

# Agenda

Advancing economics in business

## Energy supply markets: are they competitive?

**Increasing energy retail prices in Great Britain have raised concerns about ineffective competition and possible anti-competitive behaviour in energy supply markets, with an investigation into these markets being launched by Ofgem. In light of this inquiry, this article assesses the competition concerns that are likely to be discussed in relation to energy retailing, the methods that may be used to assess their presence, and potential remedies**

With the increase in retail prices for domestic consumers by all the major energy suppliers in Great Britain since the start of 2008, consumer interest groups such as energywatch have raised concerns about the lack of effective competition in the energy sector.<sup>1</sup> Subsequently, Ofgem launched a 'market probe' to investigate certain aspects of the functioning of the energy supply markets.<sup>2</sup> Notably, these price increases have seemingly coincided with increases in some firms' reported profits.<sup>3</sup>

Ofgem expects to complete its study by the end of September 2008, at which point it may make a market investigation reference to the Competition Commission under the Enterprise Act (2002). Alternatively, Ofgem could launch its own market investigation.<sup>4</sup> Typically, market investigations involve a thorough analysis of the relevant market definitions and their concentrations ('structure'); the behaviour of firms in the market ('conduct'—ie, how vigorously firms compete); and even an analysis of firms' profitability (financial 'performance'). Depending on the findings, one or more remedies may

be applied, ranging from measures designed to increase transparency for consumers (eg, clearer billing information), targeted limits to firms' commercial behaviour, or even fundamental changes in the market structure (eg, asset disposals). Certain remedies could materially affect business valuations.

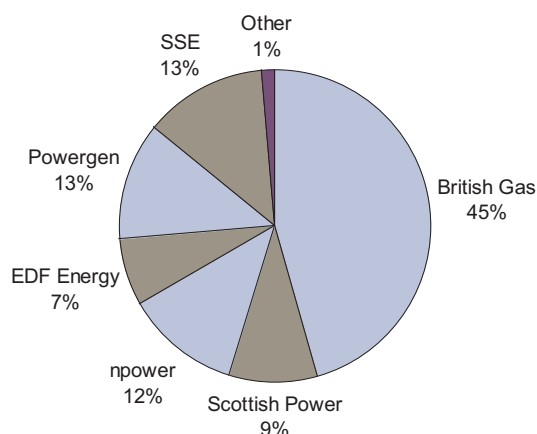
A perennial problem associated with market inquiries of this kind is untangling the interrelationships between structure, conduct, and performance in order to identify what, if anything, should be done to tackle any shortcomings in the operation of individual, or closely related, markets. The remainder of this article highlights some of the competition issues that could be raised in the course of a market investigation.

### Structure

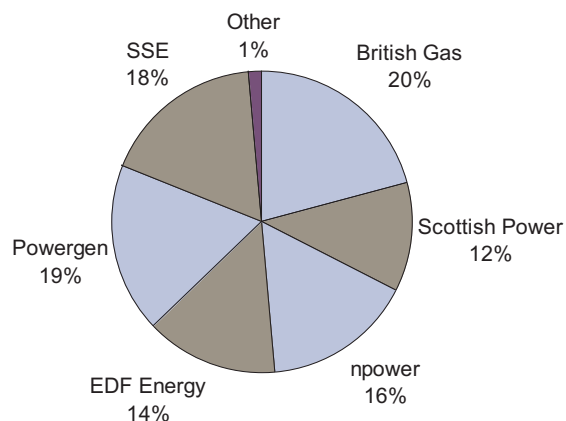
Energy supply markets in Great Britain are characterised by the presence of six large suppliers alongside a 'fringe' of smaller firms (see Figure 1), with a six-firm concentration ratio of nearly 100% in both electricity and

**Figure 1 Market shares**

#### Gas



#### Electricity



Source: Ofgem (2007), 'Domestic Retail Market Report', June, Figure 2.1.

gas, assuming a GB market definition. Although market shares of individual firms may in some circumstances provide an indication of their 'dominance' or market power (ie, the ability of firms to unilaterally or collectively raise prices profitably), this analysis is frequently unsatisfactory for a number of reasons.

