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European Commission Consultation Paper on generation adequacy, capacity mechanism and the internal market in electricity

Introduction:

National Grid welcomes the opportunity to respond to the EU Public Consultation on generation adequacy, capacity mechanisms and the internal market in electricity. This response is provided on behalf of National Grid Electricity Transmission plc (NGET) (registered identification number 56039866688-26) and is not confidential.

National Grid owns and operates the high voltage electricity transmission system in England and Wales and, as National Electricity Transmission System Operator (NETSO), we operate the Scottish high voltage transmission system. In the UK, our primary duties under the Electricity Act are to develop and maintain an efficient network and to facilitate competition in the generation and supply of electricity. Our activities include the residual balancing in real time of the electricity system. We are a member of ENTSO-E and are actively engaged in the work to implement the internal market.

Summary

National Grid supports the full implementation of the EU target model with associated network infrastructure and considers that efficient trading of electricity between interconnected markets will deliver benefits to consumers. Having efficient interconnected markets will allow interconnector flows to follow price signals, particularly at times of system stress. However, investment in interconnection assets is needed for island systems to realise this benefit. Such investment has significant cost and risk associated which may increase the time taken to realise the full benefits of the internal market.

The energy market is going through a period of significant change as Member States take steps to ensure climate change targets are met.. The uncertainty in the roll out of energy policy introduces risk to investment decisions, and may undermine investment needed for security of supply. Increasing volumes of low carbon generation are being brought forward by low carbon support schemes. As this volume of generation increases, non-supported generation feels the impact as their ability to capture revenue is reduced due to reduced load factors and also the price achieved in the market. Steps to improve market functioning may take time to implement and must be in operation for a sustained period to offer sufficiently strong signals to support investment.

This uncertain investment environment and the timescale to deliver capacity are such that early action may be required to ensure that consumers are offered a reliable and secure supply of electricity at optimal prices. A well designed capacity mechanism, supporting signals for investment and dispatch in energy market, may be a proportionate and appropriate response.

A well designed mechanism should further the aims and objectives of the internal market; if the interaction with interconnected markets is taken account of within the design, ensuring that efficient trade in not hindered and that the contribution of interconnected capacity to security of supply in Member States is reflected in the volume contracted, it should not follow that the introduction of a capacity market presents a barrier to the implementation of the internal market. It is our view that a market wide mechanism, operating in harmony with the energy market which reduces barriers to entry from all new capacity technologies and recognises the contribution of interconnectors to adequacy and minimising overall distortion would offer Public Authorities the tools to ensure an acceptable security of

supply is delivered to consumers without adversely impacting upon the implementation of the internal market.

The remainder of this response in the Appendix provides our thoughts in relation to the specific questions asked within the consultation document.

Appendix: Responses to questions raised in the consultation

Chapter 2: Investing in the Internal Energy Market

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

Current generation adequacy assessment demonstrates that there has been sufficient investment in capacity. However the fundamental changes in the market environment due to policy changes seeking a transition to a low carbon economy are such that revenue streams needed are less predictable, increasing investment risk. The impact of this can be observed in generation adequacy assessment figures for GB published by Ofgem which show a significant reduction in generation margins for the middle of this decade and a credible risk to security of supply.

Market prices in isolation may not bring forward sufficient investment in a diverse portfolio of generation; the ability to capture a stable revenue stream is required to secure investment needed for generation capacity. Confidence in the stability of such revenue streams is crucial to investment. Any activity which diverts some of the value of the electricity market from all parties can impact this confidence and has the potential to dull signals to invest which would otherwise be provided by prevailing market prices

For example, market prices have not been sufficient to bring forward the required investment in low carbon generation, both renewable and non-renewable technologies. The necessary support schemes developed to ensure that low carbon targets can be delivered have moved a volume of generation, in part at least, outside of the market or provided additional support. As this volume of generation increases, this impacts both the potential of non-supported generation to capture any revenue, with load factors reducing, and also the price achieved in the market as the costs of production vary significantly across technologies; on a day with high wind generation output the price for electricity will reduce and should rise when the output from wind generation is low. The combined impact of reducing load factors and reliance on capturing volatile prices against the background of policy change is such that signals from market price along may not be sufficient to incentive required investment. This uncertain investment environment and the timescale to deliver capacity are such that early action may be required to ensure that consumers are offered a reliable and secure supply of electricity at optimal prices,

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?

