

## **Public consultation: generation adequacy, capacity mechanisms and the internal market in electricity**

### **Main messages:**

- Sufficient generation capacity is foreseen to be in place in Europe until 2020, according to most scenarios.
- Generation adequacy assessments to determine if the existing capacity can be made available where and when it is needed – or if new capacity is required – should be carried out in the wider context of system adequacy.
- Member States should deploy flexibility resources in their own territories, according to national strategies, based on guidelines to be developed by the European Commission. These strategies should be integrated in future generation adequacy assessments. All the flexibility capabilities deployed should be properly taken into account before generation adequacy is estimated.
- Generation adequacy assessments should be further harmonised across Europe; they should realistically consider the contribution made by photovoltaics and the other RES to system adequacy; they should take into account the progressive integration of the internal market, the legally binding 2020 targets and the 2050 political goals for decarbonisation.
- Currently several design elements affect market prices, seemingly reducing the incentives within the energy market to invest in new generation and deliver the necessary capacity. The role of these elements should be profoundly reconsidered, as far as they do not support the defined decarbonisation policy goals or address other proven energy market failures.
- The remuneration of capacity should be introduced only when duly justified, due to the distortion potential of such mechanisms on the energy market. Mechanisms should be reversible in order to avoid any long term lock-in effects.
- Capacity remuneration should be made conditional on the previous exhaustion of all flexibility capabilities; it should be coordinated across Europe according to future Commission guidelines, so as not to jeopardise the internal market; it should be based on competitive awarding procedures; technology choices should be aimed at minimising CO<sub>2</sub> emissions – compatibly with the generation adequacy role of the plants.
- Maintaining a strategic reserve of generating plants is a way to support the transition towards a decarbonised energy system. This option should be considered before adding new generation, so as to avoid the risk of stranded investments.

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## *I Energy markets and investments in generation capacity*

At the European level, sufficient generation capacity is currently in place. This will be the case also in until 2020, according to most scenarios. The question that needs immediate answer is, however, whether the necessary capacity can be made available where and when it is needed. If in the future new generation capacity was needed for system adequacy, would the current design of the energy market be able to deliver it? At present several design elements affect market prices, seemingly playing a role in reducing the incentives within the energy market to invest in new generation. The role of these elements should be profoundly reconsidered, as far as they do not support the defined decarbonisation policy goals or address other proven energy market failures. The necessary preliminary step in this exercise is identifying in an optimised way the system needs for future capacity in order to ensure system adequacy (see reply 3 and below).

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

Some elements affecting the electricity prices seem to be currently reducing the necessary incentives for the energy only market to cover the residual load needs with flexible power plants. These factors include:

- Spot market price caps on the wholesale market
- Regulated retail market prices with annual metering and billing, not allowing for generation costs to be passed on to final consumers at all times
- The presence on the market of baseload plants, whose output is not flexible
- A price tag on CO<sub>2</sub> lower than the one needed to incentivise investments in flexible fossil fuels

Power demand in the European Union has been stagnating or falling since 2008. In 2011, the demand dropped in comparison with 2010. From 2000 to 2011, the EU power demand grew in total 8.6 %, or some 240 GWh. At the same time, the EU installed generation capacity grew much faster, also on the basis of pre-crisis forecasts. About 223.1 GW net were installed between 2000 and 2011 (out of which 116 GW of net gas installations). As a consequence, several countries (and Europe in general, if there was a fully integrated internal market) are going through a period of overcapacity in power generation (see for instance the decreasing number of some CCGT plants' running hours).<sup>1</sup> Furthermore, according to ENTSO-E that the needs of generation adequacy till 2020 – also in terms of additional capacity – will be covered. This would happen, according to the SO&AF, both in the case of the bottom-up scenario, based on the TSOs' best estimates, and in the top-down EU 2020 scenario, based on the achievement of the 20-20-20 targets.<sup>2</sup>

Whilst generation adequacy in Europe is likely to be provided until 2020, the current regulatory framework has so far made it difficult to determine whether the energy markets are able to deliver the right investment signals for all generation capacity needs. Price increases have often been evaluated as not being enough in quantity (time) and level to fully pay back the investment to be made in new power plants. Several design issues contribute to undermining the full internalisation of price signals into the investment needs for generation adequacy.

