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Market RES

ACER public consultation: European Energy Regulation: A bridge to 2025

Response from the EU – IEE Project Market4RES

June 2014

Introduction

ACER public consultation facilitates the debate on the potential evolution of the EU Target Model after 2020.

The EU IEE Project Market4RES will investigate the post 2020 framework in a liberalised electricity market with large share of Renewable Energy Sources (RES)

By Market4RES, we make reference to an electricity market design for the pan-European context that efficiently supports the achievement of the 2020 objectives (and the subsequent 2030 targets). That means not only efficiently decarbonizing the system, but also ensuring a secure and competitive supply at a pan-European level.

The Market4RES project will provide valuable results and recommendations, relevant to the priority questions presented in the consultation:

Q. Have we identified correctly the issues and trends within each area of the energy sector?

A: Market4RES agrees that the main issues and trends for the electricity sector are identified. However these are covered at a rather high level.

" ..The implementation of all aspects of the electricity Target Model across Europe will allow us more accurately and continuously to assess whether and how that model can be improved or refined in the years to 2025, and indeed beyond.."

A: This is a strategy based on "learning-by-doing" approach *i.e.* start implementing the whole Target Model (TM) and make adjustments if necessary. This strategy will be investigated inthe so-called Work Stream 1 (WS1) of the Market4RES project.

As input, also to the consultation, a high – level definition of the Target Model is presented:

The EU Target Model proposes a market design for the management of cross-border exchanges at each timeframe (i.e. forward, day-ahead, intraday and balancing) and a

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coordinated approach to capacity calculation:

1. Forward transmission market: Through a single allocation platform at pan-European level, TSOs should allocate the forecast available interconnection capacity under explicit auctions by trading either Financial Transmission Rights (FTRs) or Physical Transmission Rights (PTRs) with Use-it-or-Sell It (UIOSI) provisions. Transmission Rights should be financially firm. A secondary market for trading transmission capacity rights should be implemented.

2. Day-ahead: It is foreseen the implementation of a mechanism (the so called Market Coupling) based on implicit auctions for the cross-zonal capacity allocation, meaning that such capacity is implicitly allocated along with the energy trades negotiated in the respective electricity markets. The tradable products in day-ahead are hourly orders, (profile) block orders and smart orders (e.g. linked orders, exclusive orders, minimum income conditions, etc...)

3. Intraday: The Target Model for Cross-Border capacity allocation is implicit continuous allocation based on (continuous trading). The enduring TM foresees the implementation of sophisticated tradable products, enabling a better representation of physical and economical constraints of market players, together with the cross-matching of all possible products (e.g. as opposed to current segmentation of for instance hourly and block orders). Intraday transmission capacity shall be priced and in a manner which reflects Market Congestion and is based on actual Orders. Regional auctions may complement the continuous allocation of intraday capacity.

4. Balancing: The long-term perspective is to have Multilateral TSO-TSO mechanism with Common Merit Order for each of the different balancing products defined by the codes (FRRa, FRRm and RR). This means that TSOs share all balancing offers and run a common process of activation on the basis of economic efficiency, common security and interconnection situation. TSOs cannot activate more capacity than they brought to the CMO which implies that required margin/reserves should however not be affected (optimized) by this process. This long-term perspective should be supported by bilateral or regional pilot projects.

5. Capacity calculation: A European-wide common grid model (EU-CGM) should be established, consisting of the same level of information: coordinated Reliability Margin (RM), coordinated security analysis (capacity assessment and/or flow-based allocation), coordinated curative redispatch measures to guarantee firmness of capacities.

Other comments

"..Non-discriminatory market arrangements must not create barriers to participation on the basis of size, location, connection voltage, technology and whether the participant is on the demand or generation side..."

A: The reference to the basis of size is unclear. The size is at the moment one of the main qualifying requirements for several technical pre-requisites making possible participation in market arrangements as e.g. Smart Metering.

"..Promoting a rapid transition to a system in which all parties are balance responsible..."

A: A more explicit definition of "all parties" is needed. Moreover, the ACER document ignores the fact that in many markets RES generators are already taking on balancing responsibility. However, a number of market features need to be in place to ensure that balancing risk is shared by both renewables and conventional technologies. RES generators can be exposed to balancing responsibility in mature intraday markets with a high level of liquidity and non-discriminatory rules to enable RES generators to take part in these markets. An important part of this is the uptake of intraday markets. While the latter exist in some Member States, the volumes of energy traded are still relatively low, gate closure times are far from energy delivery times and markets are not regionally integrated reducing the opportunities to reducing forecast errors from wind power production and solar power production and subsequently its imbalances.

