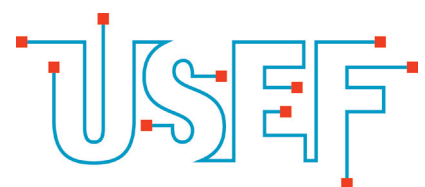




Public
consultation on
a new energy
market design

5 October 2015

Public consultation of the European Commission



A solid foundation for smart energy futures

Public consultation on a new energy market design

Fields marked with * are mandatory.

Information about you

* Are you responding to this questionnaire on behalf of/as:

- Individual
- Organisation
- Company
- Public Authority
- Other

* Name of the company/organisation

USEF (Universal Smart Energy Framework)

* Please describe briefly the activities of your company/organisation and the interests you represent

About USEF

One common market standard for an integrated smart energy future
The Universal Smart Energy Framework (USEF), has been developed to drive a fast, fair and lowest cost route to an integrated smart energy future. USEF delivers an international common standard to accelerate the transition to an integrated smart energy future. It ensures all technologies and projects are connectable at lowest cost, unifies different existing energy markets and enables the commoditisation and trading of flexible energy use. Designed to offer fair market access and benefits to all involved, USEF defines different stakeholder roles (new and existing), how they interact and how they benefit by doing so.

About USEF Foundation

Joining forces across roles and boundaries to achieve a unified smart energy future

To accelerate the transition to a commercially viable smart energy system, USEF Foundation develops, maintains and audits the framework. It is a partnership of key players in the smart energy domain: energy suppliers, network operators, electrical equipment manufacturers, consultancies and ICT companies, working together to effectively address the challenges of one integrated system which benefits new and traditional energy companies as well as consumers. USEF was founded by ABB, Alliander, DNV-GL, Essent, IBM, ICT and Stedin.

About Flexibility

Flexibility - good for the grid, the environment and you

Electricity consumption and reliance have grown significantly since grid systems were originally designed. The rise of renewables has intensified the situation, with people uploading and downloading energy in increasingly diverse locations. Managing this has resulted in a complex grid system, with higher variations in energy flow and quality, increasing the risk of interruption of supply and, eventually, serious outage.

Grid replacement and reinforcement are expensive. New storage technologies will offer some relief but, ultimately, the only solution for both the environment and the grid is for us to better manage both our overall consumption and the way in which we consume.

By choosing to be flexible about when we use our non-time-dependent electricity consumption, we can help to reduce grid stress and receive financial incentives. We could sell that flexibility to grid operators and they could choose to move it to periods when there is less overall demand on the grid. More and more technologies are being developed to enable us to do just that but, to make it all work, those technologies all need to be grid integrated and we need a formal market for trading energy flexibility. USEF has been developed specifically to deliver the tools and the rules to achieve these things.

Activities in EU countries

USEF is based in the Netherlands, however our founding partners are active in most countries of the EU.

USEF's ambition is to create a framework that can be applied in every member state, actually the framework can be applied in every liberalized energy market. This is (a.o.) reflected through our review board, where market experts are present from different member states. Currently the USEF framework is tested in four different field trials in the Netherlands, our ambition is to implement USEF in several field trials in major EU countries in 2016.

* Which countries are you most active in?

- | | |
|------------------------------------|---|
| <input type="checkbox"/> Austria | <input type="checkbox"/> Belgium |
| <input type="checkbox"/> Bulgaria | <input type="checkbox"/> Croatia |
| <input type="checkbox"/> Cyprus | <input type="checkbox"/> Czech Republic |
| <input type="checkbox"/> Denmark | <input type="checkbox"/> Estonia |
| <input type="checkbox"/> Finland | <input type="checkbox"/> France |
| <input type="checkbox"/> Germany | <input type="checkbox"/> Greece |
| <input type="checkbox"/> Hungary | <input type="checkbox"/> Ireland |
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| <input type="checkbox"/> Poland | <input type="checkbox"/> Portugal |
| <input type="checkbox"/> Romania | <input type="checkbox"/> Slovakia |
| <input type="checkbox"/> Slovenia | <input type="checkbox"/> Spain |
| <input type="checkbox"/> Sweden | <input type="checkbox"/> United Kingdom |
| <input type="checkbox"/> Other | |

* Can we publish your answers on the Commission website?

