

Response to the Commission's Interim Report of the Sector Inquiry on Capacity Mechanisms

July 2016

Introduction

There is much to agree with in both the body of the Commission's interim report and in its tentative conclusions. In particular, it is helpful that the interim report correctly sets out the real reasons for the current lack of investment incentives, the need for coherence in the delivery of European energy policy, the importance of a harmonized approach to reliability standards, and of a collective approach to resource adequacy assessment. However, as discussed below, in some instances the Commission's tentative conclusions do not adequately reflect the sentiments expressed elsewhere in the interim report. Furthermore, the preference shown for the widest participation in capacity markets in the interests of increased competition seems at odds with the requirements of Europe's decarbonisation goals, a conflict that needs to be resolved. More broadly, the interim report fails to frame the relevant challenge fully—to ensure security of supply *at lowest reasonable cost*—and thus overlooks certain critical considerations, such as the importance of adequately capturing the value of investment in capacity resources *with the best mix of operational capabilities*.

Need to address the real reasons for low investment

The interim report correctly identifies the principal reason for the current lack of investment incentives as surplus generation capacity brought about by the growth in renewables and simultaneous reduction in demand. This being the case, incentives to invest in the new capacity that will ultimately be required to replace ageing and carbon-intensive technologies, such as lignite and hard-coal, will best be improved by addressing the current capacity surplus and introducing energy market reforms, rather than by resorting to the introduction of capacity mechanisms. However, the language used in the Annex to the sector inquiry i.e. that "*Member States may choose to implement capacity mechanisms instead of tackling market failures*" suggests that Member States should be free to make that choice.

Despite the interim report's acknowledgment of the role of overcapacity in the industry's current woes, it grants unwarranted credence to industry claims that the near-zero short-run marginal cost of the growing share of variable renewables would in any case set prices at the production cost of renewables, thereby producing energy prices too low to support investment and, even in a properly implemented Internal Energy Market (IEM), inevitably doing so in the future. This completely ignores the fact that the energy market is meant to form prices based not simply on economic dispatch (i.e., the short-run production cost of the marginal generator) but on *security-constrained* economic dispatch (i.e., that the price will reflect the cost of both energy generation and of all other actions taken by consumers and by the system operator to meet the established reliability standard). It can be debated just how this intended price behavior will be achieved in practice, but the industry argument



The Regulatory Assistance Project (RAP)[®]

Beijing, China • Berlin, Germany • **Brussels, Belgium** • Montpelier, Vermont USA • New Delhi, India
rue de la Science 23 • B - 1040 Brussels • phone: +32 2 894 9300

www.raponline.org

that is repeated uncritically in the interim report is simply a deliberate misrepresentation of the current market design.

The interim report also grants unwarranted credence to a related industry claim—that an expected decline in the average utilization rates of conventional plant, acting in a “back-up” role, is proof that investment in whatever conventional plant may continue to be needed is untenable without out-of-market payments for capacity. This claim deliberately ignores the fact that the forecasted average conventional plant utilization rate described in the report can, and should reflect simply a reduction in the share of inflexible baseload generation, which is indeed untenable at the portrayed utilization rates, and a commensurate increase in the share of more flexible mid-merit and peaking plant. The forecasted average capacity factor should provide an adequate investment environment for a more flexible conventional plant fleet populated by a larger share of the mid-merit and peaking plants that have long been a feature of the European power system.

The interim report’s final conclusion recognizes the need for energy prices to reflect scarcity (which, it should be noted, occurs whenever and to the extent that the *combined* demand for energy and balancing reserves causes the supply of reserves to fall below the amount required to meet the established reliability standard), but only in regard to maximizing cross-border trade. While cross-border contribution is important, the rationale for improving energy and balancing market price formation is much broader in that it should be primary means of supporting the bulk of future investment, directly or, more importantly, by driving wholesale market actors to hedge market risks. Energy prices that reflect the real value that customers place on security (as reflected in the actions of system operators) will also encourage demand-side response, which will reduce investment needs and allow Europe’s energy goals to be achieved in a more cost-effective fashion.

