

Creating effective markets in power and gas

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European energy markets have come a long way since the early 1990s. But, according to Paul Dawson, Director at Barclays Capital, the sector has yet to fulfil its promise of highly competitive and liquid traded markets. The major challenge now facing the EU is to deliver on a range of diverse objectives.

Achieving full liberalisation in practice

The single market vision is of free and vibrant competition to produce and source electricity and gas across the EU via deep, liquid and transparent wholesale markets. Aside from further work on gas storage, the passage of the gas transmission regulation should largely complete a comprehensive EU legislative framework to underwrite EU energy liberalisation. All customers will have a choice of supplier from July 2007 and unbundling and regulated third-party access will ensure that all market participants enjoy non-discriminatory access to the delivery networks within, and between, Member States on economic terms.

Events on the ground, however, are struggling to catch up with this legislative vision. In the Commission's latest Annual Report on the implementation of the internal market, only five countries qualify as having 'no major issues' in the power sector (see Figure 1) or as having good performance in the gas sector (with only the UK and Denmark qualifying in both sectors). Most EU markets remain dominated by a small number of vertically integrated incumbents and there has generally been little appetite for wholesale restructuring of the sectors. Consolidation has further reduced the number of independent competitors across the EU, although the recent Commission prohibition on the acquisition of GDF by EDP and ENI signals the brakes coming on for further consolidation. Further competition across the borders between Member States continues to be constrained

by long-term contracts and arcane capacity allocation rules. While virtual power plant (VPP) auctions have offered some scope for competition, the limited ability to move power across borders and the low strike prices of the VPP 'options' has constrained the ability of purchasers to participate in the price-setting process by exercising the option of whether or not to 'generate' or to move power to and from neighbouring markets. Finally, outside of the UK and Nordic markets, retail competition remains more of a theoretical possibility than a practical reality and regulated tariffs and stranded cost recovery rules have left retailers with captive customer bases and little incentive to actively participate in the wholesale market.

The competition review by DG TREN and DG Competition later this year may yield initiatives to address these structural issues and to enhance competition. In the meantime, national regulators and the Commission could improve significantly the levels of cross-border competition by ensuring that the requirements of the electricity cross-border regulation are fully implemented and by improving access to essential market information across EU energy markets.

Figure 1 – Summary of main obstacles to competition¹

		Customer switching: Large Users
a) No major issues	SE, FL, DK, NO, UK	>50%
b) Unbundling/regulation	LU, AT, DE	range 10% (LU)—35% (DE)
c) Market structure or lack of integration	FR, BE, GR, IE, NL, LT, IT, SI, CZ, SK, LV	range 0% (GR)—35% (NL)
d) Long term PPAs/regulated end-user prices	PT, EE, PL, HU	range 0% (EE)—25% (HU)

¹ Source: 4th Benchmarking Report, Annual report on the Implementation of the Gas and Electricity Internal Market, Communication from the Commission, COM(2004) 863, 05/01/2005



Given that the UK gas market is still relatively transparent when compared with the rest of the European gas and power markets, the cost to EU energy consumers of poor information transparency alone is likely to run into billions of euros.

Meeting environmental objectives

Although liberalisation remains the main priority, EU regulators are increasingly looking to the energy sector to meet their environmental objectives and to maintain secure supplies. While these objectives have not always conflicted in the past as liberalisation precipitated excess capacity, lower prices and a switch away from coal-fired to gas-fired generation, there are likely to be significant conflicts between these objectives going forward as governments seek to keep prices low while promoting energy conservation and installing more renewable, CHP and, potentially, nuclear capacity. The key to achieving this trade-off will be to focus regulatory measures on internalising the 'externality' associated with emissions rather than to adopt a set of diverse, uneconomic and inconsistent measures targeting different production technologies or objectives. Taking the UK as an example, measures to mitigate carbon emissions include:

- the EU Emissions Trading Scheme which limits direct emissions of carbon;
- the UK Emissions Trading Scheme which limits both direct emissions and energy usage;
- The Renewables Obligation which requires electricity suppliers to buy increasing volumes of renewable electricity;
- the Climate Change Levy which includes tax exemptions for CHP and renewable output and discounts for large customers who have accepted 'climate change agreements' to restrict their direct and indirect emissions;
- the energy efficiency 'commitment' on energy suppliers.

