

Introduction to the UK Electricity Market

Competition in supply

Development of competition

Competition in electricity supply is developing well. An increasing number of customers are switching suppliers to get better deals. The switching figure for the domestic electricity market is higher than for telecommunications, financial services, mortgages and current accounts. The electricity market, despite being opened for competition later than gas, has now caught up with the gas market in terms of the extent of switching activity.

The introduction of competition was phased in over eight years because of the sheer size of the task in terms of the number of customers and the technical complexities involved. The first tranche of the electricity market, covering about 5,000 large customers with a maximum demand of 1 MW and above, was opened to competition in April 1990. Ten years later 81% of customers in this market were supplied by a non-local supplier. In April 1994 the second tranche of the market, covering about 50,000 medium size customers with a maximum demand of 100 kW-1MW, was opened to competition. In this market competition also developed well and now more than half of customers are supplied by a non-local supplier.

The last and the largest tranche of the electricity market covering about 26 million customers with an annual consumption of up to 12,000 kWh, so called 'designated customers', including domestic and small business customers, was progressively opened up for competition between September 1998 and May 1999. Two years after the introduction of competition in the domestic market around 11 million (38%) of domestic customers had switched supplier at least once. About 100,000 electricity customers are switching supplier each week, of these 56,000 in net terms are choosing to leave their former regional supplier, according to the latest Ofgem figures.

Profile of switchers

There is little or no difference in the degree of switching electricity supplier by method of payment, social class or income level. Switching rates among prepayment meter customers have caught up in the last year with those paying by cash or cheque. A MORI survey commissioned by Ofgem and conducted in September 2001 shows that around 44% of direct debit customers have switched supplier, 32% of quarterly credit customers and 31% of prepayment meter customers. Encouragingly, the C2DEs have switched at such a rate within the past year that there is no longer the significant gap between the upper and lower social groups which existed earlier. It also does not appear that special needs customers are missing out, with the disabled and single parent families switching now at rates higher than the average. However, pensioners continue to switch less frequently than others and competition is still less advanced in rural areas.

The proportion of customers who have switched more than once is growing, but fewer are returning to their previous PES supplier than last year. About 23% of customers have changed supplier more than once and of these about a third have returned to their original supplier.

The principal reason for not switching is inertia; many of the non-switchers are satisfied with their present supplier and see no need to change. Many non-switchers think that it may be difficult to switch, although switchers do not find this to be true. Only a tiny minority have actually tried and failed to switch.

Satisfaction with current suppliers is very high across different service areas with only 3% being dissatisfied. When compared to other service industries, electricity continues to deliver service at greater levels of satisfaction than average. The greatest satisfaction is related to the frequency and accuracy of bills. Customers who have switched supplier tend to be slightly less satisfied, but this may be linked to higher expectations.

Saving money continues to be cited as the main reason for switching supplier, although there seems to be some weakening in its importance relative to other reasons such as dual fuel offers, the possibility of combined bills, a desire to obtain better services and switching following an approach by sales agents.

The ability to receive electricity and gas from the same supplier is now the second most important reason for switching supplier. About 81% of customers who have switched now have the same supplier. Half of these have switched their gas supply to their existing electricity supplier. Ofgem has estimated that about 30% of all electricity customers are now on dual fuel deals.

As the competitive market matures, so does familiarity with different suppliers. Over 77% of electricity customers are aware of at least two suppliers and over a third (35%) of electricity customers recognise four or more suppliers. Although the awareness is improving, a fifth (19%) of customers are still only able to name one supplier.

Market share

There are 29 electricity suppliers licensed to operate in the designated market. Some of them have more than one licence and not all licensees have chosen to participate in an active way. Ofgem has estimated that 12 of the licensed suppliers are active in England and Wales and 10 in Scotland.

The market share of the ex-PESs in England and Wales has been declining steadily at about 10% a year and by the end of September 2001 they had lost on average about 30% of customers in their own areas. The market is more concentrated in Scotland. Although the market share of the two ex-PES suppliers is declining they still hold 77% of the Scottish supply market. British Gas Trading is the only company that has gained a significant share in Scotland. The MORI survey has shown that Scottish customers display greater brand loyalty than customers in England and Wales.

Mergers and acquisitions have resulted in consolidation of the domestic electricity supply market, particularly over the last year. A number of ex-PESs' supply businesses have been drawn together under a single ownership, increasing the market share of the new owner. There are now seven supplier groups created from the former PESs through merger and acquisitions compared to 14 PESs at the outset of privatisation.