- YES - under my name (I consent to all of my answers/personal data being published under my name and I declare that none of the information I have provided is subject to copyright restrictions).
- YES - under my name and I declare that none of the information I have provided is subject to copyright restrictions).
- YES - anonymously (I consent to all of my answers/personal data being published anonymously and I declare that none of the information I have provided is subject to copyright restrictions).
- YES - anonymously and I declare that none of the information I have provided is subject to copyright restrictions).
- NO - please keep my answers confidential (my answers/personal data will not be published, but will be used internally within the Commission)

Short-term markets

- * (1) Would prices which reflect actual scarcity (in terms of time and location) be an important ingredient to the future market design? Would this also include the need for prices to reflect scarcity of available transmission capacity?

Yes, for an optimal functioning market it is crucial that wholesale prices reflect actual scarcity. This is not limited to the price of commodity, also flexibility should be available for all market players, and should be applied where it creates the most value. Since flexibility can also be used to avoid or solve possible transmission (or distribution) capacity issues, TSOs (and DSOs) should be able to acquire flexibility for grid management / grid optimization purposes. USEF has designed a flexibility framework that is fully market-based, creates a truly level playing field for all market actors and removes market entry barriers by standardizing market processes and information exchange. Within this market structure, the DSO can acquire flexibility against market prices, for congestion/capacity management purposes. We prefer this method compared to dynamic grid tariffs, as this endangers a proper functioning of the flexibility market, and does not provide the DSO with the right investment incentives.

- * (2) Which challenges and opportunities could arise from prices which reflect actual scarcity? How can the challenges be addressed? Could these prices make capacity mechanisms redundant?

Challenges:

1. If grid tariffs directly reflect actual scarcity, a (too) strong dependency on local grid conditions for end-users may be created, since not only flexibility, but also non-flexible load/generation will (in that case) be made subject to variable tariffs, which will create large differences between transmission / distribution costs for end-users (customers connected to low-dimensional distribution grids may pay higher distribution tariffs than others). Rather than through dynamic tariffs, the actual scarcity should be reflected in the price of flexibility. The value of this flexibility, acquired by the DSO to solve congestion or voltage issues, should be transferred through the Aggregator to the end-user that is offering its demand side flexibility to the Aggregator. This mechanism is explained and elaborated in the USEF Market Coordination Mechanism, which may serve as a viable reference for member states.
2. Exposure to high energy prices for vulnerable end-users. This challenge can be overcome if suppliers continue to offer commercial products against fixed (or capped) prices.

3. Products may become too complex for consumers, which will demotivate them from offering flexibility. This challenge can be mitigated by the Aggregator, whose role it is to package flexibility into competitive and innovative products for the customer.

Opportunities:

1. Lower energy costs for end-users, esp. retail. If retail customers are offered a time-of-use contract based on wholesale market prices, the risk of high energy prices is transferred to the end-user. This removes the need for energy suppliers to hedge their risks, and avoids hedging costs that are currently borne by retail customers. This will lower their energy costs on a yearly basis, compared to the current situation of fixed, single or double tariff contracts.

2. End-users are stimulated to offer flexibility to the market, which will lower overall system costs and (further) decrease energy costs for the end-user, compared to the current situation where flexibility capabilities are not fully utilized.

3. End-users are stimulated to improve their energy efficiency, In particular, they may be stimulated to reduce their energy consumption at (super-)peak prices. This will contribute to energy efficiency and carbon emission targets.

4. The need for peak generation capacity may decrease

5. The need for peak transmission and distribution capacity may decrease.

Capacity mechanisms:

Demand side flexibility can play a crucial role in ensuring security of supply, and forms a viable and cost efficient alternative for peak power capacity units. In our opinion it is crucial to ensure that the full potential of demand response is tapped, since demand side flexibility may prove to be sufficient to secure generation adequacy. To allow this, several changes are needed, see answer to question 10. One of the main elements is the creation of an open, transparent, efficient flexibility market, as proposed by USEF.

If capacity mechanisms are considered, then demand side flexibility should be able to compete with generation on equal footing. In some markets (esp. U.S.A.) capacity markets have proven to be a strong catalyst for demand response services.

