

Postbus 718, 6800 AS Arnhem, The Netherlands

DATE
CONTACT
E-MAIL

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Paul-Georg Garmer
paul-georg.garmer@tennet.eu

TenneT response to the EU consultation on a new market design

Dear Sirs,

Thank you very much for giving us the opportunity to comment on the plans for the future market design for the European electricity market. TenneT is operating the transmission grids in the Netherlands and large parts in Germany. As the first real cross-border TSOs we hope to be able to support you with the insights from our daily business.

In most aspects we can strongly support the Commission's vision on the future design of the electricity market. It is absolutely crucial to develop a strong energy-only-market to be able to cope with the future challenges and to avoid costly emergency measures.

The integration of the European energy market is now entering a new era. The most important task of the years ahead will be to enable customers to take part in the market and to sell their flexibility.

Beyond that a strong energy-only-market should provide:

- Unregulated prices that reflect scarcity
- A level playing field for all technologies
- Incentives for market integration of renewable energies
- Integrated and harmonised balancing regimes with minimised entry barriers

A lot of this is very well reflected in the plans of the Commission.

However, we also want to be clear where we have concerns. The consultation asks whether the current national responsibility for system security is an obstacle to cross-border cooperation and whether a regional responsibility for system security would be better.

In our answer to question 11 we point out in detail that the existing Regional Security Coordination Initiatives have proven to be effective and efficient tools to ensure regional coordination. There have been no incidents or only inefficiencies in the last years that could have been avoided by regional responsibility for system security or by regional operational centres.

The real challenge for the regional coordination of system operations are the differing national rules, regulations and procedures. Nearly each European country has differing definitions for levels of criticality and differing rules which measures are allowed on each of these levels. To contribute to security of supply it is of highest importance to harmonise these rules and regulations. We also refer to this in TenneT's response to the consultation on risk preparedness in the area of security of electricity supply.

However, even in case this harmonisation is successfully completed we strongly recommend to maintain today's concept of "security cells". Under this concept each TSO is responsible for its own control area. Having several centres of operational competence ensures the presence of crucial local grid knowledge in the very moment when it is needed. Furthermore, having several centres of competence helps to manage the European electricity grid in real time and to have an efficient and effective grid restoration in the case of bigger incidents or emergencies.

In the case of a disturbance TSOs will be held responsible not least by national law. Therefore they need the tools to be able live up to their responsibility. Politically the responsibility for security of supply is also with the national governments. Lack of clarity on responsibilities can only be detrimental.

Yours sincerely,
TenneT TSO B.V.



Paul-Georg Garmer
Senior Manager Public Affairs

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?

The fundamental choice that was made to organise the provision of energy in Europe in a market structure has made market prices the most important steering mechanism to come to a system that is both adequate and efficient in production and consumption. In a system in which the number of participants is expected to increase sharply, prices become the most important way to coordinate behaviour towards an optimum.

In markets with a significant share of renewables electricity generation costs can become very volatile. For a large share in time there will be excess generation from RES and electricity generation costs will be low. There will, however, be some occasions when hardly any supply from intermittent sources is available and dispatchable generating units, storage facilities, demand-side-management or other flexibilities capacities are required. The specific costs for keeping these flexible units available can be very high and lead to respective price peaks in the spot market. As there is little experience with such price peaks, this may lead to limited acceptance with some political stakeholders. Cost-reflecting high-price spikes are, however, necessary to cover the risks associated with investments in the required amount of dispatchable reserves and forming the heart of an advanced energy-only market.

In a well-functioning market price differences between areas should always be a reflection of scarcity of the availability of transmission capacity between these areas. Shorter market time units allow for more temporal differentiation in market prices, thus better reflecting temporal scarcity and value of flexibility.

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?