It would be naïve to simply insist on improved energy market price formation, given the variety of improvements required, the time it may take to implement them, and the risks that they may not take full effect. In discussing possible ways forward in the near term, the interim report falls into the usual trap of considering only a binary choice between energy market reform and intervention with out-of-market capacity mechanisms. As has been well established in other markets, the risks of energy market performance can and should be reduced first by intervening administratively to ensure proper shortage pricing. It is well recognized that this is a form of capacity remuneration, one that expresses far more reliably than any others the true value of investment in flexible resources, including the various modes of demand response.¹ ***Given the fundamental importance of value-based pricing, the final report should use much stronger language in support of necessary market reform, preferably stating that the introduction of such reform should be made a condition of state aid approval for out-of-market capacity mechanisms.***

Furthermore, in considering capacity interventions the report should explicitly ***recognize interventions that directly address shortage pricing in the balancing markets (and indirectly in the energy markets) and that prioritize such mechanisms over more distortive out-of-market options.*** Such out-of-market options should then constitute a third-best measure of last resort. This would be consistent with the conclusion of the EU Commission that the introduction of capacity mechanisms should only be considered once wider market

¹ See, for example, U.S. Federal Energy Regulatory Commission. (17 October 2008). *Wholesale Competition in Regions with Organized Electric Markets*. pp. 90-143.

and regulatory reforms have been exhausted.² If however energy prices are to be allowed to reflect capacity shortages, it will be necessary to introduce enhanced market monitoring arrangements. Both customers and regulators will need to be confident that increased prices during periods of scarcity accurately reflect the underlying demand-capacity balance, are not the result of the exercise of market power.³

Need for a holistic approach

The Energy Union sets out a broad vision of a secure, competitive, affordable, and sustainable European electricity system. Making this vision a reality will require a holistic approach, where remedies to address specific issues such as security of supply are consistent with the whole and do not undermine or frustrate other elements of that vision.

In this context, the focus of the interim report on ensuring a non-discriminatory approach to capacity market access, with all technologies able to participate equally in the interests of maximizing competition, could frustrate other elements of the Energy Union vision. For example, the ability of lignite or hard-coal fired generation to access capacity payments on the same basis of less carbon-intensive technologies could extend the lifetime of this plant, which would be at odds with Europe's carbon reduction goals.

This potential for capacity payments to conflict with carbon reduction is recognized by the European Energy Advisory Group (EEAG) which states that "Member States should consider alternative ways of achieving generation adequacy which do not have a negative impact on the objective of phasing out environmentally harmful subsidies, such as demand management or interconnection." However, at the same time, the State Aid guidelines require Member States to design their capacity mechanisms to be non-discriminatory and open to all capacity resources so as to maximize competition. These requirements are clearly contradictory. This highlights the inherent tension in out-of-market capacity mechanisms between the need to differentiate capacity value based on capabilities on the one hand, and the importance of maximizing liquidity and respecting technology neutrality on the other, thus illustrating the superiority of energy market-based price intervention in ensuring security of supply at the lowest reasonable cost. ***The final sector inquiry report needs to provide guidance on how these competing requirements can be reconciled.***

The need for a collective approach

While some Member States forecast capacity deficits within their borders in the years ahead, it is clear from ENTSO-e's SO&AF data that Europe as a whole has a significant capacity surplus that is expected to persist well into the next decade.⁴ A more collective approach to resource adequacy assessment therefore offers the prospect of ironing out individual Member State capacity surpluses and deficits and reducing overall investment needs.

² European Commission. (2013). *Generation adequacy in the internal electricity market – guidance on public interventions*. SWD (2013) 438. Brussels: European Commission.

³ Keay-Bright, S. (2015). *Can we Trust in Electricity Prices? The Case for Improving the Quality of Europe's Market Monitoring*. Brussels: The Regulatory Assistance Project. Retrieved from <http://www.raponline.org/document/download/id/8175>.

⁴ Baker, P. (2015, October). *Resource Adequacy, Regionalization and Demand Response*. Brussels: Regulatory Assistance Project. Retrieved from <https://www.raponline.org/press-release/overlooked-assets-demand-response-and-a-regional-view-can-improve-power-reliability-in>.

The need to move away from a “self-sufficiency” approach to resource adequacy is recognized in the body of the interim report, but is absent from the tentative conclusions. While the EEAG already call for capacity mechanisms to allow access to external resources, there is no guidance on how this should be achieved. Even those Member States that do take external resources into account by assuming some interconnection contribution, tend to adopt overly conservative assumptions. It is therefore suggested that the final report includes a recommendation that ***detailed guidance on the calculation of cross-border support during periods of stress should be established, and that Member States should be required to follow this guidance in assessing resource adequacy requirements.***

Comparison of targeted and central buyer/decentralized obligation mechanisms

In comparing targeted and centralized/obligation-based capacity mechanisms, the tentative conclusions suggest that targeted mechanisms do not address underlying energy market failures. In fact, precisely the same can be said of centralized or obligation-based mechanisms, the need for which depends on those energy market failures.