- Market shares alone do not take account of other features of the market that may augment or mitigate market power. For example, the mere threat of new entry, and the presence of powerful upstream providers of factor inputs (eg, upstream oil, gas, and coal providers) and concentrated buyers (or coalitions of customers) may affect the extent to which firms would be able to exercise market power.
- The presence of vertical integration across supply chain segments or conglomerations of electricity and gas businesses may not be motivated by the desire of incumbents to erect entry barriers or otherwise foreclose access to upstream inputs. Instead, the integration of different business units operating in various markets may be welfare-enhancing to the extent that it reduces transactions costs, passes on synergy benefits (eg, economies of scale and scope) to customers, overcomes the challenges associated with certain investments (principally large 'sunk' costs), or internalises otherwise 'external' costs arising from illiquid or incomplete markets (eg, security of supply). These potential benefits of vertical integration are recognised as particularly important in certain segments of the energy sector, although the European Commission has proposed ownership unbundling in the case of transmission networks.<sup>5</sup>
- The current structures of GB energy supply markets and their evolution since privatisation<sup>6</sup> may not provide an indication of why retail prices or firms' profits have increased over time (if indeed they have done so). For example, higher and more volatile international energy prices (ie, coal, gas and oil) may have simultaneously increased all firms' costs and their risk exposures.
- Finally, in the case of GB electricity supply markets, the move from 14 regional electricity suppliers in 1998 (when the markets were fully liberalised) to six major retailers today may not represent a marked increase in concentration, let alone a significant reduction in competition. This would be particularly the case if, over the same period, the market definition in energy retail has shifted from regional to national (GB) in scope, following the introduction of the British Electricity Trading and Transmission Arrangements in 2005. Moreover, the expansion of interconnection capacity to other European electricity markets (eg, Belgium, France, the Netherlands, Republic of

Ireland) could expand the market definition still further in future.<sup>7</sup>

The analysis of market structure alone does not provide a sufficient basis for concluding that markets are not competitive, given that it is not possible to determine a single causal relationship between high market concentration, anti-competitive conduct, and 'excessive' profitability. Consequently, Ofgem may need to investigate specific modes of competitive behaviour directly.

## Conduct

Are prices charged by energy companies excessive? Are energy groups abusing their dominant positions by erecting (or maintaining) entry barriers to potential competitors? Are energy retailers discriminating unduly between customers, or are they otherwise discouraged from switching suppliers? These are some of the questions raised by Ofgem in launching its energy supply markets probe.<sup>8</sup>

### Are energy retail prices 'excessive'?

Energy retail prices can increase for a number of reasons unrelated to the effectiveness of competition or the presence of anti-competitive behaviour—eg, through changes in the input costs of energy suppliers.<sup>9</sup> Wholesale costs were estimated in 2004 to constitute around half of domestic gas retail prices and one-third of electricity prices, and are therefore likely to be a key component of retailers' costs that are investigated.<sup>10</sup>

However, it is difficult to establish a clear relationship between retail and wholesale prices since suppliers may have very distinctive contracting strategies involving forward and spot contracts of varying maturity, many of the details of which are commercially sensitive. As far as domestic customers are concerned, suppliers may also actively try to smooth retail prices, knowing that customers value both low and stable prices. Consequently, a simple comparison of spot wholesale and contemporaneous retail prices may not be particularly informative.

Regardless of whether prices are reflective of international or regional increases in energy prices, particular concerns have been raised by energywatch in relation to energy retailers being 'unconstrained by competition from passing [wholesale] costs on to the consumers'.<sup>11</sup> While it may be expected that at least a small proportion of input cost increases could be passed through to retail prices, if energy retailers were substantially constrained from doing so, they would be forced to absorb any cost increases, or perhaps cut operating costs in response. However, if the market were competitive, market participants would already be as efficient as current technologies allow, suggesting that all

input cost increases would need to be passed to customers in the form of price hikes.

This is shown in Table 1, which summarises how the mode of competition and the (a)symmetry between competitors play a role in determining the expected degree of pass-through of input cost shocks. Interestingly, in the presence of symmetric cost increases across all firms in a market, full pass-through of costs is expected in a market with perfect competition, although this is not the case where energy procurement strategies are highly asymmetric. The picture is more nuanced for oligopolistic competition, where cost pass-through is more a matter of degree.

