



ASSOCIAZIONE ITALIANA DI GROSSISTI DI ENERGIA E TRADER

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<p>Response to the public consultation document on “Generation adequacy, capacity mechanisms and the internal market in electricity”</p>

GENERAL REMARKS

We welcome the opportunity to answer this consultation paper on generation adequacy, capacity mechanisms and the internal market in electricity. We certainly share the view on the importance of analysing the rationale and the potential effects of national measures aimed to achieve generation adequacy. In our opinion, this analysis should not disregard the contribution of properly designed capacity remuneration mechanisms, to address the market failures emerging in energy only-markets, and to offset the distortions and the consequent uncertainty introduced by regulatory interventions and policy-driven investments in electricity markets (renewables, efficiency...). History has showed that **energy-only markets can fail to provide system adequacy**, at least unless market power is sufficiently large to support investments in new power plants before capacity becomes scarce. Literature refers to the “missing money problem” to explain the reason why those markets fail to provide system adequacy. Oversimplifying, the flaws in the actual functioning of energy-only markets as opposed to theory can be related to the following issues:

Electricity demand rigidity: an electricity market with sufficient demand elasticity can be always fully reliable, and energy prices are supposed to determine the efficient (not necessarily reliable) level of capacity. If supply gets scarce the price goes up, until there is sufficient voluntary load reduction to absorb the scarcity and clear the market. Thereby, suppliers are only paid for the energy they produce but not for capacity. On the other hand, in real electricity markets demand can be rather rigid, and involuntary load shedding occurs when demand exceeds supply at any price level, so the market fails to clear. In such situations the focus moves from efficiency to reliability and a capacity adequacy problem emerges. The analysis of electricity markets with rigid demand shows therefore that system adequacy is a public good, and its level is determined by market power and regulatory interventions. In particular, TSOs’ actions addressed to maintain the operating reliability of the network (by contracting new additional capacity, managing of out of market operating reserves, rolling blackouts...) can depress prices during scarcity periods, generating a “missing-money problem”.

Public acceptability of energy-only market dynamics: in a pure market design, the decisions to build new capacity are made independently by the various market players. This can lead to a coordination failure, and the market can naturally evolve in boom and bust cycles, with alternating phases of over and under capacity compared to the theoretically optimal level. However, such dynamics are not always well accepted by the public opinion and, for this reason, can oblige regulatory interventions that generate a “missing-money problem”.



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During boom cycles, under-capacity should push electricity prices up due to scarcity, inducing rational suppliers to invest in additional capacity. During scarcity periods, however, market power significantly grows too, and a regulator can find very difficult to make distinctions between high prices due to abuses of market power and high prices rationally related to scarcity. As a consequence, a regulator could be persuaded to introduce specific price regulations (like price caps) which may cause a “missing-money problem”. On the other hand, during bust cycles overcapacity depresses prices and spurs market players to mothball or close their existing power plants. To avoid a decrease in system adequacy a regulator could, however, intervene, for example by signing reserve capacity contracts to avoid power plant decommissioning or mothballing. This can be another common cause of a “missing-money problem”.

For these reasons, the **energy-only markets can prove to be inefficient in coordinating the investment decisions of market players to guarantee generation adequacy, while regulators can find it difficult to properly intervene in energy market dynamics without any price distortion**. All these issues can lead to the missing money problems mentioned in the consultation paper, which are the result of the inability of energy-only markets to ensure generation adequacy in a way acceptable to consumers and regulators.

Furthermore, it should be considered that **an increase in demand flexibility and the removal of regulatory distortions are not able by themselves to support investments in new power plants before capacity becomes scarce, unless market power is sufficiently large to keep market prices at high level**. This is also a consequence of higher perceived risk by investors. The risk premium required in the power sector has increased after liberalizations as a result of higher uncertainty about the recovery of capital and fixed costs, worsened by the financial and debt crisis. Hence this element is a crucial factor to attract new investments and to pursue system adequacy.

The above mentioned uncertainty can be summarized by referring to the following elements:

1. **Price volatility intrinsic in energy-only markets:** the price spikes necessary to cover power plant capital & fixed costs are difficult to forecast, because they occur during scarcity periods lasting only a few hours every year and changing from year to year. Consequently a possibly significant share of the expected reward for power generators is highly uncertain;
2. **Politically-driven transition in the power sector:** capital & fixed costs recovery is highly influenced by the uncertainty on political and regulatory decisions affecting market conditions and the expected cash flows. The rapid and massive penetration of highly subsidized renewable energy sources is a clear example of how market prices can be significantly influenced by policy decisions, with negative outcomes on investors' confidence. Thus, all the ongoing transitions driven by out-of-market forces further exacerbate the intrinsic energy-only markets uncertainty.

By explicitly pricing the value of capacity, properly designed market-based capacity remuneration mechanisms complementary to energy-only markets could mitigate:

- **“missing-money problems”** resulting from energy-only market flaws, filling the gap between capital & fixed costs of peaking capacity and the rent resulting from energy markets;
- **uncertainty on recovery of capital & fixed costs** intrinsic in energy-only markets, and further aggravated by the current policy driven transitions (subsidies to renewables...). This could reduce investor's perceived risk, and consequently the required risk premium.

Hence, market operators won't be obliged to recover all fixed and variable costs through energy markets, since fixed costs will be at least partially recovered through a separate capacity remuneration mechanism. In this way energy markets prices would fully reflect generation costs, whereas a transparent capacity price, resulting from the match between the system adequacy demand and the capacity supply, would emerge in a dedicated market.



