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European Commission  
DG Energy - ENER.B.2  
Internal Market II: Wholesale markets; electricity & gas

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

Energy Norway, the industry organization representing about 270 companies involved in the production, distribution and trading of electricity in Norway, welcomes the Commission report on internal markets and the parallel consultation on generation adequacy, capacity mechanisms and the internal market in electricity. European electricity markets are in a period of profound change to adapt to a system with more intermittent renewable resources (RES). Growing shares of RES in electricity production are a necessary contribution to reduce CO2 emissions in the fight against climate change. This transition poses challenges to the system that can be met in several ways through market oriented policies, regulations or capacity mechanisms and other forms of subsidies. In Energy Norway's view the change to more RES in the generation mix is positive and necessary, but the right measures need to be chosen to manage to the transition period efficiently and effectively. The Commission's consultation comes at the correct moment to assess the current situation and analyze old and new policies impacting on the electricity markets in order to design viable and sustainable electricity markets for the future.

### **General Comments**

Power systems are changing from thermal/nuclear dominated to include increasing shares of intermittent RES. Fewer hours with price peaks and more hours with very low or even negative prices reduce the profitability of thermal power plants and reduce incentives for investment in new generation or storage to replace old thermal generation or nuclear generation. At the same time solar and wind power that have the largest share of investment in new generation are intermittent and their production highly volatile depending on the weather. These changes lead to the fear in some EU member states, that generation adequacy could be reduced and security of supply threatened, if the wind doesn't blow and the sun doesn't shine.

As a consequence Capacity Remuneration Mechanisms (CRMs) are gaining support in some member states to remunerate investment in new reliable capacity or to prevent decommissioning of unprofitable thermal capacity. However, CRMs can have negative impacts on our current "energy-only" electricity markets: It moves the power sector from a decentralized, market driven sector to a

centralized, regulated system, as capacity targets need to be administratively set. Electricity markets, which try to combine different pricing mechanisms (energy only and capacity), are difficult to design correctly and may reduce liquidity in the energy only market and the credibility of the electricity price as a signal for demand flexibility and for unsubsidized investment in new generation capacity. In addition, CRMs are a risk to the progress of cross-border market integration and competition in Europe, especially if introduced nationally and uncoordinated as is currently the case.

Due to these risks inherent in CRMs, all other measures to improve generation adequacy should be taken first. In our view, current European electricity markets can be further improved to provide correct price and investment signals, if they are allowed to function properly.

Functioning markets depend on an integrated grid and sufficient network capacity between markets and countries. An important measure to be taken before introducing CRMs is therefore to invest in the European transmission grid.

- Coordinate transmission investment planning through the TYNDP process and accommodate both TSO and third party initiatives
- Speed up and coordinate permitting and licensing procedures for transmission and generation capacity
- Improve the use of the existing transmission grid by fully using the potential lying in common capacity calculation as part of the current market integration process and network code writing.

In addition, the functioning of the current "energy-only" markets can be improved. Functioning markets allow electricity prices to move depending on demand and supply. If power is abundant prices will fall, if it is scarce prices peak. High prices give short term signals to consumers to reduce demand and for producers to increase production. Recurring and increasing price peaks give long term signals for producers to invest in more generation capacity. Generation adequacy is ensured as long as there is a physical balance between demand and supply at any given time. To improve the functioning of our electricity wholesale markets, Energy Norway suggest the following measures:

- Speed up the process of market integration in the day ahead and intraday markets
- Build functioning integrated markets for balancing and system services
- Improve the functioning of the day ahead markets by removing price ceilings, regulated prices and create acceptance for increased price volatility by for example creating functioning electricity forward markets which allow consumers to hedge price volatility
- And most important: develop and integrate demand flexibility in the wholesale markets. If consumers put in price dependent bids in the wholesale market and reduced their consumption at peak hours, it would be easier to make supply and demand curves meet, which would improve generation adequacy. Demand flexibility is also a cheaper and more efficient solution than having generation capacity standing by at all times to run only a few hours when needed.
  - Increase industrial consumer participation in the wholesale markets.