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<sup>1</sup> EURELECTRIC, *Power Statistics and Trends*, p. 8 and 9.

<sup>2</sup> ENTSO-E, *Scenario Outlook and Adequacy Forecast*, p. 8 and following. The only scenario where some

Spot market price caps are typically a way to limit the internalisation of price signals, directly on the wholesale market. On the retail market, consumers do not have full visibility on and can consequently react to the upward and downward movements of the wholesale electricity prices, due to the use of regulated prices with annual metering and billing. The lack of substitutes for electricity and the perceived potentially huge economic and social costs of shortages and blackouts have so far made it difficult to put a price tag on the extreme effects of power scarcity. Certain reactions to system security concerns limit the role of markets in ensuring generation adequacy. The current presence of baseload plants – whose output is not flexible – is a deterrent to invest on flexible power plants. The remuneration potential of more flexible plants is currently diminished by the number of hours in which bulk generation needs to stay on the market. Notwithstanding past installations in gas power plants, current CO<sub>2</sub> prices are too low to incentivise the investment in new flexible fossil fuel generation.

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?

As mentioned in question 1, the current system design will most likely ensure that the need for investments in generation adequacy until the end of this decade is covered.<sup>3</sup> Current design elements of the energy market, however, are expected not to play in favour of future investments ensuring generation adequacy.

In addition, every type of support granted to specific energy sources is likely to have an effect on the price needed to pass on the signals of investment needs. At the same time, policy objectives triggering a shift or a change in an existing system cannot usually be taken up by market means only. In this sense, the decarbonisation policy for the power sector (and of the whole European economy) requires the development of photovoltaics and other variable renewable energy sources. In order to fulfil the decarbonisation aims as cost-effectively as possible, it is crucial that, bar the support needed to meet the policy goals, power markets are put in the conditions to work as efficiently as possible. Support not aimed at fulfilling the renewable energy and decarbonisation policy goals or addressing other specific and proven energy market failures should therefore be profoundly reconsidered. As a useful intermediary step, any form of support should be transparent at all the levels where prices are determined.

## ***II Establishing a flexible internal energy market***

The system needs for generation adequacy should be assessed carefully, in the wider context of system adequacy. All flexibility capabilities in the system should be part of the system adequacy assessment and taken into account before generation adequacy is estimated. Flexibility is the crucial feature of the future RES and electricity intensive energy system. Member States should enable the full exploitation of this characteristic in the internal market, by ensuring that flexibility resources can be effectively deployed in their own territories. This will be done according to strategies prepared and implemented at national level, based on guidelines to be developed by the European Commission. This would reduce as much as possible EU policy and regulatory uncertainty and ensure

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<sup>3</sup> ENTSO-E, *ibid.*

the consistency among climate, environmental and energy policy objectives and associated tools, taking into account the investor time horizon.

- 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?

Yes, the establishment of cross-border and regionally integrated day ahead, intraday and balancing markets will contribute to ensuring security of supply, since demand and supply will be matched on a cross-border scale at all time frames (IEM Communication, p. 7). This is a crucial feature for the 2014 completion of the internal energy market and the end of energy isolation (deletion of the energy islands), due to be finalised in 2015. In this context, it is crucial that the energy infrastructure package be fully and rapidly implemented, so as to reduce the risk of not meeting the target.

The establishment of such markets should be part of a more general effort to make the system more flexible. Flexibility is the comprehensive framework within which the need for generation adequacy has to be assessed. Optimising the use of infrastructure, enlarging balancing areas and investing in additional infrastructure where needed are means to increase a system's flexibility. Flexibility can be brought to the system also thanks to an optimised form of self-consumption, storage and load management.<sup>4</sup> Fully tapping into the potential of these means is the way to maximise the adequacy return on each unit of generation already existing in the system. Flexibility will be further analysed in the next replies.