The companies with the largest market shares are those which own more than one ex-PES supply business, and also British Gas Trading which has acquired all its customers through sales, e.g. doorstep selling and telesales. Innogy, through the acquisition of Midlands Electricity, Yorkshire Electricity and Northern Electric's

supply businesses has increased its customer base, emerging as the largest supplier with a market share of 19%. British Gas Trading is the second largest supplier with a share of 17%, followed by TXU, which owns Norweb Energi, with a share of 15%. Scottish and Southern Energy with SWALEC's supply business follows with a share of 14%. LE Group including the former SWEB supply business and ScottishPower, which owns Manweb, both have a share of 10%. Powergen Energy has 8% of the market while SEEBOARD has 6%. The remaining suppliers account for 1% of customers. The four largest suppliers between them have about two thirds of the domestic market.

British Gas Trading, with the advantage of being a national organisation, has attracted more than half of the switchers to date over a wide geographical area. In addition Innogy, Powergen, ScottishPower and Southern Electric are other suppliers which have attracted customers over a large area. Otherwise supplier switching is largely regional in nature, with neighbouring suppliers being the most popular alternative.

New licensed suppliers, such as Virgin Energy, Saga, Union Energy, Severn Trent Energy, and others have so far a relatively small number of customers. Together they account for only 300,000 customers.

A worrying development for suppliers is the growth in the rate of 'churners', customers who fail to stay with a supplier after switching and move to another supplier, which can undermine growth in acquisition rates and revenue. The emphasis on price as the main driver, although still dominant, is decreasing, with customer service rising as the influence. The bundled services option not only reduces the likelihood of customers switching, as it ties the customers in, but also creates more value out of the retained customers.

Mergers and restructuring have brought the branding dilemma. Energy companies have adopted a range of different solutions in response to this challenge, e.g. from no change, dropping a regional brand in favour of a national brand or creating a completely new identity. London Electricity and SWEB, for example, have decided to supply under the existing brands, while TXU has opted for a national brand of TXU Energi after acquiring Norweb Energi supply business. Powergen decided on a new name, Powergen Energy, as did Innogy trading under the name of npower.

The market is changing with product bundling and home services gaining ground. The rivalry between competing suppliers has been enhanced by the new marketing alliances which have developed with organisations outside the electricity industry such as Tesco, Sainsburys, Barclays Bank, Air Miles, Goldfish, Age Concern, BT etc. Some affinity deals particularly with retailers, such as Tesco and Sainsburys, have had some success in gaining new customers, but in general they appear to have been less successful than had been expected.

Wholesale market

The structure of the wholesale market

The new electricity trading arrangements, NETA, based on bilateral trading between generators, suppliers, traders and customers, were introduced on 27 March 2001. The new arrangements operate like other commodity markets, whilst making provision for the electricity system to be kept in physical balance at all times so as to maintain security and quality of supply. The different elements of NETA are as follows:

- forward and futures markets that allow contracts for electricity to be struck up to several years ahead;
- short-term power exchanges which give participants the opportunity to 'fine tune' their contract positions for each half-hour in a simple and accessible way;
- a Balancing Mechanism, which opens at Gate Closure (3½ hours before real time), in which the National Grid Company (NGC), as System Operator (SO), accepts offers of and bids for electricity to enable it to balance the transmission system;
- a Settlement Process for the settlement of accepted Balancing Mechanism offers and bids, and for recovering the SO's costs of balancing the system and charging participants whose contracted positions do not match their metered volumes of electricity.

Under NETA, the bulk of electricity is traded in forward, futures and short-term markets through bilateral contracts. These markets allow contracts for electricity to be struck over a scale of time ranging from within-day to several years ahead, enabling participants to secure cover for their likely output or demand at competitive prices. Only small volumes, about 5% of total demand, are subject to arrangements in the central Balancing Mechanism, used by National Grid to balance the system.

Participants must notify the SO about their expected physical position, i.e. planned generation output and demand for each half hour trading period, by 11:00 am one day ahead. These initial physical notification (IPNs) help the SO to assess the likely position of the system. The final physical notifications (FPNs) must be submitted to the SO by Gate Closure, at present 3.5 hours before real time. The participants may also notify their willingness to deviate from their intended operating level in exchange for payment, and submit bids and offers into the Balancing Mechanism.