* (3) Progress in aligning the fragmented balancing markets remains slow; should the EU try to accelerate the process, if need be through legal measures?

Yes. The transition to a sustainable energy system, with a high level of variable renewable energy sources and the decommissioning of base-load power plants, creates high challenges to the balance of demand and supply. A full integration of the balancing markets is a major part of the solution since it

- provides economy of scales (imbalances can be evened out)
- allows flexible resources to operate in a larger market (i.e. cross-border)
- improves liquidity in the market
- removes the (virtual) monopolies that currently exist in several member states
- removes entry barriers (market players can become active in many countries)

Allowing demand side flexibility access to balancing markets is crucial in our opinion. Standardization of the flexibility market is an important step to remove entry barriers for this market. However, this standardization is hampered by a lack of standardisation of wholesale market processes and TSO products (e.g. ancillary services) in the EU. To allow for efficient flexibility markets (and thus efficient balancing markets), there is a need for aligning national market structures. This includes the synchronisation of roles & responsibilities, market processes and information exchange.

- * (4) What can be done to provide for the smooth implementation of the agreed EU-wide intraday platform?

Liquidity of the intraday market can be strongly improved by tapping the full potential of demand side flexibility.

Long-term markets to enable investment

- * (5) Are long-term contracts between generators and consumers required to provide investment certainty for new generation capacity? What barriers, if any, prevent such long-term hedging products from emerging? Is there any role for the public sector in enabling markets for long term contracts?

The current liberalised market allows (a collection of) consumers to agree on long-term contracts with generators, if this provides value for both sides. It is, however, important that demand side flexibility can compete on an equal footing with generation capacity on all markets; this also relates to long-term (hedging) products. USEF clearly describes how this concept can be implemented through a flexibility market

- * (6) To what extent do you think that the divergence of taxes and charges^[1] levied on electricity in different Member States creates distortions in terms of directing investments efficiently or hamper the free flow of energy?

[1] These may be part of general taxation (VAT, excise duties) or specific levies to support targeted energy and/or climate policies.

This is certainly the case, however it has little use to harmonize taxes and charges if the energy markets in the EU have not been harmonized. Next to the ambition to integrate the EU markets, there should also be the ability to integrate. This ability can only be achieved if the market organization (roles and responsibilities), market processes and information exchange is standardised.

A first step achieving the harmonisation of energy markets, is to ensure that the emerging flexibility markets are standardized on these aspects (first time right). Next, or in parallel, the wholesale and balancing markets should be harmonized on these aspects. Only then does it make sense to harmonize taxes and charges, in order to create a fully functional and efficient EU energy market.

Renewable generation

*** (7) What needs to be done to allow investment in renewables to be increasingly driven by market signals?**

Tap the full potential of demand side management. Currently the market revenue (i.e. excluding subsidies) of renewables is relatively low. As the marginal costs of wind and PV are zero, they are placed at the bottom of the merit order, and generate no revenue when demand is low. By stimulating demand during low-price periods, not only the energy price for the end-user decreases, also the revenue of renewables can increase.

Also commercial curtailment of renewables should be enabled (e.g. curtailment of wind energy when wholesale/balancing prices are negative); renewable energy should be traded on wholesale markets and netting of energy should be disallowed.

*** (8) Which obstacles, if any, would you see to fully integrating renewable energy generators into the market, including into the balancing and intraday markets, as well as regarding dispatch based on the merit order?**

Tap the full potential of demand side management. Currently the market revenue (i.e. excluding subsidies) of renewables is relatively low. As the marginal costs of wind and PV are zero, they are placed at the bottom of the merit order, and generate no revenue when demand is low. By stimulating demand during low-price periods, not only the energy price for the end-user decreases, also the revenue of renewables can increase.

Also commercial curtailment of renewables should be enabled (e.g. curtailment of wind energy when wholesale/balancing prices are negative).

The main obstacle to tap the full potential of demand side management, is the lack of a common market model for flexibility. This includes a regulatory framework for demand response, harmonized flexibility products (e.g. ancillary services), a market coordination mechanism for flexibility, standardised market processes and information exchange. USEF has developed a comprehensive and transparent framework that includes all these elements.

