Policy Exchange

research note
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Knowledge is power: securing transparency in Britain's liberalised energy market

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Executive Summary

Public faith in Britain's liberalised energy market is near an all time low. This perception has been driven by recent energy price volatility, market opacity and the belief that the energy companies are ripping off consumers. 85% of people now doubt whether they are receiving reasonable prices from their energy suppliers.[1]

This is a serious political issue and one that will become ever more important given the significant challenges the energy market faces over the coming decades. The twin challenges of decarbonisation and ensuring security of supply will place long-term upward pressure on the prices paid by consumers.

Given this outlook of rising energy prices, if the Government wishes to sustain Britain's liberalised energy market, it must reassure consumers that prices are proportionate and reflect the real costs faced by energy suppliers and generators. If this isn't done, public support for the significant investments needed to meet the challenges of security of supply and climate change will be undermined.

In March 2009, Ofgem made recommendations on the information consumers should receive, making it simpler, and banning "unjustified price differences."[2] The workable recommendations only go a small way to improving the situation and should go further; the ban on unjustified price differentials raises questions about definitions and judgement which may render the ban unworkable. Slightly better information and driving questionable practices from sales will not address the long-term challenge of restoring faith in the liberalised market in an era of increasingly expensive energy. We need to go much further if we are to make the energy market transparent for consumers.

In addition to improving consumer information, market transparency for potential new entrants and existing energy companies is crucial if we are to ensure free and fair competition within the energy market.

Information in the market is extremely limited, as the Business and Enterprise Committee noted in their report last year.

Given that much of the UK's energy infrastructure is due for replacement over the coming decades, enabling diverse players to enter the market is good for security and diversity of supply, as well as competition. It is also vital if we are to reassure the regulator, government and customers that the major energy companies are not indulging in anti-competitive behaviour. All of this is fundamental to the ability of the liberalised energy market to deliver what it is supposed to do, which is lower prices than other market models such as statutory monopoly.

In order to help alleviate the crisis of confidence in Britain's liberalised energy market, we recommend the following measures that together will help to significantly improve transparency:

- **Consumers should know how much energy they use as well as how much they pay relative to other consumers that have similar usage levels and patterns but are with different suppliers or on different tariffs.** Knowledge of comparable energy prices will help drive market engagement by consumers by allowing them to assess whether they are paying over the odds. This information should be on the annual statements proposed by Ofgem.[3]

- **With the potential impact of smart meters, the principle that the consumers' data is theirs rather than their supplier's should be established.** At present, consumers rely on their energy supplier to inform them of how much energy they consume. The forthcoming rollout of smart meters, which will make much more information more easily available to consumers, offers an opportunity to radically change how they engage with the market. Owning their consumption data is critical to this, establishing the principle that the consumer can get accurate, reliable quotes from a variety of suppliers based on their own patterns and levels of consumption.

- **To have confidence that retail energy prices reflect real and reasonable costs as well as those created by government policies, a breakdown of the components of a bill should be disaggregated on the annual statement.** There should be a clear breakdown of costs, in particular government-imposed environmental costs, as well as an indication of profit margins. This information should be tailored to each energy supply company and be available for comparison, as far as possible under competition law and with regards to commercial confidentiality. The impact of volatile wholesale markets on consumer confidence will be lessened if consumers have a clearer idea of where costs are generated. Consumers will also have a much better idea of how much they

pay for existing Government policies, such as the Carbon Emissions Reduction Target (CERT) and Renewables Obligation (RO).

- **Energy companies should be required to have separate regulatory accounts for the generation and supply parts of their businesses.** Opening up the cross-subsidisation between generation and supply will improve information in the market at very little cost. This will make the market more transparent and make the threat of entry into the market (and thus competitive pressure) much more credible. As energy infrastructure is replaced and decarbonised, new entry into the generating market may well flourish with the availability of non-traditional renewable, micro-generation and decentralised energy technologies. Establishing transparency and openness is vital to making this transition a success.

- **The British government should continue to press for the liberalisation of European energy markets as a major priority.** This has been a policy of governments for decades without coming to fruition. While there are moves in the right direction from the European Commission, these are painfully slow and subject to delay and blocking by some governments. It is in Britain's national interest and in the interests of consumers across Europe, that this agenda be pushed forward.