The implication of this is that, contrary to the concerns of energywatch, the seeming readiness of energy retailers to pass on energy price increases to customers does not necessarily reflect the lack of effective competition. Cost pass-through behaviour could be a feature of both the market structure and the energy procurement strategies adopted by different retailers. In any case, and as mentioned above, it remains unclear exactly how much cost pass-through has taken place thus far.

**Are entry barriers to new entrants high?**

Reducing entry barriers could be an effective policy response to promote further retail competition. However, not all entry barriers are necessarily erected by incumbents—they may instead be innate features of the economics of the energy sector. As a result, certain structural features of energy markets may be as much a cause as a consequence of the degree of observed new market entry.

One feature of the GB energy markets is the prominence of vertically integrated firms engaged in electricity generation, certain aspects of the gas supply chain such as gas storage, as well as downstream electricity and gas supply. This has prompted concerns that independent electricity generators or gas producers may not have sufficient downstream access to justify new upstream investments, and/or new retail entrants may

not have sufficient access to incumbents’ upstream assets. This potential disbenefit of vertical integration would need to be weighed against benefits in the form of possible synergies.

Quantifying the net benefits of vertical integration is likely to be complex, particularly since the purpose of vertical integration is in part to enable firms to manage the substantial market risks associated with highly volatile energy prices. To the extent that energy price volatility has increased due to concerns about falling North Sea gas production, international oil and coal price volatility, and the (in)security of supply of Russian gas, it is possible that the benefits to the current GB energy market structure have increased relative to the potential disbenefits in the form of wholesale market (il)liquidity (and the consequent impact on opportunities for new entry by independent suppliers).

Indeed, it is possible that on grounds of cost and risk minimisation, vertical integration is an efficient market structure for energy supply markets, and any attempts to break down vertical integration to promote new entry may be, on balance, detrimental to overall consumer welfare. This was the conclusion of the Swedish energy market regulatory authority in its recent study of the impacts of increased separation (including ownership unbundling) of electricity generation and retail activities.<sup>12</sup> Instead, the Swedish authority called on energy firms themselves to improve market transparency by providing more information on the financial and operational performance of their various business units involved in different supply chain segments and in different national or regional markets.

**Do energy firms price-discriminate unduly?**

A particular concern raised in the Ofgem inquiry has been the ‘competitiveness of suppliers’ pricing in the different market segments’.<sup>13</sup> Price discrimination—eg, charging different prices to different customers for the same product, or charging the same price to different customers when the costs of supply differ—is not necessarily a market abuse, since it can be

**Table 1 Theoretical links between market structure, competition, and cost pass-through**

Nature of cost shock	Perfect competition	Oligopoly
<b>Symmetric</b> All suppliers have similar energy procurement and contracting strategies	Full cost pass-through	Partial cost pass-through
<b>Asymmetric</b> Suppliers have widely differing upstream procurement and contracting strategies	Zero cost pass-through If price is increased, rival firms’ prices would remain unchanged. Consumers would switch to rivals and the firm would be forced to exit the market	Partial cost pass-through, although less than with symmetric cost shocks. If price increased, other firms may also raise prices, as firms’ pricing behaviour depends on their rivals. Therefore, not all consumers would switch to rivals, and a partial price increase in response to cost increase is possible

Source: Oxera analysis.

welfare-increasing when it improves investment incentives by aiding the recovery of sunk or fixed costs. This comes about by charging customers with inelastic demand (including 'non-switchers') higher prices, and lower prices to those with elastic demand (including repeat 'switchers'). However, when price discrimination undermines competition by charging lower prices to customers who are more likely to switch, this is a legitimate concern for the competition authorities.

As regards detecting the presence of price discrimination, the first step in a probe into energy supply would be to determine whether price discrimination is taking place at all, or if price differentials are the result of differences in costs for servicing different categories of customers (eg, higher costs of servicing prepayment meters compared with direct debit accounts) or customers in different geographic regions (eg, differences in transmission costs). Profitability analysis for different categories of customers and geographic regions would provide an indication of the cost-reflectivity of tariffs. However, this is likely to be complex given the challenges in allocating the costs and assets used to serve particular customer groups.

To the extent that prepayment meter customers, senior citizens, or those customers on lower incomes are less likely to shop around, these groups may be particularly exposed to the competition-limiting effects of price discrimination.<sup>14</sup> It is conceivable that this could exacerbate fuel poverty concerns, although this would perhaps be less relevant in the context of a market investigation.