- Household consumers (through aggregators) should be incentivized to participate by abolishing regulated household tariffs. The roll out of smart meters and implementation of demand side response mechanisms should be speeded up to utilize price dependent demand flexibility.
- Integrate RES producers in the markets by exposing them to electricity prices and making them balancing responsible parties and exposing them to balancing cost, which is already done in some countries. This is of course a gradual process as existing RES support schemes can't be changed overnight, but all revisions, changes and especially new support schemes should make RES support more market compatible.
- Continue to develop the market design of day ahead and intraday markets by for example introducing products with a smaller timescale (30 min products, 15 min products) and moving the gate closure closer to the operational hour

Another measure to increase generation adequacy and supply security is increased cooperation between the TSOs in their generation adequacy assessments. Increasing transmission capacity and market integration will facilitate such a process by making access to generation capacity in other countries more reliable. Especially Northwestern Europe could profit by linking the Nordic hydro dominated countries with the thermal/wind dominated CWE countries. Common use of generation resources, where the grid makes it possible, decreases the need to secure domestic generation adequacy. Common rules and methodologies to secure generation adequacy on a national, regional and European level by running for example common scenarios should therefore complement market integration.

Last but not least, policy makers should work create a stable regulatory framework. Repeated changes to political decisions or discussions to introduce new subsidy schemes such as CRM, increase political uncertainty and make it more difficult to take long term investment decisions.

If all these measures are taken, the threat to generation adequacy could be removed or reduced in such a manner to make CRMs unnecessary. Introduction of CRMs should therefore only be considered as a last resort, when all other measures have failed. In that case they must be designed in a way to have minimal negative impact on the electricity markets, market integration and competition.

### **Replies to consultation questions:**

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

No, in principle market prices can give sufficient investment signals for investment in needed generation capacity. In an energy only market, investors base their investment decisions on their assumptions regarding long term future electricity prices. Investors will invest in new generation capacity or modernize existing capacity, when expected future prices in the day ahead, intraday and balancing markets will cover the cost. In that decision making process, investors need clear price signals from an undistorted market to be able to make good assumptions about long term prices. Developments in current short term prices for example the frequency and height of price peaks or hours with negative prices and the price development of current mid-term contracts for a few years

ahead, which indicate where the mid-term supply and demand meet, are factors taken into account. Undistorted price signals allow even adaptation to markets with changing conditions as an increased share of intermittent RES, as the effects are already reflected in short term prices and can be forecast to increase in the future.

However, if markets prices are distorted, by for example price caps, subsidies to certain technologies and the design of those subsidy schemes, lack of balancing markets, lack of balancing responsibility for RES etc, signals for investment in generation capacity are also distorted and could lead to lack of investment. In such a case, a first step could be to reduce measures distorting electricity 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?*

Yes, support for specific energy sources can undermine investment in other generation resources. Most support schemes have an effect on the price formation in the electricity markets and thereby distort investment signals for other technologies. How negative the impact is depends on the design of the support scheme: a one-time payment to a generator will influence technology choice (for example RES over thermal) but has less impact on the price formation in the electricity markets and is in so far less harmful. Feed in tariffs on the other hand protect the producer from price developments in the wholesale markets and can lead in extreme cases to overproduction and negative prices, as the producer gets a fixed revenue independent of electricity demand. Freeing intermittent RES producers from balancing responsibility and protecting them from exposure to the balancing markets in some countries has reduced their incentives to improve wind and sun forecasts and trade themselves into balance, which has increased balancing cost for all other participants on the markets. As long as RES just have a small share on the market, the consequences are "just" reduced efficiency. Now, however, as RES have reached a certain share, the consequences are clearly visible in for example more hours with negative or very low electricity prices, which threatens the profitability of other generation resources that need the price peaks to recover their capital cost.

In our view, support schemes should be redesigned to minimize negative impacts on the wholesale markets and gradually phased out as the technologies are reaching maturity. In order not to create additional uncertainty on the market this redesign should be introduced slowly when subsidy and support schemes are revised or before new ones are introduced.

