capacity mechanisms adequate to respond to the investment needs as regards firm capacity, in particular to better support the uptake of storage and demand side response?

- Yes
-

No

If not, what changes would you consider necessary in the market design to ensure the necessary investments to complement rising shares of renewables and to better align with the decarbonisation targets?

4000 character(s) maximum

The current setup with a two-stage approval from the Commission risks taking too long, and the compatibility requirements with the ENSTO-E's ERAA analysis are too strict and undermine each Member State's right to decide its own level of security of supply.

Do you have additional comments?

4000 character(s) maximum

Do you see a benefit in a long-term shift of the European electricity market to more granular locational pricing?

- Yes
- No

Do you have additional comments?

3000 character(s) maximum

Yes, we have good experiences with several bidding zones in the Nordic countries, which reflect the structural congestions in the transmission grid. Such a zonal design would, as a minimum be relevant in order to create a more granular locational decision in the investment choices. However, the locational signal can also come from tariffs, local flexibility markets for managing congestions or other elements. It is crucial that the locational signals are coordinated and developed in a way where each signal's effect on one another is taken into account. Further, the balancing markets could for example send an activation signal, which can activate a production unit that creates a local congestion and where e.g. tariffs send the opposite signal of deactivation.

These complexities and mutual interdependencies highlight the need for an in-depth impact assessment.

Benefits of more granular locational pricing:

- Improved system efficiency: By reflecting the true costs of generation and transmission at different locations it can encourage generators to build plants in areas where they are most needed and discourage them from building in areas where they are not needed. The same applies to consumers.
- Improved signals for transmission build-out: By providing signals to TSO's about where new transmission lines are needed more granular locational signals can help improve the reliability of the electric grid.

Drawbacks/uncertainties of more granular locational pricing include:

- Complexity: Determining prices at each area can be a complex and time-consuming process, requiring sophisticated computer systems and a large amount of data.

- Investment uncertainty: It will be increasingly difficult for developers to calculate a business case, as the price, which the generation facility is connected to may change considerably as other generators or consumers connect to the same area or neighbouring areas. Transmission network build out may also cause changes to the expected prices.
- Market power: If a single generator controls a large percentage of the generation at a particular area, that generator may be able to exert significant market power and influence prices.
- Financial liquidity drain: Market areas encompassing a small amount of market participants would have difficulties in gaining access to liquid financial markets. However, ACER's proposal with coupling the future markets could help to counteract this in some regard but maybe at the expense of a good price correlation for the respective zones.

Better Consumer Empowerment and Protection

Union legislation recognizes that adequate heating, cooling and lighting, and energy to power appliances are essential services. The European Pillar of Social Rights includes energy among the essential services which everyone is entitled to access.

Union legislation also aims to deliver competitive and fair retail markets, as well as possibilities to reduce energy costs by investing in energy efficiency or in renewable generation thereby putting consumers at the heart of the energy system. The energy crisis has shown the importance of delivering on this ambition but also weaknesses in the existing system. For that reason, there is scope to further reinforce the Electricity Directive to deliver the needed consumer empowerment and protection, and avoid that consumers are powerless in the face of short-term energy market movements.

Increasing possibilities for collective self-consumption and electricity sharing

Digitalisation – particularly when applied to metering and billing – facilitates energy sharing and collective self-consumption. Collective self-consumption means customers are able to invest in offsite generation and become “prosumers” reducing their bills just as if the renewable energy production installation were installed on their own roof. Consumers can then avoid buying gas produced electricity which leads to real decoupling.

The practical uses are potentially very significant – for example, families can share energy among the different members located in different parts of the country and farmers can install renewable generation on one part of their farm and use the energy in their main buildings even if located a distance away. Another clear use case is municipalities and housing associations can include off-site energy as part of social housing, directly addressing energy poverty.

Member States such as Belgium^[1], Austria, Lithuania^[2] Luxembourg, Portugal and others^[3] have shown that it is possible to implement this model in practice quickly and at reasonable cost for consumers to develop energy sharing and collective self-consumption.

Customers should be in a position to deduct the production of offsite renewable generation facilities they own, rent, share or lease from their metered consumption and billed energy. Specific provisions could allow energy poor and vulnerable customers to be given access to this shared energy, for example produced

within municipalities, or by investments of local governments.