"..However, cross-border European balancing markets need to be further developed..."

A: Provision of balancing services to TSO1 from a generator belonging to TSO2's control zone requires a capacity reservation in the interconnection, meaning that there will be less cross-zonal capacity available for day-ahead and intraday trading. The European interconnections are often constrained, so the capacity reservation appears to be a very controversial question at the moment. The Framework Guidelines on Electricity Balancing (FG EB) developed by ACER actually recommend to forbid reservation of cross border capacity for the purpose of balancing, unless the TSOs can demonstrate that such reservation would result in increased social welfare. As stated in the FG EB: "Under no circumstances, cross-border capacity shall be reserved for cross-border balancing purposes"

"..DSOs will increasingly need to play a key role in the development of a more active, smarter demand-side and smart grids. Regulation should provide the framework for the

efficient operation of DSOs and facilitate the development of new markets to the benefit of consumers..."

A: New roles of DSO, especially with regard to the demand side are therefore expected in the future.

"..The remit of DSOs is perhaps changing faster than any other single actor in the energy sector. Some networks are beginning to require more active management as significant volumes of small-scale generation connect to distribution grids. The TSO-DSO interface therefore requires careful management, as does the need for efficient information exchange, coordinated congestion management and integrated planning (coordination requirements between TSOs and DSOs introduced, for example, by the Demand Connection Code provide a valuable starting point)..."

A: The DSO-TSO interface is a very important point for the future, which should be covered by the regulation.

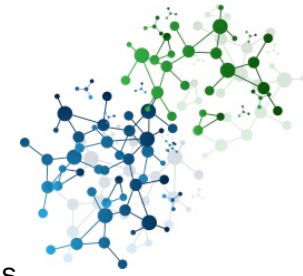
Q. Are there other areas where we should focus?

A: In the second Work Stream of the Market4RES project (WS2) an important assumption is made. Structural changes & additions to the existing Target Model (TM) might be needed post 2020.

In order to create this well-functioning system, it is necessary to step forward in the integration of national markets in the direction set by the Target Model (TM) and also to rethink the design of the different market mechanisms (involving different time frames) and coordinate their functioning so that conventional technologies, RES and DSM can be efficiently integrated into system operation to deploy their full potential. This means that the targeted market design of the project cannot focus on one type of resource, but rather on them all and their interactions.

<u>Background and detailed description</u>

RES and markets up to now: RES to Market



A large penetration of electricity from Renewable Energy Sources (RES-E) was considered as one the most promising alternatives to ensure a more secure, sustainable and competitive supply at a European level. As a consequence, the deployment of RES generation in national systems has been pursued as an essential, separate and stand-alone objective.

Thanks to the fact that they were financially supported and getting priority in the dispatch (and therefore not being integrated in markets), RES generation technologies rapidly developed and large amounts of these resources were installed while the electric power systems learnt about the challenges posed by RES generation (among others, the market design has been seriously challenged by such development).

This is precisely where the project aims at contributing: how to rethink the market design to more efficiently meet all targets.

Rethinking the market design in the new context: **MARKET4RES**

Achieving an operation of the system that is compatible with the target objectives requires providing the appropriate amount of not only energy, but also other types of electricity-related products: low-emission energy (or DSM or energy efficiency), firm capacity and flexibility (load following and operating reserves). When the energy-only market itself does not provide on its own accord a sufficient volume of these products, some additional, usually market based, mechanisms need to be introduced (which should ideally be integrated at European scale). Therefore, not only the energy only market, but also all these electricity-related markets are relevant to the fulfillment of the objectives pursued, and furthermore, all type of resources (not only conventional but also RES and DSM) could eventually participate in most of these markets.

This way, the major result should involve properly revisiting the design of the national and regional markets for the different products that are needed. These electricity-related products to be provisioned may be contracted in the long, short, and very short, terms. Therefore, we shall care about the design of markets in all these time frames. Some market types listed below may complement each other in achieving the provision of the aforementioned products. Others may be substitutes for one another, so a choice must be made between them.

Whatever the market design options adopted, they will produce efficient results if the European grid is properly developed. Indeed, the market coupling solution will generate price convergence only if the physical interconnection capacities are there. In the same way, any capacity mechanisms will become more efficient only if enough interconnection is there so that a national/regional market might rely from generation capacities located in a different geographical area. For this reason the planning and development of a well connected European grid must be defined as a necessary condition and a major priority for the successful integration of national and regional markets. This holds even more important for peripheral markets with currently low levels of interconnection.