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For these reasons **we support the implementation at member State level of tailor-made capacity remuneration mechanisms which take in due account the specific national market conditions**. However, we also favour an adequate level of coordination and supervision at EU level, through the definition of a few common essential requirements for the evaluation of capacity mechanisms, in order to avoid the possible distortions due to major inconsistencies in the design of national support schemes. We also believe that all these interventions should be compatible and not interfere with the integration of the EU power markets as envisaged by the European Target Model.

ANSWERS

(1) Do you consider that the current market prices prevent investments in needed generation capacity?

Yes, the liberalization of electricity markets has driven to an increased uncertainty on the future level of market prices. Moreover, **the price level emerging in energy-only markets is often not able to deliver proper signals to promote sufficient investments in new generation capacity or to keep into operation the existing thermal power plants.** This situation can pose serious problems in terms of generation adequacy, since it negatively affects the sustainability of business plans of generation capacity.

As highlighted also in the general remarks, several factors should be considered when assessing the inability of the energy only-markets to deliver a proper level of investment:

- Current market designs usually create insufficient and rare peak prices, which are necessary, however, to secure investments' profitability;
- Peak prices are usually not well accepted by consumers and regulators, who tend to suspect abuses of dominant position, leading to regulatory interventions which may distort otherwise sound scarcity price signals;
- Forward markets are not designed and structured to provide adequate price signals to inform investment decisions in new capacity (due to limited time coverage of available products...);
- The growth of intermittent generation has led to an increase of electricity price volatility and, consequently, of the potential risk related to investment in the very generation capacity necessary to ensure generation adequacy;
- Uncertainties on the evolution of the relevant regulatory and policy framework and other support schemes.

For these reasons, it seems that so far energy-only markets have often lacked effectiveness in providing correct investment signals and governments, regulators and TSOs have been pushed to find solutions to solve the discrepancy between short-term energy market price signals and the time needed to develop generation projects and connection lines. **The inability of energy markets to guide the investment decisions of market operators can therefore lead to boom and bust cycles in investments in generation capacity.** This is related to possible delays in the evolution of the generation fleet subsequent to the signals coming from the market, which can lead to alternate phases of over and under capacity compared to the optimum level. Further intervention such as capacity support mechanisms can therefore become necessary to ensure generation adequacy. For example, in Italy the energy-only markets do not ensure a sufficient level of profitability to the existing thermal power plants. The current low demand level and the massive penetration of highly subsidized renewables has led to reduced operating hours of thermal power plants (in case of CCGTs approx. less than 2500 h per year on average) and to a reduction of spark spreads. Therefore, thermal power plants operators are currently facing very limited margins on variable costs, while their ability to recover fixed costs is extremely reduced. This can lead in the medium term to problems of generation adequacy, due to a reduction of the available firm capacity (mothballing or shut-down of



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thermal power plants) necessary to meet load requirements, particularly when intermittent generation is not available. This scenario may have serious consequences, since around 50% of the electricity produced in Italy is covered by CCGTs.

(2) Do you consider that support (e.g. direct financial support, priority dispatch or special network fees) for specific energy sources (renewables, coal, nuclear) undermines investments needed to ensure generation adequacy? If yes, how and to what extent?

Yes, support schemes for specific energy sources can negatively affect investments, since they can make a considerable amount of generation capacity insensitive to market price signals. Poorly designed support schemes can lead to distortions of market price formation and to investment decisions mainly based on the level of subsidy, rather than on price signals and demand/supply balance. All these issues contribute to worsening the missing money problem which endanger generation adequacy.

Notably, though aimed at achieving the European climate objectives, the massive penetration of highly subsidized renewables has negatively influenced the profitability of thermal power plants in many European markets. The support paid to a considerable amount of electricity production influences the marginal price emerging in the market, leading to a general reduction of spark spreads. Moreover, the intermittency of renewable energy sources has brought higher price volatility, more unpredictable peak prices, and to a shift of historical peaks. All these factors have induced a significant reduction of the number of operating hours of conventional power plants, which are, however, still required to provide the back-up capacity necessary to face the volatility of intermittent generation.

Therefore, thermal power plants operators face increasing problems in covering their fixed costs, whereas their margins on variable costs are very restricted. This results in a reduction of the value of existing thermal power plants, which can in turn lead to possible shut-down or mothballing of existing generation units in the absence of adequate economic drivers to support investment in new generation capacity (e.g. high prices) as well as the maintenance of the existing generation fleet. In addition, the uncertainties driven by unclear future evolution of environmental policies and regulation may create further obstacles to investments in generation.

In our opinion, the following actions should be taken at European and national level to limit the distortive effects of environmental and decarbonisation policies on generation adequacy:

- Support mechanisms should be cost-efficient and market-oriented, in order to avoid over-compensation to specific technologies and to minimize their impact on the system. Nevertheless, we believe that harmonization of electricity support schemes at European level is not a prerequisite, since the different national market conditions should be accurately reflected in order for this mechanisms to be effective;
- Support schemes should be focused on R&D and innovation, to support promising new technologies which have not yet reached competitiveness. Incentives should be gradually phased out once these technologies become competitive;
- Mature technologies should be progressively integrated in the market, being subject to the same obligations as for the other generators, though with some specific adaptations.

In conclusion, since generation adequacy in the medium/long term is in any case endangered by these support schemes, **specific interventions aimed to sustain both the profitability of existing generation capacity (where needed) and the realization of new investments to cover the expected future demand can be part of a sound and cost-effective generation adequacy policy.**



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(3) Do you consider that work on the establishment of cross-border day ahead, intraday and balancing markets will contribute to ensuring security of supply? Within what timeframe do you see this happening?