Energy sharing should be treated in a non-discriminatory way compared to normal suppliers and producers. This means costs for other consumers are not unduly increased. Production and consumption has to happen at the same market time unit. Energy sharing be possible where there are no transmission constraints for wholesale trade – that is within price zones.

Adapting metering to facilitate demand response from flexible appliances

The roll out and uptake of demand response has been slower than desired. One of the reasons for this has been the very complex relationships between suppliers and aggregators. The greatest demand response possibilities often come from individual appliances – in particular behind-the-meter storage, heat pumps and electric vehicles. Enabling dedicated suppliers and aggregators to offer contracts covering just these appliances could help both speed the roll out of these appliances and increase the amount of demand response in the system. The Electricity Directive already provides that customers are entitled to more than one supplier, but this has been seen to require a separate connection point increasing costs for customers significantly.

Therefore, there is a case for adapting the current provisions of the Electricity Directive to clarify that customers who wish to have the right to have more than one meter (i.e. a sub-meter) installed in their premises and for such sub-metered consumption to be separately billed and deducted from the main metering and billing.

Better choice of contracts for consumers

In many Member States as the crisis unfolded, the availability and diversity of contracts became more limited, making it increasingly difficult for customers to obtain fixed price contracts in many Member States. This was also often insufficiently clear to customers who believed that they had entered into fixed price contracts, alongside a wider lack of understanding of consumer rights.

There are also few “hybrid” or “block” contracts available. Such contracts combine elements of fixed price and dynamic/variable prices giving consumers certainty for a minimum volume of consumption but allowing prices to vary above that amount.

Customers with variable price contracts can find budgeting more difficult, particularly consumers on low incomes or vulnerable consumers. The effect of such contracts is that the cost of managing the risk of wholesale price increases is faced exclusively by customers and not by suppliers. On the other hand, variable prices – at least for the energy where the customer is effectively able to control consumption - can incentivise a more efficient use of energy.

While suppliers above a certain size are obliged to offer dynamic price contracts, which were less in demand during the crisis, the legislation is silent on fixed price contracts. This should be rebalanced to allow consumers a choice between flexible or fixed price contracts. Fixed price contracts could still be based on time of use to maintain incentives to reduce demand at peak hours. Suppliers would remain free to determine the price themselves.

Suppliers often argue that it is difficult to offer attractive fixed price offers for two reasons - firstly if they do not have access to longer term markets which allow them to hedge their risks. These issues are addressed

in the sections on forward markets above. Secondly, suppliers argue that it is difficult to offer fixed price fixed term contracts because consumers are allowed to switch supplier (i.e. leave the fixed price fixed term contract) - leaving the supplier with additional costs. Currently, termination fees for fixed price fixed term contracts are allowed – but only if they are proportionate and if they reflect the direct economic loss to the supplier. Without abandoning these principles, it could be considered allowing regulators or another body to set indicative fees which would be presumed to comply with these obligations.

Strengthening consumer protection

A) Protecting customers from supplier failure

Increased supplier failure during the crisis, generally because of a lack of hedging, has been observed in several Member States. This has often resulted in all consumers facing higher bills because of socialisation of some of the failed suppliers' costs.[4] Customers of the failed suppliers are also faced with unexpected costs. Obliging suppliers to trade in a prudential way may involve some additional costs, but would reduce the risks that individual consumers face and also avoid socialisation of the costs of suppliers with poor business models. This is separate from, but complementary to, prudential rules applicable to energy companies on financial markets where the Commission has also taken action. At the same time, we recognise such obligations need to take account of the difficulties smaller suppliers face in hedging, particularly in smaller Member States (see also section on “*Forward Markets*” above).

All Member States have implemented a system of supplier of last resort, either de jure or de facto. However, the effectiveness of these systems varies and EU framework is very vague without clarifying the roles and responsibilities of the appointed supplier and the rights of consumers transferred to the supplier of last resort[5].