Long term: markets in this time frame are to be focused on providing risk hedging tools to market players allowing them to stabilize the revenues to be obtained from new resources to be installed. Markets should also allow the System Operator, or system planners and authorities, to ensure the system adequacy already in the long term.

- *Long-term Capacity Remuneration Mechanisms (CRM)*: even when other markets like very long term energy ones might be a substitute for them, Capacity Remuneration Mechanisms might still be needed in the near future since promoted/launched in many national power systems in Europe. However, care should be taken with their design in our context of interest so as to: (1) properly define needs (capacity, flexible capacity, etc…); (2) allow an efficient participation of the available resources, *i.e.* RES and conventional generation, DSM, storage and integration of the use of these resources at regional-European level should be considered, and (3) ensure that they remove rather than create additional barriers to the regional market.

- *Very long-term remuneration mechanisms for renewable generation:* as renewable electricity producers become significant players in the internal energy market, support schemes developed to foster investments in immature technologies need to be reformed and become more market-based remuneration mechanisms. These remuneration mechanisms involve financing of the development of immature RES technologies and support of the limited deployment of technologies that are ready to start to be used but are still immature to compete with other (RES and conventional) generation. Given the remuneration challenge of the energy only market, the need for a long-term remuneration schemes for mature RES should be analysed as well, in analogy with the development of capacity- or flexibility mechanisms. The market design should be robust to deal with this foreseeable changing scenario.

- Very *long term energy markets:* this may probably involve the arrangement of very long term energy contracts with market agents. Analogously to the case of CRMs and RES support and remuneration mechanisms, very long term energy markets represent an option to provide those resources that are most efficient in supplying required products with stable enough revenues so as to achieve their installation and proper maintenance. The time span of these contracts should probably exceed that of current regular energy contracts: 10 to 20 to year contracts may be appropriate. According to their objective, they should be as long as necessary to provide the stability in revenues required for new generation that is needed to be installed.

- *Others:* these include:

    - long-term procurement of operation reserves. These will have to properly complement the ongoing work on Network Code on Electricity Balancing (NCEB), since according to NCEB, balancing capacity within a responsibility area should be procured (in principle) for a maximum period of one year. In case of a coordinated balancing area this period is reduced to one month. Periods longer than the above-mentioned will be subjected to regulatory approval.

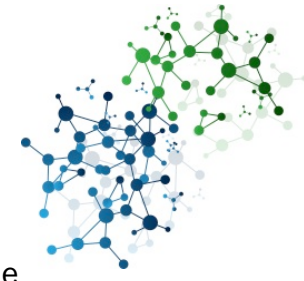
- and markets for long-term transmission capacity contracts, which may also probably have a role to play in creating a workable system. Very long term transmission capacity contracts should allow the provision of products to be contracted in the long term with agents located in any area in the system. Thus, these contracts should complement very long term energy contracts signed with RES or conventional generation (see the previous mechanisms) and make possible the integration of very long term energy or capacity markets at European level.

Short-term: market developments in this time frame should result in a "network compatible" energy dispatch that is efficient from an economic point of view. Short term markets should allow the participation of all types of resources.

• *Day-ahead and intra-day markets*: good progress in the development and implementation of day and intra-day markets is already envisaged in the context of the Target Model. However, the TM leaves a number of pending developments related to these markets. *Liquidity* is an aspect often left aside in the design of these markets. While perfectly designed, when it comes to use them, implementation is delayed for many reasons. A list of points is to be considered:

- the representation made of the network in these markets currently is not aligned with main bottlenecks existing in the grid. This should be fixed to increase the efficiency of capacity allocation;
- the timing of markets should be reconsidered in the light of the higher unpredictability of power production due to increasing penetration of RES generation. This may cause a very significant increase in balancing needs unless markets get closer to real time;
- the level of flexibility made available to agents for bid building (known as the bidding protocols) should be defined with the view to strike a balance between the flexibility and the complexity of markets. This becomes especially relevant when, due to the increasing amount of RES generation, the operation of other available resources, like conventional generation, involves a larger number of start-ups and shut-downs and much more frequent and larger changes in the output of units
- and aspects related to the participation of RES-E generators in short-term markets: if large amounts of RES are to be integrated into the system operation, these should be made in a cost-efficient way, thus enforcing their participation in short term markets.