We support the integration of EU energy markets and the implementation of the electricity Target Model, together with energy efficiency measures and the development of alternative sources (like demand response) for the provision of system services. Well-functioning, competitive and integrated wholesale and balancing markets can contribute to system efficiency and cost effectiveness through transparent and reliable price signals which reflect more accurately the actual market conditions, thus attracting energy and reserves where they are needed the most.

The implementation of the rules included in the Framework Guidelines and Network Codes on capacity allocation and congestion management and on electricity balancing will drive to a more efficient use of the electricity network and to an optimal generation dispatch, also thanks to a more efficient deployment of flexibility services in Europe. In particular:

- The implementation of day-ahead market coupling and intraday cross-border electricity markets with a gate closure close to real time will increase the ability of market operators to balance their portfolios through energy markets, potentially reducing the need of real-time balancing actions by TSOs;
- The development of a cross-border balancing market could increase the efficiency in the provision of flexibility services through more coordinated operations of the European electricity network. In this respect, the creation of competitive balancing and reserve markets with an appropriate definition of products, to be shared at European level through a separate common merit order lists, will lead to an efficient and cost effective provision of this reserve energy. In this way, these services will be properly remunerated, reflecting the costs incurred by power generators in their provision.

However, **it should be taken into account that the optimization of generation dispatch through well-developed day-ahead, intra-day and balancing markets, though leading to lower costs and efficiency gains, only contributes to short term security of supply (e.g. in terms of availability of flexible resources). It doesn't seem that the remuneration level guaranteed by these markets can efficiently support generation adequacy, since all the flaws of energy-only markets (i.e. missing money, coordination failure, regulatory interventions etc.) persist.**

While the new provisions on capacity allocation and congestion management set by the European network codes will be probably in force by 2014, it is important that national governments and NRAs take appropriate actions for a swift adaptation of national market rules to these new European provisions in order to avoid undue delays in their implementation.

(4) What additional steps, if any, should be taken at European level to ensure that internal market rules fully contribute to ensuring generation adequacy and security of supply?

As mentioned above, all barriers to the full integration of European electricity markets should be removed and measures which are still to be taken at European level to achieve these objectives should be considered as a priority. Moreover, **policy and regulatory uncertainty at European level should be reduced whereas consistency among climate, environmental and energy policy objectives should be ensured.** Notably, the achievement of the European Target Model for electricity by 2014 through the entry into force of the ENTSO-E European Network Codes and a **full implementation of the provision included in the Third Energy Package** are preconditions to achieve the efficient and safe operation of the European electricity system and well-functioning and competitive wholesale markets.



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Adequate investments in the European transmission grids are also fundamental to relieve existing congestions at national and cross-border level in order to achieve a more optimal dispatching of resources located in different bidding zones. A well-developed European grid would consistently contribute to the efficiency of market outcomes, with an increase of the overall social welfare to the benefit of final customers and an improvement of security of electricity supply. Thus, we welcome the initiative taken by the European Commission with the **European infrastructure Package** as a useful instrument to incentivize new investments in the transmission network trying to overcome the major obstacles to new investments (e.g. lengthy authorization procedures etc.).

Finally, we favour the actions taken by the European Commission towards the definition of a **roadmap for the phase-out of renewables support schemes as technologies reach maturity and for their integration in the market**, to ensure the level playing field with other generation technologies. The **progressive phase-out of regulated end-user prices** should also be pursued.

(5) What additional steps could Member States take to support the effectiveness of the internal market in delivering generation adequacy?

As mentioned above, **the adaptation of national market rules and the implementation of provisions coming from European Directives and Regulations are necessary to ensure the proper functioning of the internal market**. In order for the European Target Model to be fully implemented, national market designs should be properly modified in order to be compatible with the new capacity allocation and congestion management rules. This process needs to be carried out in close cooperation with market participants and taking into account national markets' specificities, though avoiding undue delay which may jeopardize the efficient outcome of wholesale markets at European level.

In general, national authorities should also endeavour to **reduce the uncertainty related to national policies and regulations** and to ensure a **consistency with the European policies and guidelines**.

It is important that national Governments and NRAs closely monitor the **implementation of the Investment Plans elaborated by national TSOs** and take all possible actions to incentivise investments in transmission network and to remove legislative and regulatory barriers which hamper the smooth realization of infrastructure projects. Furthermore, the **full integration of RES in national electricity markets** (e.g. by taking system responsibilities in meeting scheduling nomination and balancing requirements) should be gradually pursued, in order for RES generators to actively participate in the market with the same obligations as for the other generation technologies.

Finally, as already underlined, it should be taken into account that energy-only markets, even if efficiently managed, may not be sufficient to address generation adequacy. **It is then legitimate for member States to be sure that the issue of generation adequacy is properly addressed also by dedicated capacity support mechanisms.**

(6) How should public authorities reflect the preferences of consumers in relation to security of supply? How can they reflect preferences for lower standards on the part of some consumers?

The security and availability of energy supply are of utmost importance for consumers, whereas **markets currently face considerable uncertainty on demand side response technologies and, notably, on their potential contribution to generation adequacy** (e.g. in terms of type of services and volumes) **as well as on their growth perspective**. It is also unclear what level of price signals will be required to elicit the available DSR, since these activities (e.g. active demand response) are not the core business of consumers, while demanding significant efforts (organizational, technical etc.) from their part.



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As already explained, an increase in demand response can lower the rigidity of electricity demand, moving power markets towards a more efficient situation. However, as demand cannot in any case reach a very high level of flexibility, **increased demand responsiveness on its own cannot fully solve the missing money, risk and coordination problems emerging in energy-only markets.**

In general, **we believe that demand response services can make a contribution, though not substantial, to generation adequacy and, for this reason, they should be integrated in the electricity market (e.g. balancing market) as a precondition of their inclusion within capacity support schemes.** Therefore, public authorities should primarily define a proper regulatory framework (e.g. specific dispatching rules, imbalance penalty system etc.) for their provision, also enabling electricity suppliers to offer innovative products and tariffs to final customers in order to identify their preferences on services that potentially imply the acceptance of lower supply standards.