B) Access to necessary electricity at an affordable price during crises

The Electricity Directive includes specific provisions for energy poor and vulnerable customers, which are part of a broader policy framework to protect such consumers and help them overcome energy poverty.[6] However, the crisis has shown that affordability of energy can be a major issue not only for these groups, but also for wider sections of population. Member States can apply price regulation for energy poor and vulnerable households. Council Regulation (EU) 2022/1854 on an emergency intervention to address high energy prices allows for below cost regulated prices for all households and for SMEs on a temporary basis and subject to clear condition. In particular, such measures can only cover a limited amount of consumption and must retain an incentive for demand reduction. One of the lessons of the crisis is that the objective of reducing energy costs for consumer should not come at the expense of encouraging excess demand and fossil fuel lock-in, or fiscal sustainability. However, some form of safeguard to allow Member States to intervene in retail price setting might be needed for the future during a severe crisis, such as the current one. This could ensure that citizens have access to the energy they need, including ensuring that certain consumers have access to a minimum level of electricity at a reasonable price, regardless of the situation in the electricity markets, while avoiding subsidies for unnecessary consumption, such as heating of swimming pools[7]. This would also help ensure that when making large purchases, customers would take into account the full cost of energy. As the objective is to mitigate the impact of high prices during crisis periods, it would seem sensible to develop specific criteria to define a crisis in these terms. One alternative would be to link the Electricity Risk Preparedness Regulation, however this is focused on system adequacy, system security and fuel security, rather than mitigating the impacts of a crisis on users. Fossil fuel lock-in, however, needs to be avoided.

[1] Energiedelen en persoon-aan-persoonverkoop | VREG

[2] Lithuanian consumers to access solar parks under CLEAR-X project

[3] Spain, Croatia, Italy ,France.

[4] For example, network charges owed to TSOs and DSOs and potentially imbalance costs.

[5] In particular, we would consider confirming that customers transferred to Supplier of Last Resort retain the right to change supplier within normal switching times (i.e. customers cannot be required to stay with the supplier of last resort for a fixed period); clarifying that the supplier of last resort must be appointed based on an open and transparent procedure; right of consumers to remain with supplier of last resort for reasonable periods of time.

[6] The Energy and Climate Governance Regulation together with the 2020 recommendation on Energy poverty provide a more structural framework to address and prevent energy poverty. The Fit for 55 legislative package further reinforces this framework through other sectoral legislation, through the revision of the Energy Efficiency Directive and the Energy Performance of Buildings Directive and through setting up of the Social Climate Fund to address the impact of the ETS extension to buildings and transport.

[7] This is also in line with the Recommendation on the economic policy of the euro area which called for a two-tier energy pricing model, whereby consumers benefit from regulated prices up to a certain amount

Energy sharing and demand response

Would you support a provision giving customers the right to deduct onsite generation from their metered consumption?

- Yes
 No

Do you have additional comments?

2000 character(s) maximum

It is important with a focus on enabling a strong framework for active customers that encourages co-location between production and demand. It is important, however, that provisions in EU law have a positive impact on the energy system as a whole and the electricity market in general. The legal framework should therefore not provide automatic rights for certain market actors that may not be cost-effective for the energy system as a whole.

The risks regarding this provision are: 1) A possible relocation of small consumers' financial resources to smaller energy projects instead of a cost-effective approach and improvements of public grid infrastructure, 2) The provision could incentivise consumers to adjust their consumption such that it corresponds to a specific unit's production which may create system imbalances and could become problematic for system security if rolled out at scale, 3) Increased legal complexity in an area that is already today partly regulated via rules on energy communities.

If the provision is put forward, it should be possible for Member States to take national energy and fiscal systems into account when implementing the provision. There is also a risk that the provision could affect the possibility for Member States and network distributors to collect levies and tariffs, and it must either way be ensured that the provision results in a cost-effective use of the tariff design.

A European framework is already in place regarding energy sharing across distances for the smaller consumers, cf. preamble 46 and article 16 of directive 2019/944.

It should be noted that it is very important that such a potential provision is coherent with existing EU law on balance responsibility, cf. Regulation 2019/943 on the internal market for electricity, article 5.

If such a right were introduced:

(a) Would it affect the location of new renewable generation facilities?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

A general assessment is that the provision as mentioned will not affect the location of the bigger entities /RES generation.

