

Will national capacity mechanisms kill the single electricity market?

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Guest speakers **Simon Skillings**, Senior Associate, E3G; **Dominique Finon**, Director of Research, CNRS, CIRED; and **Marcel Cailliau**, GDF Suez discussed national capacity mechanisms and their potential impacts on the single electricity market.

Simon Skillings began the energy and climate exchange by giving an overview of the situation in the UK. Irrespective of the capacity markets issue, the different UK administrations have always wanted to have assurance of sufficient capacity ahead of time. The question then becomes, are capacity markets the method to achieve this? Currently, there is only an informal capacity regime in the UK which involves above marginal returns for generators through the use of market power by generators, arm-twisting, and, as a last resort, system operator capacity contracts.

The run-up to the election resulted in calls for a capacity security guarantee. The DECC did not have enough time to perform the thinking and analysis due to a rushed policy time-table. There was some concern over whether the market-wide solution would lead to a life extension of fossil fuels. However, there was no consideration on how the mechanism would impact the overall EU market.

The proposal was at first for capacity auctions for a strategic reserve but this caused a big push-back on issues related with a strategic reserve of capacity – everyone may shut capacity so they can have some of the capacity payment and you end up with a market-wide mechanism anyway.

A new consultation introduced a “reliability option.” The two options are a strategic reserve with many rules to prevent it from polluting the pricing, and a reliability option where a capacity payment is structured to provide incentive for capacity to be available when prices are high. Although the consultation period has finished, no decision has been made. The decision would need to be written down in legislation somewhere and therefore must include a description of the security objective (what the government wants – e.g. a security standard, an implied value of loss load). Responsibility will likely devolve to the system operators. Previously used simplifying assumptions carry with them the curse of the bell curve (black swan book). Tomorrow’s problem might be much different.

It is fruitless to define procurement or markets until you know what the products which you are buying are – short-term capacity and long-term generation adequacy are not the same. Even when we do know what they are, the world will move on. This won’t be a detailed exercise in econometrics to work out what the market will look like and what the mechanisms are. We are talking about an issue of institutions and governance. We need define a temporarily robust security of supply and to define institutions and governance to deliver this through changing times. The logic is that we are going through a major transition with major risks. The EU fits very neatly for the institutional and governance arrangements necessary to provide the parameters and constraints which are not being provided.

Next, Dominique Finon presented on the capacity mechanism proposed for France. A law voted upon last year has a provision for an obligation of capacity on suppliers, with a commission installed under RTE to make a proposal for a capacity mechanism. The design of the mechanism is a decentralized obligation on the supplier. To copy a bit the centralized mechanism with auctioning in PJM and in New England – there is

anticipation. The publication of obligation, in percentage, occurs four years before, during which time capacity certification could also be performed. Incentives are penalties on the suppliers. There would be a certification by RTE of generation capacity and demand-side resource between the date t_{-4} and the date t of delivery of the certificate. So the certificate covers existing capacity, new capacity, and demand-side resources, and there is ex post control of reliability and a penalty in the case of non-reliability during the peak-period of reference. There is also the possibility to exchange certificates. Progressive acquisition of certificates, possible as soon as the obligation is announced, may occur via three possible avenues: self-dealing with their own unit or demand-side resources/independent aggregators, bilateral exchange, or purchase on the organized market near the date of delivery. RTE would not be the organizer of this market. At the delivery date the control of the obligation and penalty payments is controlled by RTE.

The objective of the capacity obligation was focused on dealing with thermal sensitivity which is quite important in France. When the temperature is -2 or -3, each degree below requires 2 GW more. During winter, France imports a lot of electricity even though there is sufficient capacity. Presently, with the development of wind power more quickly in France, and with the phase-out of nuclear in Germany, this possibility to manage the thermal sensitivity via market integration disappears progressively.