Support for specific technologies has a role to play in ensuring that transition to low carbon economy is achieved. This is particularly important for less well established technologies and for those technologies with a ‘long-life” cycle.

We believe that both the proportion of generation receiving other support and that the interaction between support schemes and the existing market may impact on the investment case for non-supported generation. For example, if a technology type commands 20% of a market and has financial and policy support that is comparatively better than that available to other technologies, then this is likely to have an impact on alternative investments.Were a thermal generator to be displaced by subsidised renewable generation if they are able to recover their opportunity costs this should not present a problem. However, if the generation finds load factors are reduced and they are not able to capture sufficiently high scarcity rents this would undermine investment decisions.

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

Work to establish cross border day-ahead, intra-day and balancing markets will facilitate and encourage efficient trading of electricity between interconnected markets, offering the potential for greater use of capacity resources for the benefit of consumers in the interconnected markets. Having efficient interconnected markets will allow interconnector flows to follow price signals, particularly at times of system stress.

In order for island systems to realise this benefit, DC interconnection is needed. Investment in DC interconnection has significant cost and risk associated; substantial work is required to ensure the operation of the asset is compatible with the technical needs of both transmission systems. Furthermore, where interconnectors fall outside of normal regulatory frameworks market arrangements must ensure that the value of interconnector capacity is delivered to the correct party This level of risk and complexity increases the time to realise the benefits from development of the markets..

Work to establish cross border markets has focused on the day-ahead and intraday energy markets; this has some unintended consequences for interconnectors where the value of capacity may not be fully revealed or may be delivered to the incorrect parties. This impact may undermine investment decisions in interconnectors, where the interconnector is developed under a market-led rather than centrally planned basis. Any additional risk to investment could potentially introduce delays to the development of interconnector assets vital to realise the benefits of the internal market for consumers of island transmission systems. Ofgem's ongoing work on regulatory arrangements for interconnection is very welcome in order establish a stable environment for investment which will then support delivery of the benefits of the internal market. The recognition that interconnection capacity can facilitate the sharing of reserves and frequency control services (with interconnection capacity for these purposes potentially excluded from use it or sell it arrangements) is also a welcome development.

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?

Much of the work to date has focused on network development and establishment of short term cross border markets. There is potentially an implicit assumption that sufficient transmission infrastructure coupled with short term electricity price signals will be enough to bring forwards optimal investment in generation. However, long term investment of the scale needed for generation requires long term price signals and an ability to enter long term contracts. There is an opportunity for further clarity on the long term requirement for capacity and revenue streams available to be offered in this area to ensure a sustainable framework for generation is available; a well designed capacity market could offer such a framework. .

It may be beneficial to consider the energy environment on a more holistic basis and explore the interaction between gas and electricity markets and transmission systems. Gas generation is widely considered to be the likely provider of flexible power to provide back up to renewable electricity generation. The impact of the need for this increased flexibility on the gas transmission system must be understood and fully reflected in the developed market rules for gas markets and transmission systems. This is of particular importance to island transmission systems or those with weak interconnection of either gas or electricity transmission systems.

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

As discussed in response to question (3), investment in interconnection and wider transmission infrastructure is needed to deliver the benefits of the internal markets. Compatible regulatory regimes

in Member States which encourage development of interconnection would support the necessary investment.

A well functioning and liquid demand side response market can make a significant contribution to adequacy. New metering technology now offers significant opportunities for such demand participation. Member States should take steps to foster the development of an efficient demand side response market.