In our view it is crucial that electricity prices reflect scarcity to trigger investment in peak generation and create an incentive for peak shaving in demand. Price caps are detrimental to good market functioning. TenneT believes that the volatility of prices will lead to the right investment signals for generation units which are flexible enough and may benefit from prices peaks (e.g. gas-fired power plants). These power plants are the back bone of the future market design in case that sun is not shining and wind is not blowing

Furthermore, we feel it is important to note that also low prices that reflect actual abundance are important to allow for efficient use, including commercial storage, of electricity generated and to prevent the necessity of high amounts of negative balancing energy to ensure system stability.

Marginal pricing for balancing energy, and admission of non-procured bids, with close to delivery gate closure times for bids of balancing bids, will let balancing energy prices better reflect actual scarcity, or non-scarcity.

In general, the level of price volatility should be left to be determined by market forces as it is the most important driver for investment in flexibility, whether from flexible generation, demand response or storage. Apart from the volatility itself it is crucial that market parties have confidence that policy makers and regulators will not intervene in future periods that show more extreme prices. The recently concluded agreement between Germany and its eleven electrical neighbours, in which price spikes are generally accepted by the decision not to impose legal price caps and in which it is agreed not to restrict cross-border trade of electricity including in times of high prices reflecting market scarcity, is a good step in the right direction and could serve as an example for other countries.

The concept of the energy-only-market logically induces phases in which there will be a scarcity of energy. To avoid unwanted load shedding during these phases Germany has decided to provide a reserve of power plants.

Please also refer to the study commissioned by TenneT that was published by E-Bridge "White Paper on a Sustainable Design of the Electricity Market"

[http://www.tennet.eu/nl/fileadmin/downloads/News/White Paper on a Sustainable Market Design 1 .pdf](http://www.tennet.eu/nl/fileadmin/downloads/News/White_Paper_on_a_Sustainable_Market_Design_1_.pdf).

This study discusses the contractual safety net.

Obviously market parties that have not anticipated volatility can run into difficulties: generators suffering from low prices and consumers from high prices. Especially for consumers it is important to become aware of their price exposure for future demand and of their own responsibility to cover such demand.

Suppliers that have a substantial share of fixed prices in their sales portfolio combined with a high share of floating prices in their sourcing portfolio can run into problems in times of scarcity. Adequate portfolio management criteria might be required.

Consistent policy with respect to the limited role of governments regarding price formation and clear communication to this end could contribute to raise such understanding. Good market functioning and competition should be the aim of policy makers and should shield consumers from inefficient cost. Special attention might be needed to shield the system from harmful effects from speculative behaviour.

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

In volumes and financial value the balancing market is not the most important market, but it is quite essential for operational security. It therefore would seem unwise to have speed

prevail over diligence. Balancing market design both nationally and cross-border should be consistent: It should provide minimized entry barriers fully exploring flexibility like large scale generation, decentral generation and demand response on all levels including storage. And it should neither nationally nor cross-border create incentives for market parties for gaming or behaviour that is detrimental to system security.

It should therefore be left to those responsible, the TSOs, to work towards harmonisation without jeopardising system security. In close cooperation with regulatory bodies and policy makers, the TSOs should create the basis for integration by harmonising key features between the different national markets. The focus of this process should be on reaching effective and efficient markets, not on speedy harmonisation for the sake of it.

The primary objective should be to harmonise those features of the balancing regime that currently disturb the level playing field:

- The imbalance settlement periods should be aligned (15 minutes)
- The gate closure times for balancing energy should be short and it should be after the gate closure for cross border intraday trading to facilitate the participation of intermittent renewables and demand side
- The market time units for cross border products should be 15 minutes

Examples for TSO cooperation are already existing (International Grid Control Cooperation platform; common procurement of Frequency Containment Reserves between D, CH, AT, NL). For acceleration of the process an aligned regulatory framework between the NRA's is obligatory. For example the experiences of the IGCC project shows, that national laws are sometimes crucial blocking issues for further development (e.g. error correction and corresponding statutory periods need to be harmonised, or at least some exclusion rights for the TSO should be in place.)

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

Intraday (ID) markets are essential for SoS in systems with a significant share of renewables generation and provide the opportunity to integrate all market players and bring together renewable volumes, flexible demand side, storages and highly flexible conventional generation. The integration of the national ID markets is one of the keys to fully integrate renewables into the market.