*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?*

Market integration in the day ahead, intraday and balancing markets will improve supply security as soon as the integrated market is in place i.e. hopefully by 2014. In integrated day ahead and intraday markets, existing XB capacity is used efficiently and allows generation resources from the whole area to meet demand, which improves generation adequacy. It also reduces the need for balancing reserves of the TSOs, as producers and demand can trade themselves into balance close to real time. In addition, TSOs can benefit in integrated balancing markets from access to balancing energy across the border. Another effect is reduced balancing cost.

In the long run, properly established markets will also provide the price signals needed for investment in or modernization of generation capacity.

*(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?*

First the Commission needs to continue working for the implementation of the third energy package to allow the integrated market to work properly. Price caps, regulated prices and other distortions to the pricing mechanism should be removed, to allow prices to correctly reflect scarcity and encourage demand flexibility. Demand flexibility should be further encouraged by supporting the development of smart grids and smart meters for example through work on common standards and common research work. RES should also be brought into the market: if a European approach to RES support is not realistic at least common standards should be developed. Subsidies should be made gradually compatible with electricity markets and RES integrated fully into the wholesale and balancing markets for example switching from feed in tariffs to certificate systems like in Norway and Sweden or feed in premium systems.

In addition the use of the existing transmission grid and investment in transmission capacity need to be seen from a European perspective. Ongoing work on Network Codes for example CACM, balancing or load frequency and control, needs to ensure that the TSOs are required to cooperate together and develop common methodologies from assessing reserve needs to calculating available grid capacity. If the existing networks are used more efficiently more generation resources can be shared amongst the member states which improves generation adequacy. The same applies for investments in new grid infrastructure. TSOs should plan and assess together, where investment is most needed and which cross border connections are required. The TYNDP is a good starting point for such a common assessment.

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

Although Norway is not a member of the EU, we believe that it is important to support the internal market. Hence we welcome the increasing focus on the implementation of the 3<sup>rd</sup> energy package, as the package incorporates several measures that could improve market functioning such as the removal of regulated prices, which would encourage demand flexibility. Other measures to support demand flexibility are the roll out of smart meters and end-user fuel switching possibilities, which also lie in the national competency. Introducing demand flexibility and the abolishment of regulated prices also requires political will and acceptance that price volatility may increase. That process could be made more acceptable to consumers by remunerating them for their demand flexibility.

In addition, governments could support infrastructure investment by speeding up permission and licensing processes for generation and transmission and making them more predictable. Current processes are slow, costly and unpredictable and are an obstacle for new investment. Infrastructure investments should also include merchant cables, which can be an important contribution to integrating markets. Given the huge challenges the TSOs face, regulated merchant cables would make an important contribution and reduce the burden and risk for the TSOs.

Externally, market coupling, regional cooperation and XB infrastructure investments are very dependent on the political will and drive of different countries. Pressure should therefore be put on the NRAs and TSOs to cooperate across borders.

*(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?*

In our view, competitive retail and wholesale markets can reflect consumer preferences for supply security and no administratively set standard is necessary.

In the Nordic countries, industrial end-users with a high consumption typically already buy electricity on the wholesale market. These large consumers have a strong incentive to reduce their consumption in peak hours to avoid high prices. There is therefore no need to set a standard for supply security for industrial consumers, if they already use the wholesale market and pick their own standard. Public authorities should encourage large end-users to use those cost saving possibilities.

Household consumers and other small end-consumers could also play an active role in providing flexibility for the electricity system and defining their own standard of supply security. Consumers should be able to contribute to supply security by steering their consumption according to price signals and thereby saving money during expensive hours or by accepting that their electricity consumption is restricted during certain periods and receiving a financial compensation for that. Norwegian households reduced demand in the winter 2010/2011 when there was a high media focus on the electricity price spikes. That reaction shows that the potential is there, however at that time, most households had no possibility to bid in that reduction in the markets, so the demand reduction was just visible through several hours of strong downregulation in the balancing markets and had no impact on the wholesale market prices. To make that potential available to the electricity market and remunerate end-consumers, smart meters and smart appliances, that for example allow fuel switching or heat storage, should be rolled out and retail markets should offer products that allow a remuneration of flexibility. Public authorities should work at the development of these tools and their retail markets, to allow consumers to choose their own standard for supply security.