The Danish TSO's and DSO's as well as relevant authorities are in these years developing and implementing the tariff system to ensure the right locational and price signals in order to increase an effective location of electricity generation and consumption (co-location).

(b) Should it be restricted to local areas?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

As mentioned above, it should be noted that there is already today a European framework in place regarding energy sharing across distances for the smaller consumers, cf. article 16 on citizen energy communities, which the Member States were obliged to implement by 1 January 2021.

(c) Should it apply across the Member State/control/zone?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

Would you support establishing a right for customers to a second meter/sub-meter on their premises to distinguish the electricity consumed or produced by different devices?

-

Yes

No

If yes, what particular issues should be taken into account?

2000 character(s) maximum

In the future, consumers should be able to contract with more than one retailer on different aspects of their electricity consumption and production. The consumer could contract with one retailer for their heat pump, another for charging their electric vehicle and a third for handling the remainder of their consumption. In addition, the consumer should be able to contract with an aggregator about utilizing the consumer's flexibility. This sets certain market related and technical requirements to smart meters, smart meter systems, energy management systems, billing arrangements and other digital solutions which still need to be developed.

Today, no precise rules concerning measurement and controlling of consumption and production by independent aggregators exist. If a customer has an agreement about utilizing their flexibility as part of his /her electricity contract, the measurement of consumption is handled in the same way as normal electricity contracts. If the consumer wants to contract with an independent aggregator, it requires that the activated flexibility can be verified by a separate measurement afterwards. This necessitates development of a new framework and requirements for the technical metering setup, which should respect the Measuring Instruments Directive (MID) and ensure all relevant standards and safety requirements are met. The future systemic and market set-up for smart meters and billing should be easy to administer, make payments easy, increase competition among flexibility providers and support roll-out of intelligent solutions for further electrification – especially heat pumps and charging infrastructure.

Independent aggregators can foster new and innovative business models and increase the supply of flexibility with the right regulatory framework. Giving independent aggregators the right to deliver services require some more administration, such as correction of imbalances and potentially also a mechanism for economic compensation.

Do you have additional comments?

2000 character(s) maximum

In relation to the use of flexibility in the electricity system, the importance of work made on standardisation of e.g. meters and use of data and data interoperability should be highlighted. In order to avoid unnecessary regulation, the Commission might also consider making use of existing tools regarding the development and implementation of product standards, in this case data quality from sub-meters. Standardisation, for example regarding meters, can affect market developments in a faster and more agile way compared to new regulation.

An example of where product standardisation would be of benefit to small consumers/households is e.g. in cases where heat pumps, dishwashers or EV chargers automatically deliver demand response when electricity prices are low.

An important step is to provide third parties access to historic and real-time data from customer EV charging stands and let them control the chargers. This is not currently possible, but it is possible to control a number of other electricity using elements in households, for example the general electricity consumption and heat consumption. Therefore, it is important that service operators also have the opportunity to use the chargers' flexibility to ensure security of supply. In a future energy system with fluctuating energy production, TSOs will

face increasing balancing expenses. Therefore, they need flexibility from all of the electricity consumption coming from households. An inability to manage demand from many different electricity using elements in the households will constitute a significant challenge to both the distribution system and to overall system balancing.

Offers and contracts

Would you support provisions requiring suppliers to offer fixed price fixed term contracts (ie. which they cannot amend) for households?

- Yes
- No

Do you have additional comments?

2000 character(s) maximum

It is important that consumers are encouraged to be flexible and save energy – the need for flexible consumption will only increase as renewables make up an increasing share of the energy mix. Member States should however have the flexibility to provide consumers with the option to hedge themselves against exposure to long periods of high prices. If consumers were granted a right to fixed price contracts of a longer duration in parallel to their right to dynamic price contracts, it could provide incentives for suppliers to enter into long-term agreements in the form of PPAs or standard forward transactions.

The provision would maintain a choice for consumers as foreseen in the electricity directive; it should result in higher liquidity in the financial market; and create transparency on the cost of fixed price agreements as an insurance to consumers – the more liquidity that can be established on forward markets, the smaller the insurance price will be.