Delivering effective cross-border access

The electricity cross-border regulation is a hugely powerful tool to fostering cross-border competition in the EU. Although the wording often represents a triumph of political compromise over regulatory clarity, the Regulation's requirements on system operators to release the maximum amount of cross-border capacity in a non-discriminatory, market-based fashion should have led to a brave new world of open capacity auctions at all borders from July 2004. Instead we have seen widespread inertia in implementing the Regulation and the continuance of arcane and discriminatory allocation methods such as priority lists. The Commission is working hard to address this situation via the 'mini-fora' satellites from the Florence Forum which are focusing on improved coordination between neighbouring markets and the implementation of the 'market coupling' model proposed by ETSO and Europex. However, while this focus on regional cooperation is broadly welcome, the emphasis placed on market coupling as the sole solution to cross-border issues raises several difficulties:

- Market coupling requires liquid day-ahead, exchange-based markets and may prove difficult to implement for areas with different market structures (e.g. the UK). Even where coupling is feasible, market participants have radically different views on whether, and how, to implement market coupling which could lead to prolonged delays or a failure to implement. In the meantime, many borders will continue to fail to meet the basic requirements for market-based capacity allocations.

- In its purest form, market coupling focuses on day-ahead congestion management rather than the allocation of cross-border transmission capacity and leaves market participants with the risk of significant changes to the price of transmission between the coupled markets. However, to compete effectively with national market players, cross-border participants need to be able to fix the delivered price of electricity – including the price of transmission – in advance. Although transmission rights are often presented as merely an optional 'extra' to the market coupling model, without these rights, market coupling will fail completely to materially improve cross-border competition.

Improving information transparency

Information transparency is crucial to realising the benefits of efficient, liquid wholesale markets. To compete effectively, market participants need to be able to take a forward view of likely supply and demand developments and to have a detailed understanding of how actual events influence prices. This requires transparent ex ante information on production capacities, maintenance schedules, demand forecasts and transmission availability in addition to real-time information on actual production, demand and cross-border flows. Outside of the Nordic and UK electricity markets, however, levels of information provision remain very low. According to our estimates, releasing more information in the UK gas market alone could save customers over £265 million per year in reduced trading risk premiums and better coordination of production and transmission outages.

If mitigating climate change were the sole objective, there is a strong argument for rationalising these measures around the EU Emissions Trading Scheme alone. With consumers already paying for the cost of mitigating carbon through the price of electricity, they are arguably being asked to pay twice to develop renewable and CHP capacity and to fund energy efficiency investment. Moreover, the development of multiple obligations and targets for specific technologies risks undermining market competition and liquidity, as the schemes – rather than market forces – become the primary drivers of investment and trading and further regulatory risk is injected into the sector. Adopting emissions trading as the primary instrument for mitigating carbon dioxide emissions would provide a consistent, economic incentive for fuel-switching and energy efficiency and allow other regulatory measures to focus on removing ancillary barriers to carbon mitigation, e.g. renewable technology development, building and vehicle standards and energy efficiency information.

Achieving secure supplies

Recent supply failures, although predominantly network-related, have led to heightened concern about whether markets alone can deliver sufficient capacity to underwrite supply security. Despite evidence that markets are indeed delivering significant new capacity, it seems likely that, in future, Member States will consider intervening in the markets to manage installed capacity levels. The ‘public good’ nature of energy security provides some theoretical economic backing for this intervention since for many customers, meters are not sufficiently sophisticated to measure consumption at particular times of the day and disconnections cannot always be targeted at those retailers and customers who have failed to purchase sufficient energy. Market price signals alone may therefore not deliver the desired levels of security. There are three broad categories of instrument that can be used to address this problem:

- An obligation on suppliers to purchase capacity in addition to their underlying energy purchases;
- System operators purchasing a capacity margin to protect against interruptions;
- ‘Scarcity pricing’, i.e. the inclusion of the value of losing load (VOLL) – which should equate to the value of additional capacity – into energy prices.

These instruments can, however, present significant problems which can potentially undermine liquidity in the underlying power and gas markets. For example, the establishment of parallel capacity markets would draw the liquidity from the basic energy market. Payments for ‘available capacity’ defined as a separate product from energy output, can also be open to manipulation and be difficult to enforce. TSO reserve purchases can also dampen peak prices, promote the early closure of plant that has not been contracted to provide reserve and undermine incentives for customers and suppliers to procure new capacity. This could result in the TSO procuring ever-expanding reserve volumes and the progressive unwinding of the competitive portion of the market.

As regulators strive to bolster security of supply, the key will be to ensure that any measures maintain the integrity of the underlying energy markets and that consistent price signals are sent to the market at times of relative scarcity either directly – through scarcity pricing – or indirectly by ensuring that the full economic cost of any TSO reserve purchases is borne by those market participants who rely on the TSO-procured reserve to cover their own requirements.