*(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:*

Currently most member states require a national assessment of generation adequacy. However, given the progress of day-ahead and intraday market integration, generation adequacy should no longer be a purely national issue but should be assessed regionally, taking into account the interconnections between the countries. Therefore TSOs should work out common regional and European methodologies, rules and benchmarks and cooperate amongst each other. If there is sufficient interconnection between adjacent price areas, their adequacy should be assessed together.

*a. National level*

Due to market coupling, generation adequacy should be assessed in cooperation with the neighbouring countries i.e. at least or as a first step regionally.

*b. Regional Level*

As above.

*c. European Level*

At the European level the methods and benchmarks should be developed, including also new trends such as increasing demand flexibility. Economic aspects that reduce the lifetime of plants, such as reduced profitability due to less running hours, could also be taken into account.

*(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?*

In our view, most generators have the possibility to provide flexibility in real time to prevent black outs or involuntary load shedding. The generators decide to provide flexibility based on the remuneration they receive for these system services in the balancing and system services market. The European focus should therefore be integrating markets for balancing and system services, to give correct price signals. If flexibility is included into a generation adequacy study, the focus should be on the existence/non-existence of markets, what respective benchmarks TSOs choose in contracting their balancing reserves, how much reserves are contracted and how these resources are used.

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

As above, question 7.

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

In Energy Norway's view, the Commission should first focus to fully implement the 3rd energy package, to reduce distortions in the electricity markets, and a possible revision of the Electricity Security of Supply Directive (2005/89/EEC) should come at a second stage. However a revision of that Directive might become necessary, as it predates the EU energy and climate package. It should be updated to take into account progress with market integration, the growing interconnection but also new challenges due to rapid growing shares of subsidies intermittent RES, which pose security of supply before new possibilities and challenges.



*(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?*

National and regional generation adequacy plans could be important tools to enhance security of supply by pointing out where the risks lie. At the same time, the biannual TYNDP by ENTSO-E already assesses generation adequacy and security of supply, so introducing a new obligation would just be a doubling of existing work. Therefore Energy Norway would prefer, if the risk assessment could be included in the TYNDP, and if further work was done to improve the TYNDP by for example enhancing its transparency with regard to regional planning, addressing the integration of intermittent resources in more detail etc.

While the improvement of market functioning should lie at the core, such an adequacy and risk assessment should of course be obligatory for any country that considers introducing a CRM. Due to the risks linked to CRMs, such an assessment should provide clear evidence for the need of a CRM and include a risk assessment on negative impacts on demand flexibility, cross border trade and competition.

*(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?*

While generation adequacy assessment is currently national, a European harmonization of the rules and methodologies would make sense to come at least to regional common conclusions. Given the growing market integration through market coupling and increased interconnection, it does not make sense to assess generation adequacy from a purely national point of view. European methodologies should include amongst other elements cost benefit assessments, so the cost of potentially different preferences for supply security can be assessed and an informed decision taken.

A first step would be to start to cooperate in the assessment at least at regional level and then aim at gradually harmonized adequacy standards.

See also the answer to question 7.

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

Yes, if at all introduced, CRMs should be last resort measures, obstacles to wholesale market functioning must be removed first to allow the energy only market to work properly.

Introducing capacity mechanisms should only be discussed, when all other measures have proved insufficient. Detailed justification of measures taken and their insufficiency, especially with regards to demand flexibility and cross border market integration should be provided. Consistency with EU market integration should be ensured.