TSOs and power exchanges (supported by the NRAs and EC) are currently working

together in order to implement an integrated European intraday system. The design and implementation of this platform turns out to have a high complexity in terms of technology, processes and governance.

In the implementation process the project parties may benefit from the points mentioned below:

- Support of all regulators and authorities by providing quick and pragmatic approvals where required and the avoidance of individual requests / interests
- Harmonisation of ID product specifications to facilitate the coupling of national ID markets
- Closer trading to real time (e.g. 15 to 30 min)
- Availability of 15 min products in each MS and the possibility to trade them over the border

Due to the importance of the integrated ID markets it should be investigated to implement short-term solutions – where beneficial – before the EU wide platform is available. Integrated intraday markets and the respective EU wide platform will form a solid and important basis for market players and consequently for SoS. However and considering the renewable targets this will not be sufficient. To safeguard SoS within existing energy markets the use of small scale and new flexibilities have to be further facilitated.

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?

Currently the prices of the spot market are constantly low and hedging against high prices seems to be not necessary. This situation is expected to change with the decommissioning of conventional power plants as foreseen in the upcoming years. Volatility of prices will increase and the interests in long-term contracts will increase as well. Long-term contracts are instruments to mitigate the price risks in renewable dominated markets and will be automatically used if the occurrence of price peaks increases and leads to a stable environment for generators in order to invest in new units.

Nevertheless it should be left to market parties to decide how they divide the risk between the consumer and the producer. The economic life time of a power plant is substantially longer than what a customer is willing to commit as term of a procurement contract.

Investment risks in generation assets will remain substantial. This should be mirrored by the expectation of a substantial spread and healthy returns during the life time of the generation asset.

The full implication of the concept of a liberalised market has to be made clear to the consumer (large and small): the price risk for non-contracted future demand is on the consumer. Any expectation of government intervention in case of high prices on the side of the consumer has the potential of decreasing the depth of long term markets. This increases the risk for investment in power plants due to low visibility and limited possibility to hedge risk in long term market reducing the appetite for investment in generation assets.

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

The electricity bill often includes taxes and charges. A substantial part of these taxes and charges fund the subsidies to realise the renewable energy goals set by the European Commission. Taxes and charges levied on electricity are also used to cover part of the national budgets.

In this answer we will focus on charges directly related to renewable energy. The costs associated with renewable energy support schemes are charged in various ways in different member states. Typically the absolute amount differs due to different national ambitions and the allocation to various end users differs due to different allocation mechanisms.

This impacts the functioning of the market as the market price in “energy only” markets often does not internalise the capital (fixed) costs of the renewable infrastructure, which is subsidised. Hence the effectiveness of the market price signal is affected. Furthermore, the heterogeneity of recovery mechanisms in Europe implies that costs associated with the supply of renewable energy are not effectively allocated to different end users, consequently impacting and hampering the functioning of European electricity markets.

This point has been also highlighted in the CEPA report conducted for ACER as part of the work on tariff structure harmonisation. CEPA concluded the following: “Fragmented national taxation or generation support mechanisms (e.g. renewable generation subsidies or capacity remuneration schemes) for example, differ significantly between countries, and these factors arguably have a far more material influence on the investment choices of electricity generators in European electricity markets today”. Using European case studies CEPA showed evidence of distortion of the investment and operational decisions of

market participants, in particular power generators.

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

An increase in scarcity of emission allowances under the ETS is already widely recognised as a requirement. Furthermore, policy makers should be clear about other objectives than CO₂-reduction they see (e.g. reduction other emissions or reduction import dependency) to stimulate renewables and see whether an economic value can be attached to the actual contribution of renewables to reaching those objectives. Proper valuation of other objectives can help to bridge the gap and, at the same time, avoid that renewables become an objective in itself.

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?