The purpose of decentralized obligations is to make the supplier responsible relative to the load curve of their customers' portfolio. The level of the reference peak load of that portfolio will be the coldest winter in the past 20 years. There is incentive to act on the load as well – to develop dynamic pricing, remote command of load-shifting, and so on. RTE insists that load-shifting programs are easier to develop than installing a peaking unit. In France, there is a high degree of vertical integration. Existing law stipulates that drawing rights on nuclear plants must be attributed for a quarter of their capacity. Therefore, do capacity mechanisms increase market power in France – i.e. lock-in existing structure or helping it? They may create a very small and illiquid market for capacity certificates and prevent entry to the market. If there were a capacity requirement, entrants would have to negotiate contracts on two fronts: contracts on load with the customers and contracts on capacity with the suppliers. However, incumbents are vertically integrated and this poses the potential of self-dealing. Entrants need to know the load they will capture in order to negotiate capacity contracts with suppliers, but would need to know how much capacity they can provide in order to contract with customers. A vertically-integrated incumbent would have a huge advantage in this case and may be able to keep entrants out of the market.

Other electricity systems contribute to reliability via interconnections. Inside the commission, there were some people who wanted capacity outside France to be eligible for certification. One of the potential problems of a capacity mechanism, such as the French one, is that it might have influence on the internal energy market (with wholesale market coupling or a joined balancing mechanism which could develop in the future). The logic of the capacity mechanism is to shave the price-peaking. Load-shifting programs can quickly have effects on balancing price. One aspect of the French problem is that the load shape during peak periods with direct electric heating is very high. Another question is the possibility of reliability certificates coming from other systems. The third problem is the compatibility of other potential mechanisms elsewhere (potential locking due to incompatible mechanisms). There is positive interference between systems. RTE proposed to take this into account by defining the marginal reserve for every supplier four years in advance. The way that foreign system resources are taken into account is to have a discount on the margin of reserve, and an evolutionary assessment of this marginal reserve (to take into account the interconnection and the importance of intermittencies developing steadily in France). However, RTE does not individualize this as we would need a unity to individualize so the discount is a pragmatic solution.

In legal terms, there is no EU system of certification though we would need it to harmonize at the EU level. In addition, there needs to be a harmonization of criteria and objectives in order to discuss compatibility between systems. If these exist then the French project is consistent with an EU-wide market architecture of voluntary exchanges and bilateral trade. Other mechanisms such as a forward capacity market or a targeted mechanism are not as compatible with an EU-level approach.

Georg Zachmann then provided a summary of the presentations so far, pointing out that an important questions would be – how important will capacity mechanisms get? Will they be 5% or 90% of the market? And will the incompatibilities we will see in different mechanisms exceed the incompatibilities which already exist in the current systems.

Marcel Cailliau then presented on the question of the impact of national capacity mechanisms on the single electricity market. Eurelectric reports were published on whether capacity mechanisms were necessary and on how to integrate intermittent renewable sources into the EU system. The policy recommendations included letting markets function without regulatory distortions, integration of wholesale markets, and speed up the integration of Renewable Energy Sources (RES) by providing incentives for them to progressively enter into the market and be like any other market player.

Energy policies should enable market-based demand to participate in spot price formation. Additionally, policymakers should consider introducing a Capacity Remuneration Mechanism (CRM) where generation adequacy is in danger. These should be capable of being phased out once the market delivers appropriate investment incentives to ensure capacity. ACER and the European Commission should start working on the development of a set of minimum EU harmonization requirements.

Currently, there is a patchwork of EU CRM models and an unlimited number of variants. Different models do not disturb short-term market prices but may lead to cross-payments between customers and generators of different markets. This may create potential new congestions between markets and jeopardize market integration in the long-term. For example, if one market has more security of supply, than another, this may create situations where investors invest in areas where they can benefit from market capacity mechanisms. This may cause medium-term congestion. In the long-run, it is not possible to steer investments using capacity markets and they can even create instability.

Georg Zachmann then led a discussion on the topic. The main ideas which arose during the discussion were the ideas that:

- The main issues under discussion were renewables integration in the internal market.
- The least developed part of the model is the part related to balancing markets
- There is a big difference between UK and France in peak demand. The problem is that customers are not sensitive to prices. Capacity markets may be creating new problems to solve other problems. The correct way would be to correct the market mechanism already in place. One proposed solution should be taken at a time.
- The revolution of renewables should be taken into account. How will investments be incentivized?
- A Euro debate is necessary and should occur quickly on this topic. The product definition should be harmonized to avoid distortion.