It is also important that all parties active in the energy markets have an incentive to balance output against a contracted position and that prices achieved in balancing markets are not prevented from rising to reflect the value of electricity at times of system stress.

Where intervention may be required to ensure adequacy in the period prior to the benefits of internal market being realised, such interventions should be well designed to ensure they do not hinder the development of the internal market.

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?

Ideally market arrangements would be such that consumers could indicate their own preference for a security of supply standard. Advancing technologies, such as smart meters, which enable individual consumers to effectively indicate their preference, supports a wider response to market arrangements.

An established demand response market would allow participants to reflect how much they value electricity and stop consumption when the price exceeds that value. If some consumers would be prepared to take on interruptible contracts, the supply companies/aggregators should be able to assess how much this service is "worth" to them and value it against procuring additional energy and/or investing in additional generation/interconnection. However, it is important that such arrangements are not forced upon vulnerable consumers.

In the absence of real time tariffs, a decision must be taken on behalf of consumers as to the security of supply standard that they should receive, either by supply companies in forward contracting strategies or via a public authority determining a reliability standard that the market will be asked to deliver. A reliability standard could be established to set and communicate the Loss of Load Expectation which the market is expected to deliver. However the manner of electricity transmission is such that an electricity producer is unable to guarantee deliver to a specific customer as the impact of a single party's failure to deliver is shared across consumers. Thus setting a reliability standard would deliver an overall standard to all consumers rather than offer individual consumers choice. A capacity mechanism which supports participation from capacity delivered from demand side response would support consumers to reflect individual preferences in relation to security of supply.

Chapter 3: Assessing Generation Adequacy

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**

National Grid supports the work that ENTSO-E is leading on generation adequacy assessment and considers this to be an appropriate vehicle to deliver any potential modifications to adequacy assessment.

It is important to ensure that adequacy assessments are carried out on a National basis so that public authorities understand the standard of supply which national consumers can expect. A good understanding of what contribution interconnected capacity can make to security of supply in an interconnected market is vital to prevent member states over-securing to deliver a given standard. This will be a significant source of information to assist generation companies make investment decisions and increase coordination of capacity investments which are by nature lumpy. National Grid believes that a methodology to develop this understanding could not be developed in isolation but rather a regional solution should be developed in collaboration with interconnected systems and support the work led by ENTSO-E in this area.

If a robust and co-ordinated adequacy assessment is to be made on a regional or European level, then a clear definition of generation adequacy is required. A co-ordinated approach in methodologies would also be beneficial. It is statistically difficult to derive an appropriate distribution for “events” on a European wide basis, in significant part because insufficient data exists from which to derive appropriate distributions. For example the wind dispersion issue (the wind is always blowing somewhere – but how and where) as a result of temperature or weather variation. Similarly, demand elasticity will vary across different countries, as will plant performance and reliability characteristics.

Increased interconnection between markets means that it is important to understand how generation adequacy in a European context may be affected by network capacity constraints.

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?

The generation adequacy outlook by ENTSO-E is sufficiently detailed to meet current needs. ENTSO-E is considering further improvements including climatologic assessment and exploring ways to ensure that expertise of member TSOs is harnessed to the benefit of the adequacy outlook. National Grid supports this work by ENTSO-E.

As the volume of intermittent generation increases within a national generation portfolio, there is an increasing need to understand the availability of flexible capacity across interconnected systems. It will be necessary for national TSOs to understand, identify and define requirements for flexible services that may be required from a system operability perspective. Market signals, such as those offered in balancing markets and activities of TSOs to access ancillary services, should be sufficient to ensure there is enough flexible generation to meet energy balancing requirements. It may be beneficial to develop capacity adequacy assessment to include some flexibility metrics, where the value delivered through this analysis can be demonstrated.