## Performance

The challenges involved in identifying market failures or specific instances of anti-competitive behaviour in the energy supply markets are likely to be substantial. Equally, devising remedial actions that are effective and that do not remove the benefits associated with the current market structure is also likely to be difficult, and perhaps not without some risk to increasing end-user prices, rising price volatility, or deteriorating security of supply. Profitability analysis does have a number of features that makes this technique attractive in the course of market investigations, although it may not be universally applicable.<sup>15</sup>

Profitability analysis captures the outcomes to all forms of market power, namely high profits derived from prices that are not cost-reflective. However, it would be important to check that the results of any profitability analysis were not simply due to inefficient operations. In addition, a firm's profitability may be understated if several business units with different risk characteristics are analysed collectively, since this means that 'excess' profits could be difficult to attribute to a single business

unit with low risk (because observed profit should be low relative to committed capital).

Applying profitability analysis to specific business units held within a wider group is likely to be complicated by the difficulties associated with the allocation of joint and common costs (and assets). Furthermore, the assets themselves may be difficult to identify and value as in the case of 'intangibles' such as marketing expenditures and 'brand value', IT systems, and working capital for trading and risk management activities.

Overall, this suggests that, while profitability analysis may provide a useful adjunct to conventional structure and conduct assessments, it may be challenging to apply in the case of energy supply markets. In addition, it may not provide effective guidance as to what remedies to apply due to the difficulties in identifying the mode of market failure (ie, why competition is ineffective), and the presence or type of abuse.

## Remedies

This article has identified a range of issues that may need to be addressed by Ofgem or the Competition Commission in the course of the present market probe or in a future market investigation, but what could be done to improve energy supply competition? Although no firm policy proposals can be put forward until the inquiry is complete, several possibilities emerge from past experience and recent developments in other countries and sectors. Some of these are outlined below.

First, as with the European debate over ownership unbundling of energy transmission networks, greater separation of generation and retail segments is one possible response to the concerns over sufficient access to generation capacity by prospective electricity supply entrants. Although this approach could increase competition, it would need to be weighed against the possible negative effects on investment incentives, as the Swedish energy regulatory authority concluded in its recent study on this issue. Similarly, the European Commission did not make a case for this remedy following the energy sector inquiry. Integration of upstream and retail activities in the gas sector is less prevalent, so this remedy would have a somewhat more limited application in the gas sector.

A second, related, remedy would be to require greater access to wholesale electricity and gas through mandatory capacity release schemes, applied to firms either on account of their market power, or their collective foreclosure effect. Again, while this remedy could increase wholesale market access to new supply entrants, it is not clear whether it would be possible to demonstrate that any of the vertically integrated suppliers are, in fact, dominant. Moreover, it is not clear



whether access to wholesale electricity or gas capacity would be enough to increase supply market entry since a range of complementary services could also be required (eg, 'balancing' power, and flexibility services provided by access to gas storage). Access to bundles of such services would be difficult to mandate.

A third option could be to apply ex ante regulation selectively—eg, by introducing retail price controls for vulnerable customer groups, such as the fuel poor. Alternatively, limits could be placed on incumbent retailers from acquiring further retail customers or participating in capacity release schemes (eg, generation capacity, gas supplies, or interconnector capacity). These measures to limit firms' commercial freedoms may be targeted at firms once their market shares in either national or regional markets exceed some pre-determined threshold. These 'trigger' mechanisms have been used in other EU Member States, particularly to aid the transition to a fully liberalised supply market. Currently, such a proposal is being debated in the Spanish and Portuguese electricity market, whereby limits to commercial freedoms such as those cited above would be put in place for 'dominant' incumbents.<sup>16</sup>

Finally, Ofgem could focus on measures designed to reduce customers' search and switching costs. The importance of these types of remedy was highlighted in one study that found that 20–32% of energy switchers selected more expensive suppliers.<sup>17</sup> This suggests that policies designed to increase both the transparency and availability of information on prices could have a

dramatic effect by increasing the efficient functioning of energy supply markets. For example, recent investigations into several retail financial services markets by the Competition Commission have adopted remedies related to the provision of clearer pricing and billing information to customers.<sup>18</sup> Moreover, the UK Financial Services Authority has recently required retailers of financial services to provide 'suitability letters' to customers, explaining why specific products being offered to them are likely to meet their preferences or requirements. Somewhat analogously, Ofgem could require energy retailers to set out in customers' bills whether alternative tariffs provided by other retailers could save them money.

