EFET Position Paper

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The European wholesale electricity market: enhancing the market design without resorting to capacity payments

Background

The advent of energy liberalisation and competition throughout Europe over the last ten years has made the wholesale power market the linchpin of the electricity sector. It means that the wholesale price-discovery process must play a central role in maintaining a match between supply and demand. In electricity markets this process is complex, since storage opportunities are very limited and there is a corresponding need for instantaneous balance of the system as a whole in real time.

Meanwhile, a significant increase in renewable power penetration in parts of Europe has brought further challenges. Renewable sources and the preference afforded to them impose new demands on dispatchers of existing conventional generation plants, and on managers of the transmission network. These impositions reinforce the need for careful consideration of market design.

This paper sets out the EFET[1] position in this respect and, specifically, presents our preferred **"enhanced energy market design" (EEM)**.

Energy-only market design

Many EU Member States have implemented competition by establishing a form of "energy-only" market design with the following elements:

- Bilateral and exchange based trading of electricity (MWh) until day-ahead and intraday gate closures
- A residual balancing market (MWh) run by the system operator
- A supplementary market process for the sale and purchasing of fixed volumes of reserve capacity (MW) to enable system operators to deal with real time incidents[2]

[1] The European Federation of Energy Traders (EFET) promotes and facilitates European energy trading in open, transparent and liquid wholesale markets, unhindered by national borders or other undue obstacles. EFET currently represents more than 90 energy trading companies, active in over 27 European countries. For more information: www.efet.org

[2] In some cases, e.g. Germany, the balancing and reserve markets are combined

This market design has a number of benefits. Firstly, it rewards the correct type of capacity: generation that is flexible and reliable enough to respond to the needs of consumers and back up intermittent generation. Specifically, fluctuations in short-term wholesale and balancing market prices reward companies for retaining spare capacity (MW) via payments for producing energy (MWh) at short notice and on an intermittent basis. For the same reason, these so called "energy-only" markets also provide incentives to develop the capacity (MW) for demand response and energy efficiency in the face of high and volatile prices. Consumers, or their suppliers, have incentives to buy peaking plant options to hedge their exposure to real time prices. Coupled with their inherent simplicity, energy-only markets therefore best deliver the European Union's strategic vision of integrated, sustainable and competitive markets.

Energy-only markets are consistent with the Electricity Directive 2009/72 (and previous versions), which envisages generation investment being driven by the price-discovery mechanism. The Directive allows intervention by Member States in the market in the form of tenders for new generation capacity and equivalent measures. However, this is only in circumstances where the balance between supply and demand is proven to be demonstrably jeopardised (Article 8(1) Directive 2009/72).[3]

Alternative market design: capacity mechanisms

Some academic literature (e.g. Cramton and Stoft 2005)[4] argues that energy-only markets will potentially yield insufficient revenue to generators to cover the fixed costs of peaking plant – and even throughout the merit curve – if there are shortcomings in market design. In particular, the literature alludes to such risks arising from:

- A lack of accurate real-time measurement of consumption and limited prospects for the demand side to participate in wholesale markets

- The existence of bidding caps and floors (brought about by concerns over a dominant position of some market participants) leading to insufficient incentives on companies to maintain a match between supply and demand in their portfolio

As a result, some Member States have adopted an alternative market design including capacity mechanisms on top of the market in energy. Others are currently analysing the possible introduction of such a market design. In this model, some or all generation capacity (MW) is rewarded explicitly. This is

[3] Article 8(1) Directive 2009/72 : "[Tendering] procedures may, however, be launched only where, on the basis of the authorisation procedure, the generating capacity to be built or the energy efficiency/ demand-side management measures to be taken are insufficient to ensure security of supply."

[4] Peter Cramton and Steven Stoft. "A Capacity Market that Makes Sense" Electricity Journal 18 (2005): 43-54.

often accompanied by a compulsory day-ahead Pool market and central dispatch of generation.

There are several drawbacks with such an approach. For example, these capacity-related interventions hinder the development of reliable forward electricity prices, since they may bring about an expectation of persistent over-supply. This will reduce liquidity in the market and therefore the scope for meaningful competition. Capacity mechanisms also imply significant involvement of regulators and system operators in decisions about the availability and operation of generation plant. The potential for regulatory uncertainty thus created may deter non-incumbents (as investors, suppliers or traders) from involvement in the electricity sector.

In addition, if capacity mechanisms are focused on purely national considerations they will undermine a key benefit of the internal market, i.e. the use of generation capacity efficiently across the EU irrespective of national borders (with the aid of the interconnected high voltage transmission network and rules against discriminatory network access arrangements).

We fear that political and regulatory reliance on capacity mechanisms may induce doubts among suppliers and consumers alike about the liberalisation of the European electricity and gas sectors, and even eventually call into question the commitment of policymakers to a free market in energy inside the EU.

Conclusions

EFET considers an energy-only market design (complemented by markets for contracting reserve capacity) can assure a match between supply and demand. The signals given by wholesale energy prices can and should constitute the primary means of incentivising generation investment. The use of capacity mechanisms should be considered on a case-by-case basis only as a transitory measure, rather than ever being contemplated as a long term feature of the European electricity market design. Indeed the widespread adoption of such mechanisms risks interfering with implementation of the EU target model[5] which emphasises the role of cross border exchange of electricity in ensuring market equilibrium.

Whether capacity mechanisms are used or not, policymakers and regulators need to help improve the functioning of the mainstream wholesale energy (MWh) markets as follows:

- Remove explicit and implicit caps and floors on prices in wholesale spot and balancing markets and deal with possible dominance or abuse issues using normal competition law and market supervision processes

[5] As agreed at the 17th meeting of the Florence Forum (10-11/12/2009): http://ec.europa.eu/energy/gas_electricity/forum_electricity_florence_en.htm

- Better integrate renewable power production and supply into the wholesale market, ensuring that renewable producers are subject to the same balancing obligations as other market participants[6]

- Remove restrictions or unnecessary regulatory requirements on generation companies when operating their plant (specifically ramping or cycling of hydro and nuclear generation)

- Move intraday gate closure to H-1 in all Member States and facilitate access to intraday markets, especially on a cross-border basis

- Extend real-time metering and incentivise demand response: increasing the proportion of demand subject to real time metering should be a strategic objective for the European Union

- Further integrate geographic electricity markets in the EU, *inter alia* by obliging ever greater inter-TSO cooperation and harmonizing conditions for contractual and operational access to interconnection capacity. Continue to insist that TSOs maximize the availability of interconnection capacity, and that they offer it to the market as a firm product, subject to optionality of use

- Develop a stable and consistent energy policy framework for the extension of renewable energy penetration and the achievement of de-carbonisation targets

Such an "**enhanced energy-only market**" will lead to better price signals from the wholesale market for investment – both in new generation plant and demand response technologies. This approach will also efficiently reward flexibility. In these ways, efficiently determined electricity prices ensure that demand and supply can match and that an appropriate spare capacity margin will be maintained.

[6] As discussed in the EFET position paper: Effective integration of renewable energy in the European power market, December 2010.