There should be no exemptions for renewables, as they hamper the development of renewables to take up the complete role in supporting system security, which is crucial for further growth of their share. Full balance responsibility for renewables and avoidance of subsidy induced incentives to produce in times of negative prices should become standard practice.

Attention should be paid to the role of subsidies that are awarded in proportion to energy produced. Such subsidies can hamper the competitiveness of renewable energy generators both in offering ancillary services for balancing to the TSO as in competing in portfolio balancing services within the energy market, by increasing the cost of adjusting their power output. It can even lead to the aggravation of system imbalances when subsidy benefits outweigh imbalance penalties.

In addition the actual participation of renewables in the market and their responsiveness to price signals can be increased by adapting the granularity of markets (Market Time Units and Imbalance Settlement Periods) and Gate Closure Times to become more apt for the intermittent nature. A long GCT de facto represents an exclusion mechanism for renewables and demand side response.

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)?

Having in mind system stability as a primary target any future framework for renewables should bring them as closely to the market as possible: They should have the same rights and obligations as other forms of generation, e.g. balancing obligations, compliance with schedules, adherence to market prices and delivery of ancillary services.

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.)?

In the case where profiles are used to allocate the consumption of an end user to his supplier, there is no possibility for the supplier and the consumer to access the value of the flexibility. Profile based allocation should be phased out and allocation should be based on the time-of-use meter readings ("smart meter" readings). In markets where there is sufficient competition between suppliers, this will kick start innovation by suppliers, including offers for various types of time-of-use pricing contracts, in combination with offers for hard- and software to monitor and modify consumption patterns.

All generators and market participants should be fully exposed to full balance responsibility. This will be an important incentive to identify and exploit competitive sources of flexibility on the demand side. This is especially true in case a balance responsible party has a portfolio that consists of both intermittent renewable generation and a substantial sales portfolio.

To unlock flexibility at the small(er) customers, the role of the aggregator should be well-defined and well integrated in the market design. Note that an aggregator should, at all times, take care of the balance responsibility of its portfolio, meaning that an aggregator should communicate always how he affects the different balance responsible parties

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?

Since regions in Europe are running with different pace, Regional Cooperation should be handled by regional TSOs for a fast and sustainable implementation. In the last fifteen years voluntary initiatives by likeminded TSOs which simply took action have been key in promoting the integration of European electricity markets. Especially TenneT as one of the inventors of auctioning offices for market coupling like CASC and Regional Security Coordination Initiatives like TSC, has a long history in facilitating regional cooperation.

TSOs continuously strive to further increase the efficient and effective use of the European electricity infrastructure without affecting system security. As a result of close cooperation between TSOs both on regional and cross regional European level, RSCIs were established. RSCI-offices coordinate around the clock the forecasting of electrical flows in the grids for the next day and the next hours across national borders. Already today TSOs include the operational planning insights of the RSCIs in their real time operations. In the near future RSCIs with a clear governance will provide additional supportive services on the following topics: security analysis including identification and coordination of multilateral remedial actions (MRA), short and medium term adequacy forecasts, capacity calculation, outage planning coordination and improvement of grid models and delivery of common grid models in all timeframes. In the further future grid planning with a higher frequency than today's ENTSO-E's TYNDP might come into scope requiring a coordinated provision of data quality and grid models.

In short: RSCIs have proven to be important, efficient and effective to exchange information and coordinate among TSOs. They continue a steep learning curve and improve themselves continuously by using common tools and aligning and harmonizing business processes. Today the cross-border operation of the European grid is not hindered anymore by a lack of operational information, coordination or good and swift decision making. Additionally there is also no track record of incidents, emergencies or inefficiencies in the last years that have been caused by a lack of trans-border operational control. The opposite is true: The current system has been improved to the extent that it is now able to handle the complexities of the European power supply very well. Every fundamental change to this complex and sensitive system would need to have a convincing justification.

Today cross-border cooperation is hampered to a large extent by unharmonised national distributions of responsibilities and differing national rules, regulations and procedures. To enable further increased cross-border coordination of system operations the diverse national distributions of responsibilities, rules and regulations for grid operations and power markets should be harmonised to a model which is fit for the new energy world and the resulting challenges.