## Conclusion

In recent months, the prevailing concern about the energy supply markets has been the ineffectiveness of competition and the potential presence of anti-competitive behaviour. With oil prices currently above \$100 per barrel, and coal prices above \$100 per tonne, a highly competitive energy market would produce a high marginal price to end-users. It is perhaps not surprising that companies are facing greater scrutiny as bills rise, particularly given the difficulties in linking wholesale and retail price movements. The challenges facing Ofgem (and potentially the Competition Commission) in this case relate to both the ability to identify the mode of market failure or market abuse, and designing remedies that do not undermine market efficiency, including investment incentives and security of supply.

<sup>1</sup> energywatch (2008), 'energywatch Renews Call for Competition Commission Probe as British Gas Profits Soar', February 21st.

<sup>2</sup> Ofgem (2008), 'Ofgem Launches Probe into Energy Supply Markets', press release, February 21st. The BERR (Department of Business, Enterprise and Regulatory Reform) Select Committee also launched an inquiry into energy prices on February 5th 2008, although it does not have powers to enforce behavioural or structural remedies.

<sup>3</sup> See, for example, Centrica (2008), 'Preliminary Results for the Year Ended 31 December 2007', press release, February 21st.

<sup>4</sup> Ofgem has powers to investigate companies that it considers may be in breach of the Competition Act (1998), Electricity Act (1989), or the Gas Act (1986). See Ofgem (2007), 'Enforcement Guidelines on Complaints and Investigations', September 27th.

<sup>5</sup> European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', January 10th.

<sup>6</sup> British Gas was privatised in 1986. The regional electricity companies in England and Wales were privatised in 1990, and the Scottish public electricity suppliers were privatised in 1991.

<sup>7</sup> Platts (2008), 'UK—Continent Interconnector Plans Multiply', *Energy Economist*, 317, March, p. 44.

<sup>8</sup> Ofgem (2008), op. cit.

<sup>9</sup> Some of the issues that regulators must consider in relation to input prices are dealt with in 'Regulatory Foresight: Input Prices and the RPI – X Approach', also in this month's issue of *Agenda*.

<sup>10</sup> European Commission (2004), 'Third Benchmarking Report on the Implementation of the Internal Electricity and Gas Market', DG TREN Draft Working Paper, March, Graph 10.

<sup>11</sup> energywatch (2008), 'energywatch Asks: "How much higher will energy bills go before Government acts?"', press release, January 15th.

<sup>12</sup> Energimarknadsinspektionen (2007), 'Åtskillnad mellan handel med el och produktion av el', in Swedish, November, p. 30. Available at: <http://www.energimarknadsinspektionen.se/>.

<sup>13</sup> Ofgem (2008), op. cit.

<sup>14</sup> Ofgem (2006), 'Domestic Retail Market Report—June 2005', Appendices, Tables 3 and 4, February 7th.

<sup>15</sup> See Oxera (2007), 'Assessing Energy Supply Profitability: Does a Margins Approach Make Sense?', *Agenda*, April. Available at: [www.oxera.com](http://www.oxera.com).

<sup>16</sup> Comisión Nacional de Energía, Entidade Reguladora dos Serviços Energéticos, Comisión Nacional del Mercado de Valores, Comissão do Mercado de Valores Mobiliários (2008), 'Definición del Concepto de Operador Dominante: Metodología y Aplicaciones', February 7th.

<sup>17</sup> Wilson, C.M. and Waddams-Price, C. (2007), 'Do Consumers Switch to the Best Supplier?', CCP Working Paper 07-6, July. This occurs even when the switchers' stated aim of switching is price reduction rather than other qualitative factors such as switching to suppliers with better brand value or a lower level of complaints, for example.

<sup>18</sup> In particular, see Competition Commission investigations into store card credit services (2006), home credit (2006), and Northern Irish personal banking services (2007). Available at: [http://www.competition-commission.gov.uk/inquiries/reference\\_type/market.htm](http://www.competition-commission.gov.uk/inquiries/reference_type/market.htm).

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