This understanding of need for flexibility is particularly important at a regional level initially. However, as the level of interconnection between markets increases so too do the potential benefits from a European wide assessment of availability of flexible generation.

Plant reliability data is a significant input into any adequacy assessment under different operating regimes. Prior to developing any more detailed assessment, it is worth considering what information is available to feed into the assessment methodology to ensure that valuable information is derived from the assessment.

9. Do you consider the electricity security of supply directive to be adequate? If it should be revised, on which points?

The Directive 2005/89/EC on Security of Electricity Supply and Infrastructure Investment provides a good framework to support development of markets to deliver security of supply. However, there is potential for increased clarity on where responsibility for security of supply lies. Article 5 of the Directive identifies the transmission system operator as responsible party for ensuring an appropriate level of generation reserve capacity for balancing purposes; Transmission system operators do not have an obligation to ensure adequate generation to delivery security of supply, rather this is the role of market parties and authorities. A clarification of this responsibility could raise more awareness of such parties that they have a role to play.

The Security of Supply directive enforces the duties and rights of Member States to ensure their security of supply. However the level of Security of Supply deemed appropriate is currently set by individual Member States. The absence of a coordinated view of security of supply standard could mean that the benefits of a high reliability standard may be exported at no cost. To avoid this perhaps a minimum standard to be delivered to consumers should be set.

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?

Before any mandatory activity is introduced the objective and expected benefit to consumers should be clear to ensure the cost of the activity is justified by the benefit; the gap in information should be understood to ensure that complex analysis delivers information in the most appropriate form for the intended audience.

The preparation of generation adequacy assessment requires complex analysis and the quality and usefulness of the output is dependent upon the data available to feed the analysis. A risk assessment which considers interconnection and inter-regional support would offer useful information to both policy makers and market participants. However, the quality of data available and its applicability to the question in hand must be considered prior to introducing mandatory assessments, again to ensure that the cost of the activity is justified by the benefit.

To maximise the benefit of any risk assessment, it should be carried out in a coordinated manner and seek to share best practice and expertise between those responsible for the risk assessment. National Grid would be willing to work with ENTSO-E and other stakeholders to explore areas for further enhancement where there is a clear benefit to be realised.

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?

Coordination of generation adequacy assessments would be advantageous in respect to helping Member States to understand the level of mutual support that can be offered between member states. We consider that it would be vital to ensure that issues specific to individual transmission systems would be included in this assessment. To deliver maximum benefit, the output of assessments should be made available in a systematic manner.

However, different Member States may desire a different reliability standard to that of a neighbouring market. It is more difficult to understand how adequacy standards would be adjusted for diverging standards on security of supply. For example, it would not be appropriate that a member state whose consumers demand (and hence have paid for) a higher criteria for security of supply, is obliged to share the benefit with a member state that has a lower preference in respect to security of supply,

without some form of compensatory mechanism. Such a mechanism is likely to be complex and difficult to implement.

Chapter 4: Mechanisms to address Generation Adequacy Concerns

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

National Grid in its role as NETSO is obliged to coordinate the flow of electricity across the transmission system. While our role does not extend to ensuring adequate capacity is available, we would be concerned by the impact of a delay to take steps to ensure consumers are delivered a reliable supply of electricity. We support Public Authorities working with NRA and TSOs to determine if intervention is required and to ensure that any intervention is well designed, supports the establishment of the internal market and is taken in timely manner to allow efficient investment in capacity to deliver a reliable standard of electricity to consumers at least cost. .

While modifications to market arrangements may improve market functioning, the response of market participants may not be immediate as a sustained period of operation may be required to foster the confidence required for investment in generation As there is a significant lead time between identification of a capacity issue and the delivery of new capacity onto the system, there is inevitably a limited period available to effect a change in the way a market functions. A judgement is required as to how long can be afforded to improve market functioning, which should take account of capacity adequacy assessment, forecast demand, contribution from interconnected systems, lead time to develop new capacity and the growth of the demand response market.