As well as achieving an overall physical balance of electricity supply and demand, the SO may also need to accept bids and offers at short notice to maintain the quality of supply at different locations to overcome transmission constraints. Participation in the Balancing Mechanism is on a voluntary basis, but those wishing to participate must sign the Balancing System Code (BSC), which provides a set of rules to ensure efficient balancing of the system. The SO may also contract ahead for balancing services. These system costs, including costs of any forward contracts for balancing services, are recovered from all signatories to the BSC through balancing services use of system (BSUoS) charges on the basis of their metered generation and consumption.

The position of all BSC parties is assessed through the imbalance settlement system to determine whether their metered output or consumption of electricity matches their contracted position. Participants who are out of balance, potentially imposing balancing costs on the SO, are charged imbalance prices. The price paid or charged to 'out of balance' market participants varies depending on whether they are over-contracted (or 'long') or under-contracted ('short'). The price is calculated as the volume-weighted average price for each half-hour. The costs of any balancing contracts used by the SO to maintain a balance of overall supply and demand are also included in the calculation of imbalance prices.

The BSC covers the rules that govern the balancing mechanism and the imbalance settlement process. The BSC includes flexible governance arrangements to allow for modification of the rules in the light of the operational

experience of NETA. ELEXON, a wholly owned but uncontrolled subsidiary of National Grid, was established to be responsible for the operation of the BSC. ELEXON's role covers the management of the contracts with providers of NETA services, administration of the new arrangements and processing of proposed modifications to the BSC and market rules. Modifications will be reviewed and agreed by a 14-strong panel representing generators, suppliers, retail customers, Ofgem, National Grid, distributors and independent advisers.

One of the key features of NETA is that unlike the former Pool where National Grid centrally despatched generating plant, generators now self despatch and are subject to imbalance prices if their generation does not match their contracted output. The increased exposure to the risk of plant failure has resulted in a greater emphasis on the reliability of generating plant.

Another key element of the new arrangements is that the demand-side is fully incorporated into the new balancing arrangements. Suppliers and customers may offer load reductions to the BM in direct competition with generators. This should encourage suppliers to try to understand their customer demand more fully in order to manage their out of balance position and make them more responsive to customers' demand requirements. Large customers seem to be playing a more active role in the market. National Grid has entered into contracts with large demand side sites and is beginning to call on offers from customers in the Balancing Mechanism.

New markets

The introduction of NETA has resulted in the rapid development of a large, transparent wholesale market, similar to the way other commodities are traded. Forwards, futures and spot markets are evolving in response to the requirements of participants and a number of power exchanges have been established, where buyers and sellers come together to trade energy and energy-related products. Participants, which include utilities, energy retailers, generators, aggregators and power marketers, now have much greater choice in how, where and when to trade electricity and this has led to an increase in trading liquidity.

There are three main power exchanges that have developed since the introduction of NETA: the UK Power Exchange (UKPX), the UK Automated Power Exchange (APX) and the International Petroleum Exchange (IPE). Of these, the UKPX and UK APX provide a spot market while the UKPX and IPE both offer futures contracts. The vast majority of trading on the exchanges has been through the spot markets, with participants actively using these markets to fine tune their contractual position as their uncertainty reduces. The power exchanges are open 24 hours per day, seven days a week with access available either through the Internet or by leased line.

The UKPX futures market was launched in June 2000 and the spot market on 25 March 2001 – two days prior to the start of NETA. The exchange provides a 'one stop shop' for electricity trading, clearing and notification with both futures and spot contracts traded on the same exchange. UKPX membership has grown over the last year from 15 to 43 and reflects a mix of interests with players drawn from both the generation and supply sides of the power industry and trading companies. Five brokerage firms are also UKPX members.

The UKPX is the largest exchange in terms of volume traded. It currently trades in the region of 850,000 contracts a month, representing about 430 GWh of electricity. The exchange offers trades cascading from futures to half-hour contracts for a 1 MW flow over the period, which are traded from the start of the



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day until the time of Gate Closure for a respective half-hour. The daily traded volumes on the UKPX remain fairly constant. UKPX futures contracts will convert to the 23:00 to 23:00 daily format as retained by the electricity industry after NETA. This change should improve liquidity on the UKPX and facilitate the use of UKPX futures as hedges for OTC forward contracts. UKPX will also introduce Block Hour contracts that mirror the EFA blocks commonly used by power traders, complementing the half-hourly contracts listed on the UKPX spot market.