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

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

In Energy Norway's view there is enough flexibility in the existing Nordic and continental systems (existing generation capacity, demand side, interconnectors etc) that the need of the system can be met. In addition, Norway has large potentials for increasing capacity and flexibility. The decision to offer that flexibility into domestic or cross-border markets depends on the price signals received especially from the intraday and balancing markets. To fully use these resources, intraday market integration should process and markets for balancing and system services should be created. If producers and consumers are remunerated for their flexibility in an undistorted market, they might offer more flexibility resources. Network Codes should define common standards for adequate flexibility resources and TSOs should procure them on the integrated markets and contract some with market based remuneration. If these prerequisites are established, new flexible resources will emerge both from the supply and demand when needed by the market.

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

In Energy Norway's view, undistorted markets can meet demand also at times of highest system stress. As mentioned above, this assumes that there are no distortions such as price caps and regulated prices, that market integration continues and that other obstacles to investment are removed. The most important element to improve the functioning of today's market in times of high stress is increased demand flexibility, however. Industrial consumers in the Nordic countries are already starting to become aware of the cost saving potential laying in their demand flexibility and reduce their consumption in hours with high prices, thereby relieving the system and ensuring generation adequacy. Demand flexibility from industrial consumers should be further developed on all market places, by for example schoolings of big industrial consumers such as Nord Pool offers, gradual changes of supply contracts to allow flexibility and other measures.

Household flexibility is more challenging to integrate, as their consumption is smaller and the cost of DSM is higher (they need to be aggregated and automatically controlled). The role out of smart meters and adaptations in the retail market should allow the use of demand flexibility in the households and smaller end-consumers.

*(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?*

In Energy Norway's opinion, strategic reserves are not needed to encourage investment in generation capacity to support transition to a low emission economy. Incentives for investment in low carbon technologies should be created by CO2 reduction policies, emission trading and signals from the electricity prices. Similarly the changes in balancing prices should incentives investment in new balancing and flexibility resources.

However, as the practice in Sweden and Finland shows, strategic reserves seem to be seen as a kind of insurance in transition periods with high uncertainties. In those two countries they are only used in

exceptional situations, when supply and demand curves do not cross in the day-ahead market, which happens very rarely, so their impact on the day-ahead market is relatively low so far. However, the market design of such mechanisms is of imperative importance as faulty design can result in major market distortions.

*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?*

TSOs should not own generation capacity such as pump storage to provide the strategic and/or balancing reserves, as that would go against the unbundling principles and distort day-ahead, intraday and balancing markets. Instead the TSOs should procure the capacity from power producers in a market based process.

As mentioned above, strategic reserves should then only come into the market in extreme situations when supply and demand curves do not meet, to prevent impact on wholesale market prices in normal situations. In addition, they should not create any price caps or reduce demand flexibility. To ensure that normal price dynamics work, strategic reserves should be priced in at a price well above normal scarcity prices, to ensure that no ordinarily competitive adjustments are crowded out of the market.

TSOs should be encouraged to procure only a minimum amount of strategic reserves to minimize cost and efficiency loss of having standby capacity.

Currently we have different systems in the Nordic countries, TSOs should be encouraged to cooperate and elaborate common solutions.

However, there is always a risk that strategic reserves might be used for other targets such as keeping wholesale prices low, by for example activating the reserves already at price peaks and not only when there is no cross of supply and demand. In this case, strategic reserves would distort wholesale market price signals and have a negative effect on investment signals, demand flexibility etc. That risk can be reduced by very clear regulation concerning the use of the reserves and their size.

*(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?*

Energy Norway is in principle skeptical towards CRMs, as they do have an impact on the electricity wholesale price, which distorts investment or modernization incentives for unsubsidized capacity and could lead to the closure of unsubsidized capacity. In addition, if pure energy prices are kept low, consumers have less incentive to use and develop their demand flexibility. However, if the decision to introduce a CRM is taken, there are less distortive ways to design it, as listed in question 19 and 20.

*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?*

As mentioned above, CRMs shouldn't address flexibility. Flexibility needs should be addressed through creating integrated markets for balancing and system services and increasing demand flexibility.