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

Flexibility is the key requirement to plan and operate efficiently the power system with a large share of variable RES. It represents the capability of the power system to maintain the security of supply when rapid changes occur in production and / or demand. Flexibility will be the key parameter of the future power system and is provided mostly by four categories of assets: interconnections, storage, DSM and flexible generation.<sup>5</sup>

A strategic view on flexibility is much needed for both investors and final consumers in order to limit as much as possible regulatory uncertainty and ferry the current system towards the fulfilment of the EU climate and energy mid- and long term goals. The deployment of flexibility assets in the IEM should be based on national strategies to increase the overall system flexibility, which must be developed in each Member State together with the completion of the internal market and the deletion of electricity islands. These national strategies should be based on guidelines developed by the European Commission. Such European guidelines would ensure that strategies are developed with an EU mindset / perspective. Needs and measures for flexibility cannot be taken in isolation, in a fully established and interconnected internal market. On the contrary, this framework should be perfectly integrated in the interconnected internal market and aimed at unleashing all its potential

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<sup>4</sup> ACER, *Opinion on the European Ten-Year Network Development Plan 2012*, 2012, p. 10.

<sup>5</sup> International Energy Agency, *Harnessing variable renewables – A Guide to the Balancing Challenge*, 2011.

benefits, including crucially cost control.<sup>6</sup> In this sense, the right balance between demand- and supply-side flexibility resources will be crucial. Flexibility measures need to be analysed coherently with a medium- to long-term vision – embracing the EU decarbonisation goals – and ranked accordingly. Once defined, the appropriate mix of flexibility measures should be coupled with a clear regulatory and economic enabling framework established by regulators.

Such strategies have to be put forward swiftly and efficiently. This is why EPIA proposes a set of measures, which can pave the way for or provide flexibility results quickly and at a limited cost. These measures contribute to building up flexibility with a minimum or relatively low need for new hardware deployment. They should be put in place as early as possible, in line with the principle of subsidiarity. In particular, and following a stepwise approach:

- A. Governments should ensure that a proper framework allowing for an optimised form of local (e.g. in the case of rental or neighbourhoods) or self-consumption is in place.
- B. Within the same timeframe, the potential for storage deployment and demand side management should be assessed by Member States.
- C. An adequate deployment of storage and demand side management needs to be promoted and at national and regional level within an EU framework, which should include the implementation of the Energy Efficiency Directive.
- D. Aggregation frameworks both for decentralised production and for consumption should be put in place at national and regional level.

Crucially, flexibility needs enablers, in order to provide both short- and long-term solutions. Several of these enablers are already enshrined in the rationale of EU legislation. Their swift implementation, in line with appropriate characteristics, would avoid current and future costs. A dynamic price signal, one of the key accomplishments of a liberalised market, will be pivotal in encouraging flexibility. Smart meters are fundamental to exchange such signals with the consumer level. The deployment of smart meters is the responsibility of Member States on the basis of a cost-benefit analysis.<sup>7</sup> The functionalities of smart meters need to be implemented in a cost-effective way. Therefore, standards should specify appropriate functionalities on import and export of electricity and reactive metering, as well as on a standardised direct interface between the meter and PV local generation systems, ensuring non discriminatory access to the meter for various types of appliances. Such standards would be aimed both at avoiding retrofitting and at limiting incompatibilities / variance-induced costs. In the same thrift-oriented spirit, future communication protocols should remain open and be established at the EU level.

A system's adequacy and the way it is allowed to exploit its intrinsic flexibility characteristics are not only based on its resource adequacy: there are also system quality parameters that contribute to its overall functioning. It is important that the transition to a decarbonised and more decentralised EU power system be complemented by a revision of the ancillary services framework. This would define the technologies that will provide these services, on a cost-effective basis and according to their capabilities. Furthermore, an optimal approach for the remuneration of network services should be implemented.

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<sup>6</sup>Size increase – including of balancing areas – is a key flexibility factor. International Energy Agency, *Ibid* and EPIA, *Connecting the Sun*, 2012.