(7) Do you consider that there is a need for review of how generation adequacy assessments are carried out in the internal market? In particular, is there a need for more in depth generation adequacy reviews at: a. National level, b. Regional Level, c. European Level

We believe that **full transparency on assumptions and figures used for generation adequacy assessment is extremely important for stakeholders interested to enhance their understanding of the analysis carried out by TSOs at national, regional and European level.** In particular, transparency on the methodology used by ENTSO-E is of utmost importance also when security of supply analyses and risk assessment are carried out within the TYNDP on the basis of the scenarios elaborated in the Scenario Analysis and Adequacy Forecast. For instance, the assumptions used to calculate the average availability of intermittent energy sources for the definition of the level of “non-usable capacity” should be made available by ENTSO-E in order for stakeholders to identify the accuracy of these estimates and their impact on the overall generation adequacy assessment.

We also support some revisions to the current methodology used for generation adequacy assessment. For example, the estimations on decommissioning of generation capacity considered in scenario A and B encompass only official notifications and national TSOs estimations based on technical considerations (e.g. the power plant lifetime). Nevertheless, as explained in the answers to the previous questions, commissioning and decommissioning decisions may be strongly influenced by the economic conditions affecting the profitability of power plants. Therefore, **it seems necessary that a proper generation adequacy assessment take into account investment and disinvestment decisions due to economic reasons besides the actions taken due to strictly technical issues.**

Furthermore, we **welcome the efforts made by ENTSO-E to review the current methodology for generation adequacy assessment with the introduction of the market modelling used in the Ten-Year network development plan.** The development of a European analysis in terms of generation adequacy, security of supply and use of interconnection capacity is greatly needed in the view of the integration of the European wholesale electricity markets. Therefore, market modelling should be exploited to introduce probabilistic assessment methods of the European power system adequacy, taking into account different possible market conditions (e.g. in terms of availability of intermittent generation) and the adequacy value of transmission capacity. The outcome of this analysis carried out at European level should be then complemented and partially reviewed through the adequacy assessments made at national level which is the most appropriate scale to factor in all the peculiarities of national systems, e.g. in terms of network topology, management etc..

The European adequacy analysis should point out borders where further interconnections are needed and/or markets to be further integrated in order to ensure generation adequacy. Thus, the identification of



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the relevant regions to be subject to a specific regional analysis should be strictly related to the critical issues resulting from the European-wide generation adequacy assessment and requiring a more in-depth evaluation at regional level.

(8) Looking forward, is the generation adequacy outlook produced by ENTSO-E sufficiently detailed? In particular,

a. Is there a need for a regional or European assessment of the availability of flexible capacity?

Yes. The massive penetration of generation from RES in many European countries makes the provision of flexibility services increasingly important to cope with the intermittency of these resources. For this reasons a regional and European assessment of the availability of flexible capacity may be a useful reference for infrastructure investment decisions and for the design of cross-border electricity markets. However, the assessment on the availability of flexible capacity should be separate from generation adequacy analysis, being them two distinct issues to be dealt with different tools (see answers to questions 17). Moreover, possible differences in the criteria used across Europe to assess the need for flexibility (e.g. due to different generation and demand patterns at national level) should be taken in due account in the analysis carried out at regional and European level.

b. Are there other areas where this generation adequacy assessment should be made more detailed?

As highlighted in the answers to the previous questions, we welcome the evolution of the methodology used by ENTSO-E in its generation adequacy assessment and notably we are in favour of:

- Full transparency on assumptions and figures used for generation adequacy assessment;
- The introduction of economic parameters in the assessment of the future level of generation capacity, given the reduced running hours and spreads of back-up generation to renewables;
- Full integration of market modelling in the generation adequacy assessment;
- A consistent application across Europe of probabilistic methodologies to assess the impact of intermittent RES.

(9) Do you consider the Electricity Security of Supply Directive to be adequate? If it should be revised, on which points?

Yes. The Directive 2005/89 EC sets the general principles which Member States have to comply with to ensure security of supply through generation adequacy, supply-demand balance and an adequate level of investment in interconnection between member States. If properly implemented, this Directive is sufficient to ensure security of electricity supply at national level, although with differentiated approaches in each member State due to the need to take into account local specificities.

A better coordination between member States in dealing with security of electricity supply may be envisaged in the future whereas it should be considered that the European network codes developed by ENTSO-E (e.g. network codes on system operations) can make a contribution to security of electricity supply through a stronger coordination between TSOs in the management of the network.

(10) Would you support the introduction of mandatory risk assessments or generation adequacy plans at national and regional level similar to those required under the Gas Security of Supply Regulation?



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No. **We believe that different approaches should be used in addressing security of supply for electricity and natural gas.** Security of electricity supply is strictly related to the short term operation of the network, notably the ability of the system to balance supply and demand in real time.

For this reason, risk assessment and, in general, a stronger regional/European coordination in addressing electricity security of supply should be carried out by ENTSO-E in its network planning activity (TYNDP and Regional Investment Plans) and in the implementation of European network codes (e.g. system operations, balancing etc.). Therefore, it is important that ENTSO-E enhances the transparency and the accuracy of its analyses in order for them to become a valuable reference for market participants and member States.

(11) Should generation adequacy standards be harmonised across the EU? What should be that standard or how could it be developed taking into account potentially diverging preference regarding security of supply?