At the same time, it is important that consumers are incentivised to be flexible and save energy. A right to a fixed price contract could e.g. be realised through a "hybrid" contract where a fixed amount of kWh/share of consumer consumption is charged at a fixed price and the rest is charged at dynamic prices. This type of contract already exists for commercial users. It allows the consumer to be partially exposed to fluctuations in the price of electricity and fully exposed to time-of-use tariffs. The consumer is thus protected and at the same time incentivised to be flexible in support of the grid and security of supply.

The availability of fixed price contracts in conjunction with a right to establish sub-meters can allow consumers to protect themselves against price-fluctuations in their non-flexible consumption and at the same time to an even larger extent - through use of the emerging market for aggregation - to benefit from and contribute to the electricity system with their flexible consumption.

If such an obligation were implemented what should the minimum fixed term be?

at most 1 choice(s)

- (a) less than one year
- (b) one year
- (c) longer than one year

(d) other

Do you have additional comments?

2000 character(s) maximum

Cost reflective early termination fees are currently allowed for fixed price, fixed term contracts:

	Yes	No
(a) Should these provisions be clarified?	<input checked="" type="radio"/>	<input type="radio"/>
(b) If these provisions are clarified should national regulatory authorities establish ex ante approved termination fees?	<input checked="" type="radio"/>	<input type="radio"/>

Do you have additional comments?

2000 character(s) maximum

Currently, the unclear scope and reach of the provisions on termination fees lead to divergent interpretations among suppliers, difficulty in enforcement and lack of clarity on part of consumers. A clarification of the provisions could well be supplemented by the establishment of ex ante approved termination fees, set by the national regulator after an appropriate consultation process. For consumers, clear foreknowledge of the costs of terminating a contract will enable them to make better choices.

Do you see scope for a clarification and possible stronger enforcement of consumer rights in relation to electricity?

- Yes
- No

What should be done to clarify consumer rights and ensure stronger enforcement?

2000 character(s) maximum

The first step in improving the functioning of consumer protection in electricity should be to identify the places in the regulation where lack of clarity may be hindering effective implementation and enforcement. When proposals for adjusting the causes of the identified problems have been generated, an assessment of the impact of these adjustments should be made. At this point in the process, it will be prudent to analyse the need for stronger or new tools for enforcement.

Prudential supplier obligations

Would you support the establishment of prudential obligations on suppliers to ensure they are adequately hedged?

Yes

No

Do you have additional comments?

2000 character(s) maximum

The need of suppliers to hedge their portfolio depends largely on the agreements their customers want to enter into. If all consumers of a certain supplier want dynamic prices, it does not make sense to ask the supplier to hedge a certain share of their supply. If, for instance, consumers get the right to enter into a fixed price agreement, i.e. suppliers are required to offer fixed prices of longer duration to consumers from which the supplier cannot opt out of., this creates an implicit incentive to enter into forward agreements in the wholesale markets.

Further we find it difficult to envision the concrete enforcement and monitoring of a requirement on suppliers to hedge parts of their supply. In our view such requirements could lead to even higher price premiums on e.g. a fixed price agreement – we need as efficient consumer protection instruments as possible. We do acknowledge that if the suppliers are not required to hedge parts of their supply the consumer right to enter into a fixed price agreement would not entail a 100 percent sure contract as the supplier could go bankrupt. A larger risk of supplier bankruptcy could require a closer look to the regulation of supplier of last resort issues. We are aware that some Member States have had bankruptcy issues with their suppliers where requirements on the supplier to hedge parts of their supply could make sense. In that context we would support a voluntary implementation on a Member State basis for a requirement on suppliers to hedge parts of their supply.

Would such supplier obligations need to be differentiated for small suppliers and energy communities?

Yes

No

Supplier of last resort

Should the responsibilities of a supplier of last resort be specified at EU level including to ensure that there are clear rules for consumers returning back to the market?

Yes

No

Do you have additional comments?

2000 character(s) maximum

Under the current regulations, Denmark has established a well defined and well-functioning regime ensuring that consumers are transferred to a new supplier if their current supplier drops out of the market. There does therefore not appear to be a need to specify obligatory rules at EU-level, as these might compromise existing solutions in Member States.