For example: In the Netherlands and in Germany the legal framework determines that Multilateral Remedial Actions (MRAs) are normal market-related contractual measures of the TSOs to keep the system in a stable and secure state. Only if all market-related measures (including internal and cross-border-redispatch and MRAs) are exhausted interventions in the generation are allowed. In Poland and Hungary it works the other way round: In these countries the legal framework stipulates, that generation has to be curtailed firstly before MRAs are allowed and that e.g. intervention in generation is adequate to cross-border-redispatch. (See table on national priorities for grid operations in the TSC countries attached.) This leads to discussions on who is responsible for paying the bill for the applied MRA. RSCIs like TSC have proven to establish a harmonised framework to deal with MRAs. The harmonisation of the above mentioned distribution of responsibilities rules and regulation directly benefits to the Security of Supply and contributes to the reduction of complexity of the operational Inter-TSO-processes.

To analyze the problems caused by different national distribution of responsibilities and differing national rules, regulations and procedures and to develop solutions quickly TenneT proposes to mandate TSOs to develop risk preparedness plans on a cross-border/regional level. These reports can help to develop a common cross-border understanding about the definitions of the different levels of criticality, the measures that should be implemented on each of these levels and the financial consequences of these measures. TSOs have hands-on experience in this domain. We kindly refer to TenneT's reply to the European Commission's "consultation on risk preparedness in the area of security of electricity supply" of October 6th, 2015, where we touch on our ideas in more detail.

In harmonizing rules and regulations, we strongly recommend to maintain the concept of "security cells". Under this concept each TSO is responsible for its own control area. Having several centres of operational competence ensures the presence of crucial local grid knowledge in the very moment when it is needed. The management of works in the grid requires the knowledge of the national language and the understanding of the local circumstances. Centralized institutions could only monitor and coordinate but not have the responsibility for operational decisions. Furthermore having several centres of competence helps to manage the European electricity grid in real time and to have an efficient and

effective grid restoration in the case of bigger incidents or emergencies.

Therefore the role of the RSCIs should remain focused on exchange of information, analysis and decision support. Ultimate decision making is to remain with the TSOs within a framework set by their respective regulator. This framework includes remuneration for system tasks and grid investments by national tariffs, and therefore defines responsibilities on a national level. Lack of clarity on responsibilities can only be detrimental to system security.

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?

ACER, as the Agency for the Cooperation of Energy Regulators, was established to provide a platform for regulators to overcome national gaps and establish efficient interaction. While we see NRAs work more and more together on European market integration they are at the same time in a difficult position as they also protect and reason the national interests. This is caused by economic regulation and energy policy being primarily nationally driven. It is therefore more challenging for NRAs to navigate between preserving national habits and building a bridge towards an integrated European market. In the following we mark a few areas which TenneT regards as areas where ACER is well positioned to act as a moderator and facilitator to enhance further European integration. ACER has a pivotal role when dealing with cross border projects involving several countries thereby facilitating to bridge national interests and facilitate further harmonization on the targets set by the European Commission.

TenneT shares the view of the European Commission that consumers (or pro-sumers) should be at the heart of the electricity market. ACER can support the European Commission in this respect. ACER could expand its market monitoring activities towards the integration of consumer interests e.g. by investigating whether consumer already have the possibility to change their supplier easily or by analyzing where price caps and regulation hinder full integration of retail customers in markets and how this integration could be fostered. Another interesting question for analysis could be the consequences of the non-harmonized support schemes for renewables. ACER could further analyze the differences between national regulatory regimes and which of them lead to getting sufficient investments in the grid. Their best practice analysis could suffice as a blueprint for a harmonized regulatory framework for investment incentives tailored to different geographical areas such as onshore and offshore (e.g. North Sea or a harmonized offshore Regulatory framework).