<sup>7</sup> Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning *common rules for the internal market in electricity* and repealing Directive 2003/54/EC, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0072:en:NOT>

- 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?

No opinion.

### **III Assessing generation adequacy**

The assessment of generation adequacy should be further harmonised across Europe and take into account the contribution made by photovoltaics and the other renewable energy sources to system adequacy. TSOs should produce generation assessments where all flexibility resources that could contribute to system adequacy are assessed before evaluating the adequacy of generation. A system adequacy assessment based on market studies should progressively complement the deterministic assessment carried out by TSOs. All assessments should properly take into account the progressive integration of the internal market, the legally binding 2020 targets and the 2050 political goals for decarbonisation, as well as future flexibility strategies – which EPIA proposes. Crucially, the existence of the Electricity Coordination Group should be enshrined in a modified Electricity Security of Supply Directive. As in the Gas Security of Supply Regulation, the group should open its doors to industry representatives and information regarding security of supply should be circulated within the group.

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

Currently, the data collected by TSOs are used to produce generation adequacy assessments at national level, regional adequacy forecasts and ENTSO-E's Scenario Outlook and Adequacy Forecast (SO&AF). These data and the way national generation adequacy is assessed are not harmonised across Europe.<sup>8</sup> Furthermore, the methodological approaches adopted by the TSOs and integrated by ENTSO-E often do not take into account the contribution towards system adequacy made by technologies that have been growing in recent times, in particular photovoltaics and wind. Some crucial components of system adequacy, including load management and storage (e.g. pumped hydro), are not taken into account by TSOs in a standardised way across Europe and at times it is not clear exactly how they are considered.<sup>9</sup> The estimated deployment of interconnectors is aligned with

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<sup>8</sup> ACER, *ibid.*, p. 7.

<sup>9</sup> ENTSO-E, *SO&AF*, p. 63.

the TYNDP, but the transmission capacity is evaluated through the SITC methodology<sup>10</sup>, which has not been designed with the purpose to capture the real electricity flows in the network.

EPIA therefore believes that a comprehensive, scenario-based assessment of generation adequacy should be conducted yearly by each TSO and communicated to the Electricity Coordination Group. Such assessments should be among the deliverables of the national flexibility strategies, implemented at national level on the basis of European Commission guidelines (see reply to questions 4 and 5). As such, the assessing methodology should be aligned, according to instructions to be given by ENTSO-E and based on the accepted EU legal targets (20-20-20 targets) and political goals (2050 decarbonisation). In particular, ENTSO-E's guidelines should:

- A. Develop a credible common methodology to assess the contribution to system adequacy of PV and other variable RES.
- B. Properly take into account all flexibility resources that could contribute to system adequacy before assessing generation adequacy. This analysis should take into account forecasts drawn from the national flexibility strategies on: storage, demand side management and interconnection. In particular, the assessment on interconnections should foresee flow patterns (including closures) due to economic reasons.
- C. Progressively take into account the enlargement of the areas where system adequacy can be ensured thanks to the advancing of the internal market integration process.

A fundamental precondition for an accurate assessment of the available flexible capacity is that the assessment process be totally transparent and immediately accessible. The ENTSO-E list of assessment criteria has to be publicly discussed and detailed, before the analysis is made. This would make forecasts even more reliable, thanks to a closer integration of data sets, as well as understandable, thanks to the full disclosure of a common methodology.

The assessments made by the relevant parties at national level, should then be gathered by ENTSO-E so as to be coordinated and optimised in a renewed flexibility / generation adequacy outlook. The data and adequacy assessment conducted at TSO level should be optimised at European level as much as possible – including further developing the interactions of the various systems across the internal market – in order to avoid overlaps in planning and costs towards 2020 and 2050. At all steps of the process, the relevant stakeholders should be consulted and integrated.