Very short-term (real time): markets in this time frame should provide an appropriate level of flexibility in the system operation so that the system can adapt to real time



conditions in each area in an efficient way. In this respect, the Network Code on Electricity Balancing (NCEB) sets general principles to the Member States for the procurement, activation and settlement of balancing services. The Code will contribute significantly to harmonize some aspects of the balancing mechanisms nevertheless there are some aspects which are very general. Care should be taken not to introduce balancing market designs that could prevent RES generators and other resources from participating in those markets.

- In the short to very short term innovative/adapted market designs proposed in MARKET4RES aim at bringing solutions to at least two different issues: guaranteeing the provision of an increasing amount of flexibility needs and facilitating the participation of RES producers and other flexible resources in balancing services markets. For this purpose, some aspects related to balancing mechanisms must be analyzed, such as:

  - Imbalance pricing design: depending on the imbalance pricing design agents may have different incentives to deviate from their schedules. In a context of an integrated European market with high RES penetration, providing proper and non-distortive market signals to all agents is crucial to an efficient integration of RES generation.
  - Balancing responsibility of RES generators: imposing balancing responsibility on RES generators requires a proper imbalance settlement design and well-designed and functioning intraday markets in such a way these producers can modify their day-ahead schedules according to updated production forecasts;
  - Current balancing and ancillary services (voltage and frequency) market rules: gate-closures, bid durations (i.e. the time during which the generator should provide the service) and minimum bid sizes may prevent RES generators and other resources from participating in balancing services markets. Increasing market design flexibility (such as including intraday gate-closures for balancing services) may foster the participation of all potential service providers.

Q: Which regulatory actions are most important and should be prioritised?

A: The broad trends outlined by ACER in electricity wholesale markets are rightly chosen, such as market distortions induced by national capacity remuneration mechanisms, the need for greater TSO cooperation with ongoing market integration and emphasis on market designs which enable the pricing of flexibility.

We agree with ACER's emphasis to provide fit-for-purpose processes for the implementation and enforcement of market rules, in particular network codes. The project Market4RES aims to provide further input to this process and will be at ACER's disposal for further deliberations on this matter.

In this context, the following possible regulatory actions (from ACER Annex) are fully in line with the expected recommendations from the Market4RES project:

- We will place great emphasis on the need for the rapid implementation of the present electricity Target Model across all geographies and market timeframes **and commit to review the need for any changes.**
- We will undertake further analysis to develop and improve the common European balancing target model defined in the Network Code.
- We will proactively advise on the design of interventions so that the goals of security of supply and competitive markets are met as far as possible.
- We will map out a framework covering the required commercial, regulatory and standardization aspects necessary to facilitate the market in demand response.
- We will assess whether additional incentives are needed to promote necessary (but higher risk) investments with significant social benefits and, if so, how such incentives should be funded

Q. Have we identified an appropriate regulatory response?

A: In the project point of view, emphasis must be put on how to achieve progress in the roll-out of different market forms like intraday, balancing and also grid support services markets. In the ACER consultation document however, the focus seems to be rather on alleged market distortions by national RES support mechanisms, lack of balancing responsibilities and priority dispatch provisions without any further contextualisation.
We welcome ACER's emphasis on the importance of simple, market-based approaches to tackle future challenges such as remuneration for flexibility. To this end, more is needed than achieving the EU-wide target model. The Market4RES project aims to facilitate an open and transparent debate towards a revision of the target model TM post 2020, to be agreed and endorsed jointly by the regulators, European Commission, Member States, TSOs and the electricity industry.

In addition to the possible regulatory actions above mentioned, the "possible regulatory actions" (from ACER Annex) listed below are indeed relevant and appropriate. They fall however outside the main focus of the Market4RES project. The project will consider how to incorporate them into their main stream work and expected recommendations:

- We will consider whether to develop and deploy output-based incentive mechanisms to encourage efficient operations and investments by DSOs and TSOs.
- We will consider the appropriate governance arrangements for the ENTSOs.
- We will assess the appropriate level of regulatory oversight for power exchanges and other market coupling operators, and trading and capacity allocation platforms.

The following possible regulatory actions (from ACER Annex) coincide with stakeholders' expectations from MARKET4RES, although possibly outside the reach of the project:

- We will continue to identify barriers to entry in national retail markets and examine how they can be removed.

COORDINATOR

SINTEF

PARTNERS

EWEA

TECHNOFI

EPIA

FRIENDS OF THE SUPERGRID

IBERDROLA

apx

3E

CONTACT

Market4RES@sintef.no

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