Would you support including an emergency framework for below cost regulated prices along the lines of the Council Regulation (EU) 2022/1854 on an emergency intervention to address high energy prices, i.e. for households and SMEs?

- Yes
 No

(a) If such a provision were established, should price regulation be limited in time and to essential energy needs only?

- Yes
 No

(b)

	Yes	No
Would such provisions substitute on long term basis for direct access to renewable energy or for energy efficiency?	<input type="radio"/>	<input checked="" type="radio"/>
Can this be mitigated?	<input type="radio"/>	<input checked="" type="radio"/>

(c)

	Yes	No
Would such contracts reduce incentives to reduce consumption at peak times?	<input checked="" type="radio"/>	<input type="radio"/>
Can this be mitigated?	<input type="radio"/>	<input checked="" type="radio"/>

Do you have additional comments?

2000 character(s) maximum

We do not see regulation of prices as the solution. The problem of affordability should be alleviated through social policy and not through market interventions. In case a permanent framework is established, it must be non-obligatory and require interventions to be strictly time-limited, so as not to compromise the functioning of the market.

Enhancing the Integrity and Transparency of the Energy Market

Never has there been as much of a need as today to enhance the public's trust in energy market functioning and to protect EU effectively against attempts of market manipulation.

Regulation (EU) 1227/2011 on wholesale market integrity and transparency (REMIT) was designed more than a decade ago to ensure that consumers and other market participants can have confidence in the integrity of electricity and gas markets, that prices reflect a fair and competitive interplay between supply and demand, and that no profits can be drawn from market abuse.

In times of extra volatility, external actors' interference, reduced supplies, and many new trading behaviours, there is a need to have a closer look as to whether our REMIT framework is robust enough. In addition, recent developments on the market and REMIT implementation over last decade have shown that REMIT and its implementing rules require an update to keep abreast. The wholesale energy market design has evolved over the past years: new commodities, new products, new actors, new configurations and not all data is effectively reported. The existing REMIT framework is not fully updated to tackle all new challenges, including enforcement and investigation in the new market realities.

Current experience, including a decade of REMIT framework implementation (REMIT Regulation from 2011 and REMIT Implementing Regulation from 2014) and functioning show that REMIT framework may require improvements to further increase transparency, monitoring capacities and ensure more effective investigation and enforcement of potential market abuse cases in the EU to support new electricity market design. The following areas could be considered in this context:

- The alignment of the ACER powers under REMIT with relevant powers under the EU financial market legislation including relevant definitions, in particular the definitions of market abuse (insider trading and market manipulation);
- The adaptation of the scope of REMIT to current and evolving market circumstances (new products, commodities, market players);
- The harmonisation of the fines that are imposed under REMIT at national level and the strengthening of the enforcement regime of certain cases with cross-border elements under REMIT;
- Increasing the transparency of market surveillance actions by improved communication of the market-related data by ACER, regulators and market operators.

What improvements into the REMIT framework do you consider as most important to be addressed immediately?

4000 character(s) maximum

With regards to the harmonization and strengthening of the enforcement regime under REMIT: what shortcomings do you see in the existing REMIT framework and what elements could be improved and how?

4000 character(s) maximum

There have not been that many verdicts on REMIT cases, which would have helped establish a precedent and clarity on the REMIT market rules against market manipulation. One improvement would be to establish more consensus on the grey areas of REMIT that are hard to agree on e.g. capacity withholding. This could for instance be done through definitions or examples of market manipulation stated explicitly in the REMIT regulation – again with the aim to create clarity for market participants, to help strengthen the enforcement regime under REMIT and to some degree to lessen the future workload of REMIT investigations.

To harmonize and strengthen the enforcement regime under REMIT it could be investigated how synergies between the NRAs' REMIT investigation cases in Europe could be exploited. The electricity market covers the whole of Europe and market manipulation in one part of Europe will affect market outcomes in other parts of Europe. As the markets are connected, there could be scope for harmonizing and coordinating the REMIT work efforts from NRAs and ACER at a larger extend than today.

With regards to better REMIT data quality, reporting, transparency and monitoring, what shortcomings do you see in the existing REMIT framework and what elements could be improved and how?

4000 character(s) maximum

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