- * (9) Should there be a more coordinated approach across Member States for renewables support schemes? What are the main barriers to regional support schemes and how could these barriers be removed (e.g. through legislation)?

A coordinated approach certainly makes sense, yet priority should be given to the harmonization of wholesale and balancing markets on one hand, and the standardization of the emerging flexibility markets on the other hand. Only then can an assessment be performed to determine which coordinated approach would be suitable for renewable support schemes.

Demand response

- * (10) Where do you see the main obstacles that should be tackled to kick-start demand-response (e.g. insufficient flexible prices, (regulatory) barriers for aggregators / customers, lack of access to smart home technologies, no obligation to offer the possibility for end customers to participate in the balancing market through a demand response scheme, etc.)?

The main obstacles are:

(i) the conditions for services requested by the TSO, such as balancing power, strategic reserves, often favour conventional generation units by setting technical requirements that disqualify demand response (e.g. prequalification requirements on unit level, rather than on service/pool level)

(ii) currently flexibility cannot clearly be separated from commodity due to flaws in the market design, disallowing aggregators to develop and deliver flexibility services, restricting this to - or favouring energy suppliers in bringing these products / services to the end-user, or allowing free-riding by independent aggregators

(iii) lack of standardisation of flexibility services, market processes and information exchange on a European level (even if markets are still regional/national), creating entry barriers for market players who seek to act on different markets.

(iv) the DSO is currently not allowed and/or not incentivised to acquire flexibility as an alternative to grid reinforcement, i.e. the DSO is not incentivised to replace CAPEX by OPEX, although this is beneficial for the society.

USEF proposes a framework that covers aspects (ii) and (iii). The framework consists of a flexibility market that is fully market-based, creates a truly level playing field for all market actors and removes market entry barriers by standardizing market processes and information exchange.

Cooperation between System Operators

- * (11) While electricity markets are coupled within the EU and linked to its neighbours, system operation is still carried out by national Transmission System Operators (TSOs). Regional Security Coordination Initiatives ("RSCIs") such as CORESO or TSC have a purely advisory role today. Should the RSCIs be gradually strengthened also including decision making responsibilities when necessary? Is the current national responsibility for system security an obstacle to cross-border cooperation? Would a regional responsibility for system security be better suited to the realities of the integrated market?

We consider it a logical consequence of market harmonization to transfer the responsibility for system security to a regional level. This will also stimulate the synchronization of balancing products, which in turn removes market entry barrier for aggregators.

Adapting the regulatory framework

- * (12) Fragmented national regulatory oversight seems to be inefficient for harmonised parts of the electricity system (e.g. market coupling). Would you see benefits in strengthening ACER's role?

It is important that a European flexibility model is fully supported by a European regulator. It should allow, however, for adaptation to local circumstances by national regulators (e.g., physical grid conditions, renewable shares).

- * (13) Would you see benefits in strengthening the role of the ENTSOs? How could this best be achieved? What regulatory oversight is needed?

Bold actions of the EC are required to enable demand response. This would include the introduction of a common regulatory framework and design for flexibility markets, as proposed by USEF. ENTSO-E, in cooperation with other stakeholders, could identify local differences, and local adaptation needs to such a European flexibility market model. The standardisation of TSO products is typically an activity that the ENTSOs should embrace.

- * (14) How should governance rules for distribution system operators and access to metering data be adapted (data handling and ensuring data privacy etc.) in light of market and technological developments? Are additional provisions on management of and access by the relevant parties (end-customers, distribution system operators, transmission system operators, suppliers, third party service providers and regulators) to the metering data required?

A market coordination mechanism should be designed, that clearly describes which information needs to be exchanged / made available at what time, to which party and on which aggregation level, in order for each party to be able to perform the responsibilities associated with his role(s) in the most efficient way, whilst ensuring that the privacy of the end-user is respected according to national regulations and the security meets all relevant standards.

Standardisation should be sought on the level of (description of) roles and responsibilities, market processes, data (exchange) standards. The choice for which party will/can take the role of meter data acquisition, distribution and management can be left to the member states. Also implementation issues e.g. the choice between a central data hub or a distributed solution can be left to the member states.