If the introduction of a capacity mechanism is well designed and works in harmony with the energy market it may act as an enabler for the internal market and deliver some of the expected benefits to consumers earlier. For example, the introduction of a capacity market which fosters the development of the demand side response of the market would support the establishment of the target model. It is not clear that early adoption of a capacity mechanism introduces inefficiency or distortion to the energy market.

Given that judgement is required to determine if the market is functioning, the timescale to bring forwards capacity and that a well designed capacity market could further the implementation of the internal market, we are of the view that Public Authorities in Member States should act to introduce a capacity mechanism where judged necessary, ahead of firm evidence that steps to improve market function are insufficient,

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

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

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

Generally a market can be viewed as well functioning where there is a variety of products to suit both the needs of sellers and buyers, where there is liquidity in the market, the price of the product can rise to reflect scarcity and the true value of the product, and the product can be sold across a wide time horizon to allow parties to manage risk. The balancing market is particularly important in price setting at times of scarcity.

A further consideration may be related to whether the national system operator is able to obtain the provision of non-energy services (such as reactive power) or other services associated with system operation such as fast reserve and response services at an economic price. Where prices for such services are high, this could indicate that the energy market is not functioning sufficiently well in either providing balanced revenue streams or maintaining sufficient competition amongst flexible generation services.

Given the complexity of electricity markets and the potential for failure in specific aspects, policy makers must continue to monitor market functioning, considering it of the market on both temporal and geographic bases and ensuring that products required to operate transmission systems are readily available. However, assessment of these criteria is an ex-post activity and thus it is difficult to assess how well a particular market is functioning when looking forwards.

Where these general criteria are observed and there is still insufficient reward for flexibility and adequacy, then market functioning could be described as insufficient. However, depending on the objective or ambition of a market, varying measurements against the criteria above may offer a different view as to whether a market is well functioning or not.

At times of rapid change in market environment, the market may not have sufficient time to respond to the new arrangements. As such, it may be possible for the criteria mentioned above to appear to be satisfied though the market is not functioning in a fully effective manner; invention may be needed to ensure the continued functioning of the market.

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?

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?

A strategic reserve, if suitably designed, might help manage a short term capacity problem, for example by extending the life of an existing generator for a short period of time.

However, there is the strong likelihood that the remaining market will recognise the presence of a strategic reserve which presents a significant risk that investment decisions in the energy market will be distorted. A long term transition to a low carbon electricity system may be better achieved if generation adequacy arrangements signal the need for additional market investment, enhancing long term certainty for market participants, rather than signalling that non-market measures will be taken. National Grid has concerns about the signal offered by the introduction of a non market measure to support delivery of a peak energy product; such action could send a damaging signal to the wider market participants which may result in capacity being removed from the market and a reduction in overall generation adequacy as a result of the intervention.

While a strategic reserve could support transition to a low carbon electricity system, consideration must be given as to how it would be used and what impact it would have on market price signals. To preserve the functioning of the market, the price paid at dispatch must be significantly higher than the prevailing market price. So, the operation of the strategic reserve necessitates a move towards higher and less predictable prices in the wholesale market, driven by prices for peaking generation or response from demand side providers. Any strategic reserve also threatens the optimal functioning of a market, as more capacity seeks to move from the wholesale market where prices are subject to competitive pressures towards the strategic reserve where the dispatch costs must be set in a more administrative manner.

National Grid has concerns that the introduction of a strategic reserve may not be fully compatible with the internal market, given the bias introduced and potential distortion of competition.

15. In relation to capacity markets and/or payments:

a. Which models of capacity market and/or payment 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?

A well designed capacity market should deliver reliable capacity, capable of delivering at times of system stress. National Grid would support the development of a market wide mechanism which

operates in harmony with the existing wholesale market and has the capability of recognising the potential for further market development, such as market splitting.