The TSO-based exercise currently conducted by ENTSO-E should be progressively complemented within the SO&AF itself by an EU-based adequacy assessment, built on a modelling approach. This new modelling approach should rest on two pillars: market and network. The model would use historical data and probabilistic market and network studies in order to assess the adequacy of the system. Simulations will show the potential power flows in the system in a large number of possible market situations. This will help identify where the system adequacy is at stake. These simulations will fully take into account the contribution to flows made by new generation, load development and, more in general, flexibility means. A model based on similar principles is already used for the TYNDP. Indeed, a full exchange of data between the TYNDP and the adequacy part of the model – to be published in the SO&AF – should be carried out. As for the TSOs assessments, the methodology of this new adequacy method needs to be discussed in a transparent process, where the interested stakeholders can contribute to defining the model.

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<sup>10</sup> ENTSO-E, *SO&AF*, p. 25.

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

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?

The principles underpinning the 2006 Directive on the Security of Supply for electricity are crucial. As mentioned in art. 1, adequate generation capacity and demand/supply balance need to be coupled with appropriate levels of interconnection.

In this sense, the provisions stemming from it need to be aligned both with the level of ambition enshrined in the 2007 climate and energy package and with the 2050 decarbonisation goals for Europe. In particular:

- The provisions regarding supply and demand balance (art. 5) need to explicitly promote flexibility measures for the system. The future balance between demand and supply will need to take into account the measures comprised in the national flexibility strategies (see replies 4 and 5). Investments in new generation capacities should be considered only when the other flexibility measures have been exhausted.
- Encourage further cost-effective network investments (art. 6) by:
  - Ensuring that grid operators acquire visibility and controllability on the network, so that they can plan their investment.
  - Ensuring a proper remuneration of investments for system operators, both at transmission and at distribution level.
  - Implementing provisions on infrastructures – be they enshrined in EU legislation or not – allowing for a more interconnected and more flexible power systems.
- Enshrining in legislation the existence of the Electricity Coordination Group, in parallel with the Gas Coordination Group established in the Gas SoS Regulation. In particular – and similarly to the gas one – the Electricity Coordination Group should:
  - Open its participation to representative bodies of the industries concerned.
  - Share the information received during the meetings, while preserving the confidentiality of commercially sensitive information.
  - Facilitate the exchange of information and cooperation regarding the cross-border impact of flexibility measures taken by the Member States.
  - Define its competencies and issues of potential interest.

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 preferences regarding security of supply?

Adequacy assessment methods should be aligned across the EU and applied to the internal market. The alignment is a part of the accomplishment of a fully interconnected internal market for electricity, since market actors would more easily participate in balancing wider, cross-border areas by using the same means. Diverging preferences in terms of security of supply are yet another factor pleading in favour of enlarging as much as possible the balancing areas and applying the same standard to the same market. For example, ENTSO-E shows that there are countries where the



generation adequacy standards are lower than in other – and even negative in certain cases. Generation adequacy is then compensated by flexibility means outside the country, but in the same market.

#### **IV Ensuring generation adequacy in Europe**

Capacity remuneration mechanisms take place outside the energy market and are prone to further distort its functioning. Remuneration of capacity should therefore be carefully considered and introduced only when justified. The determination of need should take fully into account the assessment described in Section III. It should also be conditional to the previous exhaustion of all flexibility capabilities. Maintaining a strategic reserve of generating plants is a way to support the transition towards a decarbonised energy system. This option should be considered before adding new generation, so as to avoid the risk of stranded investments. It is important that the strategic reserves' needs be assessed periodically and often, so as to avoid the emergence of distortions and ensure that the capacity is always aligned with system requirements. The way strategic reserves are put in place should not jeopardise the achievement of the internal market, nor the unbundling regime created by the third energy package. If new and additional capacity is strictly needed, EPIA does not favour one particular remuneration arrangement, but maintains that any mechanism should be reversible. This should enable the adaptation to future technological and economic development, namely in the fields of flexibility services and renewable energy. The remuneration should be coordinated across Member States according to future Commission guidelines and conceived in a way that ensures competitiveness, so as to avoid further market distortions. Furthermore, the technology choice of new plants and strategic reserves should minimise their CO<sub>2</sub> emissions – compatibly with their generation adequacy role.