Yes. **The European Commission should promote transparency and good practices between Member States in their assessment of generation adequacy needs in order to ensure coherency across different markets, though taking into account national specificities.**

As there are different methods and criteria used by Member States and national TSOs to assess generation adequacy needs, a stronger coordination at EU level can contribute to ensuring that the issue is coherently addressed in view of an increasingly integrated European market. Moreover, cross-border exchanges are often considered as a factor in the calculation of generation capacity needs, therefore expected cross-border contribution should be assessed on a consistent and transparent way by all member States in order to avoid possible inaccuracies (e.g. double counting etc.) in the calculation of the contribution of interconnections to generation adequacy in adjacent markets.

(12) Do you consider that capacity mechanisms should be introduced only if and when steps to improve market functioning are clearly insufficient?

In the answers to the previous questions it was highlighted that energy only markets often fail to deliver proper investment signals to ensure generation adequacy in the medium and long term. Nevertheless, we also believe that improving the functioning of wholesale electricity and balancing markets is a fundamental step to deliver energy to customers at the lowest possible costs. Furthermore, measures aimed to provide sufficient flexibility to the market, given the existing generation fleet, should be clearly distinguished from measures aimed at supporting generation adequacy, although complementary in their contribution to security of energy supply (see answer to question 17).

Therefore, **we are of the opinion that the implementation of the electricity Target Model will certainly contribute to improving the price signals provided by energy-only markets but it may not be able to guarantee that the necessary investment decisions are taken in a timely manner to ensure generation adequacy.** Furthermore, it is worth noting that Directive 2005/89 EC explicitly allows Member States to take “additional measures” to ensure the adequate amount of investments required for security of supply purposes.

Thus, we believe that capacity mechanisms and the improvement of market functioning are two complementary actions to be undertaken at the same time. A case by case evaluation on the most suitable time for the introduction of capacity mechanisms in addition to a revision of the design of wholesale energy markets is therefore the most effective way to ensure generation adequacy. Generally speaking, the dedicated mechanisms addressing generation adequacy should ensure that energy customers are securely supplied by the power system and be properly designed to provide generation adequacy at the



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lowest possible costs and to minimize the impact on energy markets, especially concerning cross-border trade.

(13) Under what circumstances would you consider market functioning to be insufficient:

a. to ensure that new flexible resources are delivered?

Market functioning is insufficient to ensure the delivery of new flexible resources when prices in energy and balancing markets are unable to reflect the costs incurred by generators for the provision of flexibility services, thus delivering weak or no investment signals to investors. This may happen if specific regulatory interventions (e.g. price caps etc.) distort price signals emerging in energy and ancillary services/balancing markets, where they exist. In this case, a proper market design (i.e. ancillary services/balancing markets) able to deliver transparent price signals reflecting the actual value of the specific services provided by generation can help address the need of new flexible resources.

b. to ensure sufficient capacity is available to meet demand on the system at times of highest system stress?

We have already expressed the reasons why energy-only markets do not deliver adequate signals for investments in the new generation capacity necessary to face the expected evolution of electricity demand, especially in peak scenarios. This situation may occur also when market prices (e.g. due to low and rare peaks) induce operators to shut down or mothball their power plants when those are still needed to ensure electricity supply in case of highest system stress.

(14) In relation to strategic reserves:

a. Do you consider that the introduction of a strategic reserve can support the transition from a fossil fuel based electricity system or during a nuclear phase out?

No. Strategic reserves do not represent an appropriate tool to address generation adequacy and to support a long term transition to new energy mixes. Strategic reserves should be activated only in extreme situations as a short term transition tool in order not to interfere with market price formation and introduce undue discrimination among different players and technologies.

In specific market conditions, the strategic reserve can be used as a measure of last resort, e.g. under extreme weather conditions when market alone is not able to ensure the security of electricity supply. The resources included in strategic reserves should then be activated only in case of physical shortage of electricity, when all other resources do not allow to meet load. If treated this way strategic reserves can have a limited disturbing effect on the internal market functioning.

b. What risks, if any, to effective competition and the functioning of the internal market do you consider being associated with the introduction of strategic reserves?

Risks related to the introduction of strategic reserves may be linked to the way those reserves are activated. If strategic reserves are activated as a last resort and the costs of their provision does not influence the market price level (i.e. they remain out of the merit order), the distortionary effect of these measures can be limited. On the contrary, the activation of strategic reserves at a very early stage, before all the available resources in the market are fully exploited, may result in cap to wholesale market prices which can negatively affect investment signals and bring about distortion to cross-border trade.



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It should be finally considered, as mentioned in the consultation document, that the introduction of strategic reserves may reinforce the position of dominant operators where they have the exclusive control of the power plants included in the strategic reserve. In that case corrective measures (e.g. market based selection of strategic reserve, transparent and fair remuneration etc.) should be taken in order to avoid possible abuses and discrimination towards some market participants.

(15) In relation to capacity markets and/or payments:

a. Which models of capacity market and /or payments do you consider to be most and least distortionary and most compatible with the effective competition and the functioning of the internal market, and why?