A capacity market that is structured in such a way, that a holder of a capacity contract is obliged to generate, or reduce demand, over a time of system stress or else be subjected to penalty payments achieves this aim. This leaves the holder of the capacity contract free to price into the market independently of their capacity contract. Unlike a strategic reserve, it does not require the TSO to make the decision when to initiate the strategic reserve and allows the market to find its own price level. Contract terms and durations can be set in line with anticipated adequacy requirements and allowed to expire.

The mechanism should seek to increase competition in the wholesale market, removing barriers to entry for new generation. Contracts of longer duration may be required to achieve this aim.

Demand side response has a crucial role to play within the energy market and any capacity market to ensure that excessive generation capacity is not brought to market. We support a design that recognises the contribution of DSR and actively seeks to maximise DSR participation in that market, identifying and removing barriers to entry.

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?

The value of flexibility should come from short-term energy prices informed by balancing actions and other ancillary service contracts entered into by the system operator. Different systems will have different requirements for flexibility which should be reflected in the balancing costs of that system. A capacity market operating in harmony with the existing energy market should not reduce signals in the energy market for flexibility and might reinforce the signals for flexibility provided by balancing and other short-term markets. Where performance under a capacity obligation requires delivery of electricity or reduction in demand, under all system stress conditions such a design will encourage capacity holders to invest in technologies that are as flexible as the market needs. However, it is also important to ensure that there is no other element of the market that could dampen or distort that signal for flexibility, such as support schemes for low carbon generation which dull incentives for market participants to balance own contract positions.

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

The introduction of a capacity market which is not aligned to the internal market or introduces inefficiency to the wholesale electricity market may be difficult to reverse. However, a well designed capacity market should take account of the rewards and incentives in the existing energy markets; thus the price paid for capacity, discovered via a competitive process, should reflect the balance of risk reward within the existing market; Once these rewards and incentives are sufficient to bring forward investment the need for separate pricing of capacity should reduce, effectively reversing the introduction of the capacity market.

To offer certainty to investors, a capacity market may seek to deliver a set reliability standard, elected by Member States. Were a capacity market to contract capacity to meet this standard without appropriate consideration of the overall market environment, this could impact the decision to exit a mechanism. As such, the application of any reliability standard and the interaction with capacity adequacy assessment is very important.

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

The introduction of a capacity market which delivers a more reliable electricity supply than would otherwise have been delivered to consumers will have an associated cost as additional capacity is brought to market and this must be rewarded.

It is important to consider the costs associated with any capacity market in the context of the overall interaction with the market and elements that make up costs borne by consumers, rather than comparing isolated elements which do not reflect the full picture.

If the signal to invest in new capacity is delivered solely through the energy market, with decreased load factors captured by thermal/non low carbon generation, the signal to invest is derived from high and unpredictable price spikes in the energy market. It is difficult for suppliers to forecast these periods and so it is difficult to manage this risk appropriately, leading to risk premiums being included in end consumers bills. As such, a well designed capacity market could reduce costs faced by consumers.

A well designed capacity market should not introduce excessive risk to capacity providers which they are not able to mitigate as this will be reflected in the cost of capacity and ultimately be passed to consumers. It is also important that a capacity market expects physical delivery of capacity to ensure that risk of non reliable capacity being rewarded via a capacity market which cannot deliver when needed is minimised.

The interaction with existing trading arrangements should be considered in detail, looking at impact on cost of credit, liquidity, ability to transfer and share risk and settlement arrangements to ensure they are compatible and that any additional costs to consumers or barriers to new entry are not introduced.

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

The need for resources to meet flexibility and adequacy scarcity are both observed within the timescales of the balancing market; the design of the capacity mechanism should look to support this. Where a capacity mechanism places an obligation on providers to deliver at all times of system stress experienced in real time; the time to respond to system stress should be aligned with the underlying balancing market. Such a design encourages providers to invest in capacity which has the ability to provide the flexibility required and does not dull incentives coming from other areas of the energy market.