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

A remuneration of capacity should be introduced only after all steps to improve market functioning have been made. Also, if remuneration schemes are introduced, they should prioritise emissions-free options like demand-side management, grid expansions, storage and flexible carbon-free plants over the construction of new fossil power generation that could create a CO<sub>2</sub>-lock-in. To briefly sum up the steps mentioned in the previous replies:

- a) The flexibility of the systems should be assessed at Member State level, based on a common methodology, to be developed in line with the Commission's guidelines.
- b) Member States should put in place all appropriate measures to ensure flexibility to the system.
- c) ENTSO-E should integrate the results of the Member State level analysis, as well as a full consideration of their flexibility strategies, in its system adequacy forecast. All measures to maximise flexibility should be taken into account before forecasting the remaining needs for generation adequacy.

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

- a. to ensure that new flexible resources are delivered?

The current regulatory and market frameworks have not so far been able to promote a full range of flexibility measures. Regulatory and technical barriers (e.g. regulated retail prices, wholesale price caps...) contribute to jeopardising the diffusion of flexibility resources, such as DSM. Spot markets for the power sector were first studied in order to deliver incentives for demand side management – typically a flexibility resource. However, the price signals are not always strong enough to overcome the initial investment costs needed to create the preconditions for certain flexibility resources to operate, let alone regulatory barriers. Since flexibility needs in the power system are growing, regulatory, technical and market conditions need to be aligned to deliver forward-looking solutions.

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

The current regulatory framework of the energy market has so far made it difficult to determine whether the market itself is able to deliver the right investment signals for all generation capacity needs. This does not mean that the sufficient capacity is not already in the system, especially if we consider the existing fleet and the RES deployment that must take place in the coming decades in order to reach the decarbonisation of the power sector.

**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?**

If and where shortages of capacity are imminent, maintaining a strategic reserve of generating plants is a way to support the transition towards a decarbonised energy system. This has been demonstrated in some Member States' experiences, such as the Swedish one. It is important that the strategic reserves' need be assessed periodically and often, so as to ensure that the capacity is always aligned with the needs of the system.

Tenders for Targeted Resources (TTR) are an efficient way to ensure that existing capacities are kept online and produce when needed. Potentially this option presents lower costs than building new capacity, since in the majority of the cases the investment for the power plants has already been written off. In this case, adequacy would be ensured to the system without investment costs.<sup>11</sup> This option needs to be coupled with a maximum level of other flexibility measures, in order to limit the use of strategic reserves. Resources need to be ranked and selected on the basis of technical thresholds, with the ones ensuring the fastest ramp up being taken first. *Ceteris paribus*, CO2 emissions should also be a criterion.

**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?**

The electricity-only market would be only minimally affected by a careful introduction of strategic reserves. Strategic reserves – their size and their utilization rate – are meant to support the transition towards a non-fossil based energy system: they are therefore inherently transitory, and should progressively be replaced with the deployment of other flexibility assets in the system. Most

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<sup>11</sup> ECOFYS, *Necessity of and Design Options for a Capacity Mechanism for Germany – Interim Report* (2011); on the other hand, see UK capacity mechanisms impact assessment <http://www.decc.gov.uk/assets/decc/11/consultation/cap-mech/3883-capacity-mechanism-consultation-impact-assessment.pdf>

importantly, such strategic reserves should not hamper the achievement of the internal market, nor should they jeopardise the unbundling regime created by the third energy package

Tenders for targeted reserves should be organised in a totally competitive and transparent way, so as to ensure that market principles are abided by in those circumstances. The need for adequacy should be adequately assessed for each time period (e.g.: yearly) and plants ranked for their entrance in the Reserve, so as to avoid the slippery slope risk.<sup>12</sup>

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

In general, capacity remuneration mechanisms establish incentives for the installation of new capacity that are additional to the functioning of the energy market. It is important to ensure that any type of mechanisms deemed necessary avoid or minimise distortions in energy markets, including lock-in situations. Such situations are mostly due to the lifetime of a power plant and the time that is needed to pay back an investment, except in cases of extremely high remuneration per unit of power needed.

Also, the introduction of capacity mechanisms could create political and economic path-dependencies, leading to the continued construction of fossil power generation that may not be in line with the European decarbonisation objectives.