The UK Automated Power Exchange (APX) was launched in conjunction with NETA. It operates an internet-based exchange, which offers a 24-hour spot market comprising continuous trading on the day, 4-hour block traded in 1 MW lots, half-hour contracts and week ahead contracts. Continuous trading helps participants to manage unforeseen events and lends stability to market prices. APX is the only exchange provider to offer full services that include anonymous bidding, scheduling, credit management, settlement, and price discovery. It currently trades about 400,000 contracts a month totalling 80 TWh. In comparison with the UKPX the daily traded volumes are more volatile. In addition to online exchanges, other online trading platforms have developed which offer both buyers and sellers more choice of counterparties and are transparent in their disclosure of prices to the market real time. Enron Online and Spectron Live were the first online platforms to be launched, and were also the two most active screen based platforms for electricity transactions. Online transaction platforms have helped to improve liquidity by widening the range of players who are able to trade and have allowed smaller players to enter the trading market.

The majority of forward trading under NETA has been conducted through the over-the-counter (OTC) market. NETA has seen a significant increase in liquidity in the OTC trades both in terms of the total volumes traded and in the variety of products on offer. There has been a 315% increase in the number of contracts traded compared to 2000 and a 517% increase in the variety of products offered. The number of different products on offer for a range of time scales from spot contracts to seasons and annual baseload contracts rose from 24 to 148. Activity is increasing across and along the forward curve, suggesting that participants are actively trading energy forward, securing their energy requirements many months and even years in advance.

In addition to increased liquidity, NETA has also created a more transparent market. A number of price reporters, for example, Heren, Platts and Reuters, have entered the market and forward prices are available through a range of media at different costs.

Scottish trading arrangements

There is no market mechanism for trading electricity between generators and suppliers in Scotland. This reflects the fact that ScottishPower and Scottish and Southern Energy own, or have under contract, 98% of available generation. The wholesale electricity trading between the hosts and second-tier suppliers has been regulated since 1990 through a price cap agreed between the regulator and the two Scottish companies. The prices for imbalance trades, 'top-ups' (when a third party needs to buy generation from the host to supplement generation bought from independent parties), and 'spills' (when a party has excess generation) have also been settled at prices agreed between Ofgem and the two companies.



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Historically, the Scottish administered pricing arrangements have used England and Wales Pool prices as a basis for electricity trades in Scotland. The introduction of NETA has required Ofgem to agree a revised market price with ScottishPower and Scottish and Southern Energy. Interim price arrangements were established for the period 27 March 2001 to May 2001, and these were then amended.

The regulator has sought a price which is representative of medium to long term contracting actions in England and Wales and should be able to be hedged. The first interim price cap was defined as an energy component plus balancing services use of system (BSUoS) supplier charges less 1.5%. The energy component was derived as 90% weighting from a monthly over the counter (OTC) index, 7% weighting from a time-weighted daily power exchange price and 3% weighting from time-weighted daily averages of SBP and SSP. The parties agreed to review the definition of the energy component in the light of contracting actions in various markets under NETA.

Following a consultation process it was agreed that the price cap would continue in the same format for the period 27 May 2001 to 31 March 2002. The energy component, however, was based on a composite index of month-ahead prices, using weighting to reflect the significance that the various price reporters have in the market. This was as follows:

- a composite derived from EFA month ahead price indices in England and Wales published by Spectron, Argus, Heren and Platts and with weightings of 40%, 20%, 20% and 20% respectively; and
- the flat monthly price to be shaped by the UKPX power exchange half-hourly price profiles.

The Scottish top-up price was set at the System Buy Price in the Balancing Mechanism in England and Wales plus the balancing services use of system supplier charge and a residual cash flow reallocation, capped at the Scottish wholesale price until June 2001. Thereafter the cap will be Scottish wholesale price plus 5%.

The Scottish spill price shall be the System Sell Price with a floor of £10/MWh. It was agreed that spill volumes in excess of 20% of second-tier market demand would receive no payment. ScottishPower and Scottish and Southern Energy would buy the output of existing <2 MW generators at the energy component price within the Scottish wholesale market.

Ofgem hopes to extend the New Electricity Trading Arrangements (NETA) and the transmission access and pricing arrangements under development in England and Wales into GB-wide arrangements. These are referred to as British Electricity Trading and Transmission Arrangements or BETTA, and will replace the present administrative arrangements in Scotland. The intention is that BETTA will deliver free trade in electricity throughout GB, opening up the Scottish market to more players and allowing the Scottish companies to compete in a wider GB market.

The task of extending NETA into Scotland is complex and the regulator has been reluctant to put a date on the introduction of BETTA. A number of legal, political and technical issues need to be resolved. Some observers favour 2004 as the date for the introduction of NETA. This will be a year after the Scottish General Election and the year in which the Coal Agreement between the two Scottish companies ends.

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