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

The European Network of Transmission System Operators brings together TSOs to cooperate and to jointly take decisions how the European energy and climate targets and the European Energy Package can be further specified and translated into network codes and binding procedures that are applicable for the TSOs. ENTSO-E was given legal mandates by the EU's Third Legislative Package for fostering the Internal Energy Market

e.g. by developing Network Codes and Guidelines. ENTSO-E shows its vision of an advanced European approach by constantly enhancing the Ten-Year Network Development Plan and adequacy forecasts. In the future ENTSO-E, as an organizational body carried by its member TSOs, will act as a coordinating entity ensuring TSOs are developing in the same direction while respecting developing at a different pace. ENTSO-E will therefore have a pivotal role in fostering common agreements, rules and methods (e.g. standards) to facilitate European harmonization. Among the topics of growing importance will be European standards for information exchange and transparency.

ENTSO-E can coordinate and support regional initiatives among progressive TSOs and Member States and can ensure that they develop in the same direction. For example currently ENTSO-E is working on the goal that every synchronized TSO becomes member of a Regional Security Coordination Initiative (RSCI).

However it should remain clear that not every cross-border activity of European TSOs has to be initiated, controlled or agreed by ENTSO-E, ACER, the European Commission or by specific regulation. In the last fifteen years voluntary initiatives of likeminded TSOs, like TSC and JAO, have been key in promoting the integration of European electricity markets. The market coupling and the regional coordination of system operations are successful examples how small groups of TSOs and countries in the field of electricity have developed efficient solutions for urgent questions by setting up specialized service companies. These solutions are later usually taken over by larger groups of countries.

As this model of TSO cooperation has proven to be successful in the electricity field it should be maintained. ENTSO-E fulfills the role to align on these activities. More legislation or ENTSO-E competences might, however, overshoot the mark and might not be effective.

While contributing to the work of ENTSO-E, member TSOs are under regulatory oversight by their respective regulators. Double regulatory oversight of the tasks delivered by this cooperation will be less efficient and will slow down the progress of further European integration.

14) What should be the future role and governance rules for distribution system operators? How should 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?

The role of distribution system operators should remain focused on efficient and secure

grid investment and maintenance. New technologies, which mainly result from ICT developments, can alter the appearance of some activities but should not alter the objective. It is crucial that distribution companies do not develop activities that can be developed by market parties. In case, due to new technologies, active load management represents an economical alternative to grid investments, this alternative should be developed. However, in this setting the DSO should be the buyer and not the seller of such services. Though postponing grid investment may save costs, always the most efficient option should be chosen. In many cases grid investments will be necessary anyhow.

Due to the surge in distributed generation voltage and load management and congestion management of distribution grids as well as transmission grids is becoming more complex. Exchange patterns with the transmission grids will become much more diverse in the future. DSOs and TSOs will have to work together more closely to allow for efficient operation of the combined system. A clear definition of the individual roles and responsibilities is needed in that context. Exchange of information on relevant parameters of the distribution grid (expected and real consumption and production) is of growing importance for the security of supply. As is the coordination of the use of sources of flexibility in the distribution grid as it can contribute to congestion management, but also to portfolio balancing of market parties and system balancing of TSOs. To ensure system stability TSOs will need full real time visibility of the entire system.

Where it comes to data handling, there is a strong case for centralising data at a national level. This would also facilitate a harmonised European development as standards and protocols can be discussed with fewer parties. For market parties it is crucial that data access is both secure and easy, this calls for an independent party.

Data handling should always be based on the tasks, roles and responsibilities of the parties in the sector (as to be seen in the Harmonised Role Model of ENTSO-E for this).

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

A European approach should focus on facilitating the exchange of best practices or support research in this field, with a special focus on efficiently unlocking the flexibility of distributed generation. Preferably, economical solutions developed by market parties in one country should be easily transferable to other countries. Furthermore, design from grid tariffs that could cause a distortion of the European level playing for generation, storage and other flexibilities should be avoided.