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

CRMs are in general difficult to reverse as they reward all or almost all capacity and as they have a strong impact on wholesale market prices, which distorts investment incentives based purely on price signals. In addition, political discussion around the introduction of CRMs or their adjustments introduces uncertainty for investors and creates additional investment barriers.

Strategic reserves are easier to remove, as price signals are less distorted and as they don't reward all/almost all capacity but just a small share.

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

Capacity mechanisms that follow market principles and leave as much to self-regulation as possible are less costly than those following numerous targets and administratively set parameters.

Least impacts would be caused by market-based systems with non-discriminatory participation and a regional dimension instead of national systems. Transitional mechanisms, like limited strategic reserves, can also keep the consumer costs lower than full-scale capacity mechanisms.

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

CRM should not build on balancing market regimes, and there should be no CRMs targeted to increase flexibility. Instead as mentioned above, the integration of markets for balancing and system services should continue, demand flexibility developed and RES generators should become balancing responsible parties, where that has not happened yet.

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

No, there should be no 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, the Commission should develop criteria to assess the impacts of CRMs on the internal energy market in cooperation with ACER and hearing all relevant stakeholders. Implementation of national

capacity mechanism should be conditional to prior notification and approval by the Commission. Besides addressing the compatibility of the CRM with the internal energy market those criteria should include:

- Possible distortions to the internal market
- A list of what measures have been taken to prevent the introduction of CRMs and why they have not worked sufficiently, especially concerning demand flexibility and market integration
- A clear, evidence based justification for the threat to generation adequacy leading for the need for a CRM
- A time limited application, including regular assessment on whether the CRM is still justified and a clear phasing out plan.

If a decision to introduce a CRM is taken, regulators should decide upon the desired level of generation adequacy, based on the TSOs reports and a cost – benefit analysis. We would like to underline however, that in Energy Norway's view, a full CRM will rarely be needed and strategic reserves could do the job to ensure generation adequacy in transition periods.

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

*a. Should any criteria be added to this list?*

See question 20b)

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

The most important criterion for assessing any CRM is its effect on the energy only market and wholesale electricity prices, which should be minimized.

*Potential detailed criteria to apply to capacity mechanisms*

*1) The necessity for a capacity mechanism 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.*

Yes, interconnection capacity needs to be increased before CRMs are considered

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

No, a capacity mechanism should just address one single target: generation adequacy. Competition concerns are addressed in the 3<sup>rd</sup> package, which should be fully implemented by member states, and in REMIT.

- *European integration of day-ahead, intraday and balancing markets*

Additional bullet, market integration reduces the need for a CRM as described above

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

No. While it is in general positive to look for less distortionary measures, energy efficiency and/or the reduction of electricity demand do not improve generation adequacy unlike demand flexibility mentioned below in c). Generation adequacy is defined as balancing demand and supply at a given time, which requires momentary adjustments of demand to changes in production due to intermittent RES. Energy efficiency and/or reduction of electricity demand are long term processes not momentary adjustments.

Energy efficiency and/or the reduction of electricity demand are however important contributions to a long term sustainable energy system. As they can have an effect on long term demand development, those policies should be clearly communicated, to allow potential investors in generation capacity to form a clear assessment of future demand and production needs to make investment decisions.

In addition, we would like to point out, that energy efficiency doesn't necessarily mean a reduction of electricity demand. Electric vehicles using RES produced electricity are for example highly energy efficient, but a bigger share of electric vehicles could increase electricity demand.

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

Yes, as mentioned above. Demand flexibility can reduce demand when the system is under stress and so ensure generation adequacy by allowing supply and demand curves to meet. As such effective participation in the market is really important to functioning wholesale markets and should be fully supported.

*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.*

Yes, because a CRM should only be considered as additional to an energy only market system and only be introduced to ensure TSOs that generation adequacy can be met, if all other measures such as market integration, increased demand flexibility etc have not worked (yet). However, more explanations is needed on how "additional" should be assessed.