As highlighted above, the missing money problems emerging in energy-only markets may require the introduction of capacity remuneration mechanisms which are necessary to guarantee generation adequacy in a given market area and complementary of pure-energy markets. Therefore, **we believe that the assessment of these mechanisms should not be limited to the evaluation of their impact on the internal market but rather on their efficiency in achieving the generation adequacy objective they were set up for.** In our opinion, the cost-effectiveness of capacity support schemes, meaning their ability to ensure generation adequacy at the lowest cost, can be guaranteed through their compliance with some basic requirements. They should be non-discriminatory and market based and they should create a level playing field for the different programmable generation technologies and for demand-side management. More specifically, they should comply with the following requirements:

- **They should be market-based** since this is the best way to cover the generation adequacy obligation at the lowest cost, ensuring that the remuneration level accurately reflects the actual risk on capacity adequacy.
- **They should be non-discriminatory**, i.e. any capacity, be it new or existing generation capacity, demand response etc., and technology offering the same contribution to security of supply should be equally treated by the mechanism. This implies that all the operators guaranteeing the same contribution to generation adequacy in a given market area should be able to get the same remuneration.
- **The total revenue of a generator** resulting from energy market, the capacity mechanism, and any other regulated support scheme (e.g. feed-in tariffs, green certificates etc.) **should not provide any windfall profit and unusual return on invested capital.**

The contribution of interconnections to security of supply in a specific bidding area should be also considered. Nevertheless, given the diversity of situations in each Member States, durably limited interconnection capacity and short-term interconnection congestion risks, a pragmatic approach is to consider capacity offers at Member State level. Therefore, the impact of interconnections on generation adequacy can be factored in only by calculating adequate security margins able to reflect the possible occurrence of specific events (e.g. unplanned unavailability, short term congestions etc.). Moreover, the available cross-border capacity should be assessed in a consistent and coordinated way by neighbouring TSOs in order to avoid inconsistencies in the outcome of generation adequacy analyses made at national level.

Hence, if properly designed, capacity mechanisms would not dramatically bias the trade between member States since their impact on cross-border trading can be minimized and reduced to a negligible level if the member states comply with the mentioned requirements.



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Moreover, since member States are in charge to ensure generation adequacy in their respective markets and the tool needed to ensure generation adequacy may differ depending on the specific national market conditions, **we are in favour of the introduction of tailor-made national capacity remuneration mechanisms.**

A minimum level of harmonization should then be ensured at European level, e.g. through specific guidelines, in order to avoid distortions due to major inconsistencies among the different national support schemes.

b. Which models of capacity market and /or payments do you consider to be most compatible with ensuring flexibility in a low carbon electricity system?

Capacity remuneration mechanisms should be aimed at delivering generation adequacy term at the lowest possible cost and should be technology neutral, thus avoiding to influence the future energy mix. The choice on the best available technology compatible with the identified generation adequacy objectives should be left to the market.

c. Are there any models of capacity mechanism the introduction of which would be irreversible, or reversible only with great difficulty?

Generation adequacy is a long-term issue which should be addressed within a time-horizon compatible with investment decisions. For this reason, the objective of capacity mechanisms is to ensure a sufficiently stable remuneration to market participants as a tool to incentivize them to invest/avoid decommissioning in order to attain the needed generation adequacy level. This prevents the boom and bust cycles of investments in generation capacity.

As already explained, **capacity mechanisms are complementary to functioning wholesale energy and balancing markets since they allow to address market failures emerging in energy-only markets by setting a reliable price reference for generation capacity.** Properly designed market-based capacity support schemes should set a level of remuneration accurately reflecting and covering the generation adequacy risk arisen in a given market. Hence, this self-regulating nature of capacity mechanisms makes them consistent with a long-term integration with pure energy markets without the need of further major regulatory interventions.

To sum up, though all these mechanisms can be reverted and modified, **it is fundamental that they remain stable at least in the medium term in order to avoid uncertainties which can be burdensome to market participants while leading to problems in guaranteeing generation adequacy**, also considering that if generation adequacy were properly addressed through energy-only market, the remuneration level should automatically reduce.

(16) Which models of capacity mechanisms do you consider to have the least impact on costs for final consumers?

Market based mechanisms, if properly designed with few parameters administratively set, can create fewer costs to final customers compared to more selective models. The cost-effectiveness of the mechanism will also depend on the accuracy in setting the parameters necessary to calculate the generation adequacy needs in a mid-term horizon (e.g. four years in advance).

Nevertheless, it should be considered that **the assessment of the total costs of a capacity remuneration mechanism should take into account not only the additional costs of the mechanism itself** (e.g. the



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premium for the capacity made available) **but also the positive effects engendered at system level** (e.g. reduced energy costs). For this reason, a thorough cost-benefit analysis on the opportunity to introduce capacity mechanisms should be focused on the assessment of their ability to maximize the overall social welfare of the system rather than on the sole costs for consumer which should be also addressed through a proper redistribution of welfare at national level.

(17) To what extent do you consider capacity mechanisms could build on balancing market regimes to encourage flexibility in all its forms?

Flexibility and capacity adequacy are two fully different issues, which should be addresses with different instruments. Flexibility is quite well dealt with using existing market-oriented mechanisms like intraday markets, balancing mechanisms and reserve management.

Flexibility is the ability/availability of power plants and demand-response to ramp up and down, to compensate variation into the system. The existing capacity is able to provide flexibility, though to a different extent, with different constraints and a different level of control depending on the generation technology. In general, power plants can modulate their production if technically needed, though suffering some loss of opportunity or generation over-costs linked to the provision of these services. These costs can be fully recovered through markets (e.g. ancillary service markets etc.) if they are properly designed to reflect the actual value of the services provided by generators. The cross-border exchange of reserves can further improve the functioning of balancing market towards a more efficient system management at European level.

Furthermore, capacity mechanisms which are not technology-neutral are likely to introduce unnecessary competition distortions and are not a sustainable way to deal with a long-term issue such as generation adequacy. On the contrary, universal, market based and non-discriminatory mechanisms are the best way to ensure generation adequacy at the lowest possible costs for the society, with no competition distortions and no issues of State aid or Services of General Economic Interest.

Nevertheless, **there may be some crucial issues affecting generation adequacy in a shorter term to be promptly addressed before capacity mechanisms will be fully operational** (typically a 4 years period). In these cases short-term solutions (e.g. **transitional mechanisms**) may be envisaged to safeguard generation adequacy while heading towards the adequate well-designed capacity mechanism.