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

Those functions of Power Exchanges which provide Public Services should be subject to proper energy regulation under public governance. This should enable power exchanges to directly take advantage of the benefits of regulation such as reliable cost recovery, trust generated by sound monitoring, and clearly defined relations to NRAs, to a certain extent harmonised across Europe. This should ease also cooperation between PXs and mitigate the cartel suspicions that were a source of project delays in the past.

The implementation of Power Exchange regulation should be seen as an evolutionary process. The CACM Guideline already provides for a number of governance rules for Nominated Electricity Market Operators as a first step, and only after experiencing the effectiveness of these CACM provisions, further steps should be taken.

Care should be taken that regulation of those functions of Power Exchanges which provide Public Services will not hamper innovation necessary to further develop and integrate Energy Markets; also the necessary market redesign should not be obstructed by stiff regulatory rules, e.g. when a transition to shorter Market Time Units is tackled.

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

In a first step a common understanding of the term system adequacy is useful and of the different criteria for it. A common methodology can help to make the results comparable and to define common measures. But a common methodology can not enhance the power system adequacy level, because therefore the cooperation between the national markets must be closer and the frameworks for the markets have to be the same. So a harmonised methodology can only show the way, which steps have to be taken and which frameworks have to be adapted.

The developments initiated by ENTSO-E in this field, but also the close cooperation of the countries that participate in the Pentalateral Energy Forum could serve as an example of further harmonisation.

There is a strong benefit, if methods are harmonised between Member States (and other countries, e.g. Switzerland and Norway). Progress in simulation capability, different physical landscape (power dominated vs. energy dominated), differing market implementations (e.g. balancing mechanisms, DSM) however might lead to the situation of a moving target, where coordination, data gathering and validation take quite long compared to the implementation of a harmonised methodology to assess power system adequacy.

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)?

If the system adequacy methods should show the potential and the necessary alignment in the framework, the methodology should be the same for the whole ENTSO-E. But as the grid is no cooper plate studies should consider regional areas. The scope usually should be wider than national plus electrically neighbouring countries, thus a regional approach (including non-MS like Norway, Switzerland) seems appropriate most times. However, modelling of fringe countries could be relaxed. From an efficiency point of view, an EU-wide approach is presumably not the best target to aim for.

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

A direct causal chain of adequacy standards towards an efficient market is not obvious. A common understanding of different standards (e.g. because of different constraints like power vs. energy) could also yield in appropriate choices for the single market. If such differences are used to justify national capacity mechanisms it can be useful to align them. However, it should be generally accepted that the value of system adequacy can differ between countries, as a result of a different standard of living, expectations from the population and ability to deal with interruptions.

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?

Capacity mechanism, if needed at all, should be restricted to support the minimum level of capacity that is needed within the country where it is implemented because of the limitations of the import capacity. Cross border contribution to security of supply should be based on the normal procedures of market coupling and commercial cross border exchange. In times of scarcity, prices should attract full import. In essence a capacity mechanism serves as a locational price signal.

In any case the key issue when designing cross-border participation must be the minimisation of potential negative effects resulting from CRM (e.g. distortions in the EOM because a generation portfolio manager includes in the decision making penalties and/or capacity prices; hence the decision-making will not rely only on marginal costs). In the

framework of the Pentalateral Energy Forum (PLEF) the TSOs involved are studying the effects of cross-border participation to CRM where TenneT is actively involved. The results of the study will be released in Q 3 2016.

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

The argumentation to support the decision to introduce a capacity mechanism should include an elaborate description of the causes of market failure and the alternatives to eliminate these causes. Regulated prices may be one of these causes.

Also the potential changes to the balancing regime require due attention before advocating the implementation of a capacity mechanism. As the wish to implement a capacity mechanism is mainly inspired by the fear that consumers will off-take more electricity from the grid than their suppliers can make available, it means that these suppliers would have insufficiently covered for this risk of experiencing a huge imbalance. From the perspective of the supplier, the imbalance charges are ultimately his risk for non-delivery. If these imbalance charges do not reflect the full value in these times of scarcity he has insufficient interests to cover this risk. If it is chosen to implement a capacity mechanism after all, then harmonisation would be the best option.