It is important to recognize that the metering issue is not limited to metering on connection level. For a proper functioning of flexibility markets (based on demand side flexibility), sub-metering will play a crucial role. Therefore the governance question needs a strong focus on sub-metering, where a rigid governance structure should still allow a highly efficient solution for the meter data processes.

- * (15) Shall there be a European approach to distribution tariffs? If yes, what aspects should be covered; for example framework, tariff components (fixed, capacity vs. energy, timely or locational differentiation) and treatment of own generation?

In general, current tariff schemes do not take own generation, and its associated distribution costs, into account. For a fair distribution of costs, it seems reasonable that tariff schemes are re-evaluated to account for own generation.

Care should be taken when distribution tariffs are used as a form of demand side management, which is e.g. the case for capacity tariffs (stimulating a flat load curve) or Time-of-Use (ToU) (stimulating load during off-peak hours from the grid perspective). These tariffs may obstruct the use of flexibility for other purposes (e.g. balancing), even at time when the local grid is not congested and without a proper comparison where the added value of the flexibility is the highest. In our opinion the larger part should consist of the energy component, based on absolute PTU (Program Time Unit - wholesale settlement period / 15 minute interval) values, rather than netting the volume on a monthly/yearly basis. Main benefits for this solution:

- (i) This stimulates energy efficiency
- (ii) It aligns with the commodity part of the supply contract, leaving the flexibility product separate from supply and distribution. This in turn will allow for a mechanism that can optimize the use of the flexibility against all available markets.
- (iii) Costs are fairly distributed, not discriminating between supply and return supply, as both flows need to be distributed.

The integration of energy and flexibility markets will certainly benefit from a European approach towards distribution tariffs.

Still, a redesign and harmonization of distribution tariffs, cannot be performed separate from the design of a flexibility market. Only a holistic approach can lead to an optimal and efficient energy system, with a fair allocation of costs and benefits.

- * (16) As power exchanges are an integral part of market coupling – should governance rules for power exchanges be considered?

Priority should be given to the harmonization of wholesale and balancing markets on one hand, and the standardization of the emerging flexibility markets on the other hand.

European dimension to security of supply

*****(17) Is there a need for a harmonised methodology to assess power system adequacy?

Yes, one of the crucial elements of this methodology is to include DR potential in the adequacy assessment whilst ensuring that this potential can be tapped.

*****(18) What would be the appropriate geographic scope of a harmonised adequacy methodology and assessment (e.g. EU-wide, regional or national as well as neighbouring countries)?

No comment.

* (19) Would an alignment of the currently different system adequacy standards across the EU be useful to build an efficient single market?

Yes, one of the crucial elements of this methodology is to include DR potential in the adequacy assessment whilst ensuring that this potential can be tapped.

- * (20) Would there be a benefit in a common European framework for cross-border participation in capacity mechanisms? If yes, what should be the elements of such a framework? Would there be benefit in providing reference models for capacity mechanisms? If so, what should they look like?

In the effort of EU market integration, the integration of capacity mechanisms (if/when present) should certainly not be ignored. Security of supply is not restricted to country borders, and flexibility resources should be able to participate in different markets.

When a common market coordination mechanism is introduced in all member states, integration of capacity mechanisms is a straightforward exercise that increases the value of flexibility, increases the efficiency of the system and reduces the energy prices for the customer. The USEF flexibility value chain already takes the concept of capacity markets and strategic reserves into account, and shows how these concepts can be integrated with existing markets.

The common framework should include a standard capacity product/service, prequalification method, measurement and validation method, settlement method, market coordination model

- * (21) Should the decision to introduce capacity mechanisms be based on a harmonised methodology to assess power system adequacy?

Yes, one of the crucial elements of this methodology is to include DR potential in the adequacy assessment whilst ensuring that this potential can be tapped.

Submission of additional information

If you want to submit further documents, please send these only to ENER-MARKET-DESIGN@ec.europa.eu. Further documents can only be a complement to answering the above questions. Please also mention your name or that of your organisation in the subject line of your mail and reply to the following question

- * Did you send additionnal submissions to ENER-MARKET-DESIGN@ec.europa.eu

- yes
 no

THANK YOU FOR YOUR COLLABORATION!

Contact

✉ ENER-MARKET-DESIGN@ec.europa.eu
