

Security of Supply, Capacity Auctions and Interconnectors

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Energy policy aims to deliver security, sustainability and affordability, but of these three objectives politicians treat security of supply as over-riding. Given the need to instantly balance supply and demand in the electricity system, ensuring short term security of supply is normally an obligation placed on system operators, while longer term capacity adequacy is often the subject of regulatory and political concern. EU electricity markets are now liberalized, and generation is, for the most part, not subject to traditional utility regulation, but normal competition policy both domestically and under the scrutiny of DG Comp. If investment decisions could be solely guided by strictly commercial decisions and if markets were not subject to policy interventions or price caps, it is plausible that capacity adequacy could be delivered by profit-motivate generation investment without explicit policy guidance.

However, ambitious renewables targets that can only be met at present through support mechanisms, combined with an ineffective climate change instrument in the Emissions Trading System, make predicting future electricity prices subject to substantial political risk, while the large volume of renewables has driven wholesale prices below the long-run marginal cost of supply in many countries, undermining the attractiveness and ability to invest.

Absent adequately long-term futures markets for fuel, carbon and electricity, and given the stressed balance sheets on major electricity utilities, there has been a dramatic decline in willingness to invest in merchant unsubsidised generation, and growing concerns in some countries (the UK and Belgium most immediately) about

capacity adequacy. The UK approach has been to design a capacity auction to procure capacity four years ahead of delivery, following the examples from PJM and other US markets. Other countries like Spain and the Single Electricity Market of the island of Ireland also have various forms of capacity mechanism designed to deliver a security standard normally measured by a Loss of Load Expectation. However, there are considerable problems in determining how much capacity to procure, how best to determine the type of capacity to procure (from generation, the demand side or imports), and how best to remunerate it. The British example illustrates one approach to these challenges and demonstrates some of the flaws in leaving the volume decision to the political process.

In the past many (but not all) EU countries have aimed to be able to meet their peak demands from domestic supply, ignoring or under-playing the potential to import electricity over interconnectors. This can be expensive both in holding excessive capacity seen from an EU-wide perspective, and in failing to locate new generation in least-cost locations. The EU Target Electricity Model (TEM) aims to integrate electricity markets across the EU, and had by mid-2014 successfully coupled the day-ahead markets from Finland to Portugal, including Great Britain (but not the island of Ireland) in an endeavor to integrate markets and improve overall efficiency. However, National Grid in its role advising on the amount of capacity to procure assumed a zero net contribution from interconnectors, despite studies arguing that they might displace the need for domestic supply by 50-80% of their import capacity. As a result GB likely over-procured capacity, depressing future wholesale prices, adversely reducing its ability to finance renewables and undermining the case for needed interconnection.

One concern exercising the architects of the TEM is whether capacity markets adversely distort trade over interconnectors and if so whether there should be rules (over and above the normal State Aid Guidelines) governing the design of capacity mechanisms and their participation in cross-border trade. Member States benefit from efficient scarcity pricing when trading over interconnectors, but this is hampered by price caps on the European auction platform. It is therefore important for System Operators to agree efficient and trustworthy out-of-market arrangements for allocating interconnectors when the market fails to clear.

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