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

Design (for each type of mechanism) and the national / regional market conditions are key determinants of system costs. Within each and every capacity remuneration scheme there are variables that make them more or less costly. A checklist needs to be filled in when thinking about capacity remuneration mechanisms:

- Is flexible generation strictly necessary, meaning that the full potential of all other flexibility resources has been exploited at least until these can be integrated in the system without creating costs that are higher than the benefits, in the long run?
- Are new investments strictly necessary? Meaning that there is either a need for new plants or for retrofitting existing plants (e.g. in the case of hydro power plants).
- Are power output needs quantifiable?

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<sup>12</sup> DECC, *Impact Assessment: Electricity Market Reform – Capacity Mechanism*, <http://www.decc.gov.uk/assets/decc/11/consultation/cap-mech/3883-capacity-mechanism-consultation-impact-assessment.pdf>

EPIA does not favour one particular remuneration arrangement. The remuneration should be coordinated across Member States while fully respecting the internal market completion. It should be based on competitive awarding procedures, so as to limit market distortions while maintaining system flexibility and its resources. Furthermore, new plants should minimise their CO<sub>2</sub> emissions – compatibly with their generation adequacy role. To avoid lock-in effects, any mechanism should be designed to be easily reversible.

It should be borne in mind that the impact of power prices on the final consumers due to these investments would be compensated where the reductions on the wholesale market operated by the presence of generation with close-to-zero marginal costs were completely passed on consumers' bills.

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

Generally speaking, balancing markets provide a type of ancillary service (balance) that is needed in order to maintain the system quality and in particular its frequency. These markets are dealt with by TSOs. Ensuring generation adequacy is a different activity and it has to do with matching demand and supply of power, for each period of time. TSOs will certainly have a role in determining the amount of power that is needed for this purpose, if not in directly organising the provision of energy by plant owners.

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

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

Yes, it is crucial that the Commission establishes guidelines at the EU level. These would coordinate how Member States could foster the use of existing power plants for generation adequacy, unlock flexibility potentials and - where needed for adequacy purposes - subsequently develop generation capacity. This would avoid the risk of a fragmenting factor for the internal market, with its consequent cost increases. The guidelines should promote the abovementioned stepwise approach (flexibility capabilities being deployed before tendering targeted resources and finally auctioning new capacities), and cost benefit analyses identifying the real needs for each step. As of the type of capacity mechanism that Member States might put in place in order to fund new investments – where these were appropriate – it is important that they do not hamper the functioning of the internal energy market. Furthermore, the guidelines will include all the generation technologies for possible investments and rank them on the basis of systemic needs and CO<sub>2</sub> reduction goals.

**20) Do you consider the detailed criteria set out above to be appropriate?**

EPIA believes that a dedicated framework aimed at ensuring generation adequacy should be established at European level in the context of the identified needs to be met in the operations of a fully integrated and competitive internal market for energy. In this market, all flexibility resources specified in flexibility strategies to be established at national level (e.g.: DSM, storage – see replies 7 and 8) would have been fully exploited. This should be done while taking into account the system analysis conducted by a new ENTSO-E adequacy forecast. This new adequacy forecast will be

developed in a consistent way across the EU and should in particular be built on a stepwise approach:

- i. Credibly assessing the contribution to system adequacy of PV and the other variable RES, acknowledging in particular the contribution of these technologies to generation adequacy and production at peak time.
- ii. Properly taking into account all flexibility resources that could contribute to system adequacy before assessing generation adequacy. This analysis should take into account forecasts drawn from the national flexibility strategies on: storage, demand side management and interconnection.

The generation adequacy framework should then be coordinated – and implemented where duly justified – on the basis of guidelines to be defined at the EU level and be built on (in the order):

- i. The efficient use of existing targeted resources in a competitive tendering procedure
- ii. The development of generation capacity potentially required for adequacy purposes.

Plants and technologies will be ranked on the basis of needs of system stability, generation adequacy and – *ceteris paribus* – CO<sub>2</sub> emissions.