To sum up, we believe that the remuneration of flexibility should be ensured by markets where operators can be remunerated for their services at a price which transparently reflects the value of the concerned product and the cost incurred for its provision. On the contrary capacity remuneration mechanisms should be aimed at guaranteeing long-term generation adequacy at the lowest possible cost and in a technology neutral way.

(18) Should the Commission set out to provide the blueprint for an EU-wide capacity mechanism?

No. the definition of a blueprint for an EU-wide capacity mechanism does not seem feasible at this stage.

As mentioned above, we believe that capacity mechanisms should be defined at Member State level since the best tools to ensure generation adequacy may differ depending on the specific national market conditions (i.e. prevailing generation technology, RES penetration etc.). Moreover, the responsibility to ensure security of electricity supply is still on member States (e.g. according to Directive 2005/89 EC) which are fully entitled to introduce such mechanisms at national level.

Therefore, we don't think that a single mechanism applied at European level is a viable solution at this stage, taking also into account that some capacity remuneration mechanism have been already



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implemented in some member States. We favour, however of an adequate level of coordination and supervision ensured at European level, e.g. through the definition of guidelines encompassing some common basic criteria for the evaluation of capacity mechanisms to avoid possible distortions due to major inconsistencies in the design of the single national support schemes.

(19) Do you consider that the European Commission should develop detailed criteria to assess the compatibility of capacity mechanisms with the internal energy market?

We support the definition by the European Commission of a list of appropriate essential requirements which national capacity support schemes should comply with in order to ensure that their possible cross-border impact is minimized. In our opinion, few basic criteria are sufficient to ensure that capacity support schemes developed at national level are coherent and compatible with the functioning of the internal electricity market. For this reason, we wish to reiterate that a proper design of capacity mechanisms could be attained through some basic features:

- **Market based.** The mechanism should guarantee that capacity obligations are covered at the lowest costs;
- **Non-discriminatory** Any capacity (new or existing) providing the same contribution (e.g. capacity firmness etc.) to generation adequacy should have access to the mechanism and receive the same remuneration;
- **Avoiding windfall profit and or unusual return on invested capital** Overlaps between different support schemes should be avoided;
- **Inclusive of the contribution of interconnections to generation adequacy**, though taking into account adequate reliability margins which factor in all the possible contingencies (e.g. unavailability, congestions etc.) having an influence on the available cross-border capacity.

(20) Do you considered the detailed criteria set out above to be appropriate

As mentioned above, the coordination at European level of capacity remuneration mechanisms implemented at national level should be limited guidelines including few general criteria aimed to avoid distortions between member States while giving them the opportunity to tailor capacity support schemes to their national market conditions.

We believe that some of the criteria proposed by the European Commission can be misleading (e.g. criteria n. 3) since they don't reflect the needs which justify the introduction of capacity remuneration mechanisms.

(1) The necessity for a capacity mechanisms should be clearly established in the context of:

- a. The potential of the identified needs being met in the normal operation of the internal energy market, in particular:***
 - ***increased interconnection and in particular the completion of identified projects of Common interest.***

The possible increase of interconnection capacity due to the transmission projects identified within the TYNDP and selected as PCIs should be taken into account in assessing generation adequacy in the view of the implementation of a capacity mechanism. Nevertheless, as already mentioned above, generation adequacy objectives should be better addressed at national level, though taking into account the



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contribution of capacity installed in neighbouring markets but only to a limited extent, i.e. considering all the factors which can have an influence on the available cross-border capacity.

- ***steps to encourage effective competition by addressing the position of dominant undertakings.***

The need for capacity mechanisms is related to the inability of pure-energy market to guarantee generation adequacy irrespective of the level of competition in the power generation sector. Furthermore, it should be considered that the presence of operators with considerable market power can have a positive effect in supporting investments in new power plants before capacity becomes scarce.

- ***Alternative, less distortionary measures which could be taken, for example steps to improve energy efficiency or reduce electricity demand.***

We believe that demand side management and energy efficiency measures should be considered in the assessment of generation adequacy. Nevertheless, given the uncertainty on the actual contribution of non-generation technologies to system operation, it doesn't seem possible to set aside power generation from the definition of generation adequacy targets.

- ***Removing barriers to the effective participation of demand in the electricity market.***

We agree on the need to define an appropriate regulatory framework allowing the active participation of demand in the electricity market (energy and balancing market). This can be considered a precondition for the inclusion of demand response within capacity remuneration mechanisms.

(2) The effectiveness of the capacity mechanism addressing the identified market failure should be demonstrated and that it is additional to what would have occurred under normal market rules.

As mentioned above, capacity mechanisms can be introduced to address the inability of pure electricity markets to guide investment decisions, thus avoiding boom and bust cycles in investments in generation capacity. For this reason, capacity support schemes are long-term mechanisms which should be able to anticipate several years in advance, coherently with the investment implementation period (e.g. 4 years), the signals which in energy only market would emerge when generation adequacy problems are already occurring.

Therefore, this long planning period requires that such mechanisms are introduced on the basis of assumptions on generation adequacy needs in the medium-long term (e.g. 4 to 7 years) which makes particularly difficult to identify the additional effect of capacity mechanisms on top of normal market rules.

In our opinion, the opportunity to introduce capacity mechanisms should be demonstrated considering the specific market failures they are aimed to address which are strictly related to the functioning of energy-only markets. Yet, their introduction should not slow down the pace towards the implementation of the Target Model for the European electricity markets whose effects can be better evaluated once it will be implemented at European scale.