The tentative conclusions go on to state that centralized/obligation-based mechanisms are best able to address long-term investment needs and allow competition between generation and demand response. However, a combination of market reform, administrative balancing and energy market shortage pricing, and a targeted out-of-market capacity mechanism also has the potential to ensure security of supply over the long term at lowest reasonable cost, provided the targeted mechanisms are properly designed.⁵ The combination of market reform, administrative shortage pricing, and properly designed targeted mechanisms also has the advantage of not distorting energy prices or cross border trade and of supporting the development of the right mix of flexible resources, including demand response. ***The final conclusions should be modified to reflect these realities.***

The role of demand response

Although the interim report recognizes the potential of demand response to contribute to resource adequacy, this is not reflected in the tentative conclusions. Experience from the U.S. and elsewhere indicates that demand response can play a major role in introducing economic flexibility, limiting the need for investment in conventional generation, and significantly reducing costs seen by consumers.⁶ For example, the PJM2012/13 PJM Reliability Pricing Model (RPM) auction cleared at \$16.5/MW-day with the participation of around 7 GW of demand response. It is estimated by the independent PJM Market Monitor that, without the demand side participation, the auction would have cleared at \$179/MW-

⁵ Targeted mechanisms such as strategic reserves should be designed so that they have minimum impact on the ability of energy prices to reflect the value that customers place on security of supply, while at the same time guaranteeing that security. This implies that that reserves should only be committed when the energy market fails to clear and at a price which fully reflects an administered value of lost load (VOLL).

⁶ Monitoring Analytics. (2010). *Analysis of the 2013/2014 RPM Base Residual Auction Revised and Updated*. p.52. Retrieved from http://www.monitoringanalytics.com/reports/Reports/2010/Analysis_of_2013_2014_RPM_Base_Residual_Auction_20090920.pdf.

day,⁷ suggesting a saving to consumers of around **\$12 billion** in that auction period alone. Analysis suggests that significant savings would also apply in Europe. For example, the UK National Infrastructure Commission calculate that demand response equivalent to 5 percent of peak demand would reduce system costs by some £200 million.

Despite these potential savings, it is clear from ENTSO-e's SO&AF analysis that many Member States do not take account of demand response when assessing resource adequacy, while those that do appear to underestimate the contribution that can be made.⁸ The sector inquiry ***should therefore adopt firmer language and require Member States to ensure that demand response is fully taken into account when carrying out resource adequacy assessments.*** It would also be helpful if the inquiry recommended ***that ACER in conjunction with ENTSO-e develop detailed guidance on how demand response should be factored into those assessments.***

Furthermore, as there is a general lack of information on demand response potential in Europe, it would be helpful if the inquiry called for a ***systematic Europe-wide review of the technical and economic potential of demand response to be carried out.*** It would also be helpful if the inquiry called for ***a systematic review of the many ways in which various Member States inhibit the entry of economic demand response, either deliberately or through a failure to recognize and address market barriers erected by incumbent market actors (e.g., the 50MW minimum bid size in certain German balancing market services).*** This would be helpful in allowing DG Competition to more accurately assess need when considering state aid assessments.

The UK capacity mechanism

Although not included in the Sector Inquiry, there are several references in the interim report and annexes to the UK capacity mechanism as an example of good practice. This is surprising, given that the mechanism has not delivered as intended and is in the process of being substantially modified.

The UK capacity mechanism was introduced at a time of capacity surplus. Consequently, and despite very conservative generator availability and interconnector contribution assumptions, the outcome was clearing prices that were too low to support investment in new CCGT plant—a good illustration of the dangers of premature introduction. In addition, the fact that the only generation capacity brought forward by the auctions to date is carbon-intensive diesel, illustrates the need for capacity market design to have regard to the totality of energy policy and not simply focus on security of supply. Finally, the inability of demand response to access the capacity market on the same terms conventional generation resulted in very little new demand side capacity being procured. Overall, the UK capacity market does not seem to be a particularly good example of best practice.

⁷ Gottstein, M. and Schwartz, L. (2010). *The Role of Forward Capacity Markets in Increasing Demand-side and Other low-carbon Resources: Experience and Prospects*. Montpelier, VT: Regulatory Assistance Project. Retrieved from http://www.raponline.org/docs/RAP_Gottstein_Schwartz_Roleof_FCM_ExperienceandProspects2_2010_05_04.pdf.

⁸ Baker, P. (2015, October). *Resource Adequacy, Regionalization and Demand Response*. Brussels: Regulatory Assistance Project. Retrieved from <https://www.raponline.org/press-release/overlooked-assets-demand-response-and-a-regional-view-can-improve-power-reliability-in>.