It may also be beneficial for a capacity mechanism to ensure that innovation and development of new ways to deliver flexibility is not hindered. As such a capacity market should not seek to prescribe flexibility requirements, given the lead time between offering capacity contracts via a competitive process and delivery of capacity but allow balancing markets to reflect the full value of flexibility

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

National Grid considers that the Commission should not look to provide a blueprint for an EU-wide capacity mechanism. As a capacity mechanism is in part a remedy for circumstances that arise due to individual Member State energy policies and actions to meet policy goals, it would be a very complex task to ascertain the appropriate level of capacity adequacy for each individual member state and reflect the varying needs of each. Different system characteristics may also need to be accounted for (i.e. island systems, generation mix etc) and thus a one size fits all is unlikely to be appropriate.

National Grid supports the view that the Commission should promote coordination of compatible product definitions and incentive structures in capacity mechanisms to minimise distortions of European cross-border trade and ensure compatibility with the IEM objectives and functioning.

Chapter 5: Framework for Assessing Capacity Mechanisms

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

The European Commission already has the authority to monitor and enforce the integration of energy markets in Europe as set out in the relevant directives and regulations on Member States subject to the principle of subsidiarity and national prerogatives as appropriate. As such, development of any capacity mechanism should consider the interaction with the internal market.

The development and introduction of any capacity market should consider the needs of consumers, the development of the existing energy market and the route to market of existing capacity. These may vary significantly between Member States. As such application of detailed criteria may not be appropriate and may place unnecessary constraints on energy policy, increasing the risk to Security of Supply. As such, it may be more appropriate for the Commission to develop general principles rather than detailed criteria.

20. Do you consider the detailed criteria set out above to be appropriate?
- **a. Should any criteria be added to this list?**
- **b. Which, if any, criteria should be given most weight?**

As discussed in (19) above, it may be more appropriate for the Commission to develop general principles rather than detailed criteria. It is National Grid's view that the criteria set out in the consultation document capture the key elements to consider when assessing any capacity mechanism. A well designed capacity market should operate in harmony with the wholesale market, supporting signals for investment and dispatch from the wholesale energy market. It should also operate with a lead-time that encourages new capacity to come to market to increase competition within the wholesale market. Demand side response and interconnectors have a crucial role to play within the energy market and any capacity market to ensure that excessive generation capacity is not brought to market.

We consider the key elements to be as follows:

- Value to consumers: A capacity market must deliver value for money to consumers. The mechanism should bring forward reliable capacity capability which is incentivised to respond at times of system stress at least cost.
- Compatible with energy market: A well designed capacity market should operate in harmony with existing balancing and wholesale markets. Signals for dispatch should be driven from the balancing market arrangements in the Member state, to ensure that there is no dampening of signals for flexibility and those technical needs of systems can be delivered by capacity brought forwards via the capacity market.
- Supportive of internal market: It is important that the introduction of a capacity market does not act as a barrier to trade between member states to ensure that all consumers receive the benefit of interconnection between markets and Member States.
- Support investment from new and existing technologies: Investment is encouraged by a clear signal indicating the existence of a predictable revenue stream which can be capture with risk held by the party best placed to mitigate that risk. Barriers to entry of new capacity providers should be reduced to maximise growth of competition. The market need for certainty on the arrangements should be considered in the design.

- Role for Demand Side Market: A clear opportunity for Demand Side Response and emerging technology to participate should be provided to encourage innovation in the electricity market and to further climate change ambitions.
- Review and Exit criteria: Clear criteria for review should be established prior to the introduction of any mechanism to ensure there is scope to modify the arrangements if necessary. This should include the potential for exit from the mechanism if market conditions support.
- TSO cost neutrality: Capacity mechanisms should have no impact on the financial health of TSOs. Security of Supply costs are not directly related to network investment requirements.