3) *The duration of the application of the capacity mechanism should be clearly limited and clearly specified,*

a) *The impact on the market of the introduction of capacity mechanisms should not make it difficult to reverse that decision in the future.*

Yes

b) *The necessity of retaining reinstating a capacity mechanism should be subject to review.*

Yes

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.*

Yes, if national mechanisms need to open to electricity undertakings operating in other countries. In order to do so, the possibility to reserve transmission capacity on the border must be allowed for participation in a neighbouring countries CRM.

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:*

i) *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).*

Yes, see also question 4 b

ii) *distorting the commercial behaviour of generators in the day ahead and intraday markets.*

Yes, this should be the most important criterion

iii) *distorting investment signals in the internal market leading to inefficient locational choices.*

Yes, although how a national CRM should be designed in order to not distort investment signals is unclear as they by definition almost automatically do so.

iv) *distorting investment signals in the internal market leading to the displacement of new investment from one Member State to another.*

Yes, see above iii)

b) *distorting dynamic incentives/crowding out;*

i) *The incentive on consumers or generators to respond to high prices at periods of scarce capacity should not be diminished.*

Yes, flexibility of both production and demand should be encouraged through market integration and other policies prior to the introduction of any CRM

ii) *The mechanism should not undermine incentives on the electricity market to deploy new techniques for demand reduction or electricity storage and generation.*

Preferably the term "demand response" or "demand flexibility" should be used rather than "demand reduction" (i.e.: demand is responding to price signals like generators whereas demand reduction is a long term process and does not imply momentary changes)

c) *creating market power or exclusionary practices;*

i) *The mechanism should not strengthen or maintain the market power of incumbent firms.*

As mentioned above, competition should not be targeted in a CRM. A CRM should be neutral, competition should be addressed through implementation of the 3<sup>rd</sup> package and REMIT.

ii) *The mechanism should not act to maintain inefficient market structures or undertakings, acting to deter new entry.*

Yes

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

a) *be allocated after an open competitive bidding process.*

Yes, it should be a capacity market, not capacity payments

b) *allow demand response and energy efficiency solutions to bid into capacity markets on an equal basis to generation.*

As generation adequacy is defined as balancing demand and supply in a given situation, there should be a clear difference between demand response and energy efficiency.

Energy efficiency leads to long term changes in energy use and has to be a part of a sustainable future system, but contrary to demand response it is not a momentary reaction that can help balance the system and as such ensure generation adequacy.

Demand response or demand flexibility however is a "short term" reaction and can be bid into the electricity markets. The introduction of demand flexibility in the electricity markets should be a policy measure prior to the introduction of CRMs. After that is done, CRMs should not discriminate between production and demand response, if they can offer the same product. A momentary increase of production by 100 MW has the same effect as a momentary reduction of demand by 100 MW.



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).*

Yes, CRMs should be neutral. In our view, there should be no other objectives besides generation adequacy pursued in a CRM, CRMs should be neutral in all cases.

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.*

Yes, CRM should aim to be as cost efficient as possible. That can be achieved by concentrating them on one single target (generation adequacy), keeping them neutral, reducing the number of parameters and allowing them to be self-regulated as much as possible and aiming for regional or open national solutions.

b) *Persons providing capacity under the obligation must not be overcompensated.*

Yes, as mentioned above capacity markets should be designed efficiently. In addition, capacity markets that allow capacity payments to go down to zero and adequate capacity assessments by the regulators taking into account market integration and interconnectors can reduce that risk.

c) *Any selection process in the mechanism should be conducted in a transparent, open and non-discriminatory way which is market based.*

Yes

d) *The duration of any compensation to generators under the mechanism should be clearly justified.*

Yes

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.*

However, customers should in the first place participate in the securing energy supply via demand side response in the electricity markets, which might make the introduction of a CRM unnecessary in the first place. Therefore a well-designed capacity mechanism should avoid “overcompensation” for generators as well as “double discount” for customers.

Best regards  
Energy Norway



Einar Westre



Andrea Stengel

Copy to:

OED (Norwegian ministry for Oil and Energy)  
NVE (Norwegian regulator)  
Statnett (Norwegian TSO)