(3) The duration of the application of the capacity mechanism should be clearly limited and clearly specified.



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- a. The impact on the market of the introduction of capacity mechanisms should not make it difficult to reverse that decision in the future.*
- b. The necessity of retaining reinstating a capacity mechanism should be subject to review.*

Generation adequacy is a long-term issue to be addressed by long-term market-based mechanisms able to guarantee an adequate level of new investments (or preservation of existing capacity) and to complement the correct functioning wholesale energy markets. The medium-long period covered by such mechanisms requires that stability of the regulatory framework is ensured in order to avoid sudden changes of the conditions affecting the expected investment remuneration after the concerned operator has taken its investment decision.

Policy and regulatory uncertainties can create major impediments to long-term investments, preventing wholesale energy markets and capacity mechanisms from providing the correct outcome in terms of generation adequacy.

Moreover, capacity mechanisms should be properly designed in order to reflect the risk related to capacity adequacy in a certain market and to provide low price signals when generation adequacy is not in danger in the medium-long term. Unexpected changes in the regulatory framework should then be avoided and are not required with these self-regulating mechanisms which should not be considered as subsidies.

- (4) Any capacity mechanism should be open to electricity undertakings operating in other Member States, to the extent they are able to make the electricity available in markets to which the capacity mechanism is established.*

As already highlighted, the possible contribution of the capacity installed in other Member States to generation adequacy and the subsequent inclusion within a national scheme of electricity undertakings operating abroad should be carefully assessed. Notably, the level of uncertainty related to the availability of interconnectors and the specific market conditions affecting generation adequacy at national level makes it advisable to consider capacity offers at member State level.

- (5) Any capacity mechanism should not act as a barrier to cross border trade or competition in the internal market by*

a. artificially altering trade flows or the location of production, in particular by:

- restricting the ability of electricity undertakings in the Member State to sell their electricity to customers elsewhere in the internal market, (i.e. capacity physically located in a Member State should not be reserved for that Member State).*
- distorting the commercial behaviour of generators in the day ahead and intraday markets.*
- distorting investment signals in the internal market leading to inefficient locational choices.*
- distorting investment signals in the internal market leading to the displacement of new investment from one Member State to another.*

Capacity mechanisms should be designed in order to ensure the efficient location of resources (generation and demand response) while reducing to a minimum the distortive effects on market prices due to possible changes in the commercial behaviour of generators. Furthermore, a minimum level of coordination between member States introducing capacity mechanisms is advisable in order guarantee that generation adequacy is achieved at the lowest possible cost.



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We wish to highlight that the integration of wholesale electricity markets has to be pursued along with capacity mechanisms, which are complementary to energy-only markets, in order to increase the opportunities for market operators in the framework of a more optimized management of the electricity system at European level. It should also be considered that the obligation to locate generation capacity in a specific bidding zone (and possibly the obligation to offer energy in the energy market) does not hamper the provision of electricity across the border through the implementation of market coupling and cross-border continuous trading.

b. distorting dynamic incentives/crowding out;

- ***The incentive on consumers or generators to respond to high prices at periods of scarce capacity should not be diminished.***
- ***The mechanism should not undermine incentives on the electricity market to deploy new techniques for demand reduction or electricity storage and generation.***

Capacity mechanisms are aimed to

c. Creating market power or exclusionary practices;

- ***The mechanism should not strengthen or maintain the market power of incumbent firms.***
- ***The mechanism should not act to maintain inefficient market structures or undertakings, acting to deter new entry.***

We agree on the need for capacity mechanisms to be technology neutral, ensuring equal treatment to any capacity offering the same contribution to security of supply and avoiding any special treatment of specific generation technologies which may favour one single or few market players.

(6) To be non-discriminatory a capacity mechanisms should

- a. be allocated after an open competitive bidding process.***
- b. allow demand response and energy efficiency solutions to bid into capacity markets on an equal basis to generation.***

We support market-based mechanisms where capacity price is determined in a competitive and transparent way. Market participants providing demand response solutions should be allowed to bid into capacity markets on an equal basis to generation provided that they are able to provide the services needed by the system within a well-defined regulatory framework (e.g. dispatching rules etc.). Furthermore, energy efficiency is a permanent reduction of electricity demand rather than a service, such as demand response, which can be potentially dispatched and therefore it should be factored in to reduce the capacity need of a system (demand side).

(7) Not be confined to any particular generation technology, i.e. being tech. neutral (insofar as the mechanism is directed towards security of supply concerns – this may not apply if other objectives are also being pursued).

Besides what already mentioned before, we wish to reiterate that the need for flexibility should be better addressed through a proper design of energy (e.g. intraday) and balancing markets, rather than capacity mechanisms which are aimed at tackling generation adequacy issues.



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(8) Capacity mechanism should be at least cost:

- a. The direct costs imposed on suppliers or others electricity undertakings must be kept to the minimum necessary.**
- b. Persons providing capacity under the obligation must not be overcompensated.**
- c. Any selection process in the mechanism should be conducted in a transparent, open and non-discriminatory way which is market based.**
- d. The duration of any compensation to generators under the mechanism should be clearly justified.**

If properly designed, capacity support schemes should not trigger overcompensation to market participants whereas it is important that this compensation be part of a stable regulatory framework in order to avoid uncertainties which can undermine the effectiveness of such mechanisms.

(9) Costs associated with capacity mechanisms should be allocated to the beneficiaries of secure energy supply with different classes of consumers being treated in a non-discriminatory way.

We agree with this principle.

a) Should any criteria be added to this list?

No, we believe that the number of criteria should be minimized.

b) Which, if any, criteria should be given most weight?

See answer to question 19

Thanks and regards,



Paolo Ghislandi
(Secretary-General)