Introduction

"Fleeced by the power giants: gas, electricity and oil prices plunge – but your energy bills are *still* higher than ever" declared the *Daily Mail* last winter.[4] This is not a one-off headline; rather it highlights an emerging majority view of the state of Britain's liberalised energy market. Public faith is near an all time low and this perception has been driven by recent energy price volatility, market opacity and the belief the energy companies are ripping off consumers. 85% of consumers agreed that price rises are "merely the energy companies profiteering from the current global market."[5]

This is a dire situation and one that should be of serious political concern. Energy bills make up a significant proportion of households' disposable income, so the electorate notices when prices rise and fall.[6] The need to increase trust in the liberalised energy market is especially important given the tremendous challenges facing the energy sector now and over the coming years.

The rapid decline of North Sea reserves and the knock-on effect of a growing dependency on foreign supplies (in the order of 60-80% by 2020) are combined with the need to replace a significant proportion of UK generating capacity.[7] The energy sector must be decarbonised through significant investments in nuclear, renewables and carbon capture and storage, costing an estimated £234bn.[8] Investments in transmission and distribution networks are also required to maximise efficiency. In addition, investment is needed to increase domestic gas storage capacity, which will be essential if we are to ensure security of supply as we transition from an era of energy self-sufficiency to one of dependency. While some of these costs will be met through general taxation and government support for projects, much will be paid through consumers' bills. All of this will have an impact on energy prices and their only likely long-run direction is "sharply upwards."[9]

Given the outlook of rising energy prices, if the Government wishes to sustain Britain's liberalised energy market, it must reassure customers that prices are proportionate and reflect the real costs faced by energy suppliers and generators. If this is not done, public support for the significant investments needed to meet the challenges of security of supply and climate change will be undermined. Customers will just feel that they are being "ripped off" even more than they have been in the past.

This research note investigates the options available to government, Ofgem and industry to improve transparency in the liberalised energy market. A range of improvements to consumer information are considered first, from better information on bills to ownership of data and honesty about the impact of taxes and wholesale markets. Going beyond information, the nature of the market is considered. Improving

transparency in the market should both improve its functioning but, perhaps more importantly, enable consumers and other third parties to have confidence in it.

Section 1: Consumers and the market

Consumers need to have adequate information to take advantage of competition in the energy market. Notwithstanding the complexity of hedging and the relationship between wholesale and retail markets, they need to be able to compare their tariff with those offered by competitors. Ofgem's proposals to produce a simple annual statement with the tariff name, the consumer's consumption and costs for the previous year and projected future cost, along with a reminder of the right to switch supplier are a step in the right direction.[10] These are, however, minor recommendations which will make only a marginal difference. The three recommendations made below will empower consumers further. Data ownership is going to be an important issue as more and more information on energy use becomes available, in particular with the roll-out of smart meters. Ensuring that consumers can control and own usage data, rather than the energy companies, will ensure that they can get the most out of the potential offered by smart meters and find the best deals. Using social norms to "nudge" people to improve their energy efficiency is a well-recognised idea. This can be expanded to nudge people towards engaging in the market, using comparative information on an annual statement. Finally, transparency as to the levels of tax, costs and profits on energy bills would help consumers make assessments about high prices, as well as government environment and energy policies.

From annual statements to smart meters

Energy is an unusual product in that the consumer has to expend a not inconsiderable effort to accurately monitor how much they are using. Energy bills do of course show usage for the billed period, but these are not always from actual readings and the information often is not comparable across different tariffs. For consumers to accurately navigate the market they need to know how much energy they typically use. Currently, consumers are told by energy suppliers how much they have used, but are not provided with the long-term energy usage information necessary for a useful comparison between tariffs.

Consumers should have the right to know how much energy they are using, and to have the right to use that data however they wish. Access to accurate information about energy consumption should be seen as a basic entitlement for customers. An annual statement, as proposed by Ofgem, with annualised information about their usage is the bare minimum they should be entitled to.[11] Accurate and readily accessible data about individual usage is vital for being able to successfully navigate the market and should rest with the customer, not the supplier. This report therefore recommends that the proposed annual statement be introduced with more comparative data than Ofgem have proposed.

Smart meters have gathered cross-party support.[12] By offering much more information to consumers, as well as giving more immediate access to this data and enabling suppliers and National Grid to have better information on demand in real time, smart meters have the potential to significantly reduce energy usage as well as offering demand management as a tool for managing the grid. The information they will be able to provide has significant benefits for consumers, for example by enabling much more accurate quotes. Once they are rolled out and ways to exploit the new information have developed, smart meters could make annual statements obsolete for many consumers.

Smart meters could be rolled out in Britain within ten years.[13] Consumers should be able to get much more accurate quotes using their own data from their smart meter than is currently possible. This will help to allay fears about switching energy provider inappropriately. Consumers who rely on sales people to drive their switching will be better equipped to make a good comparison and highly pro-active consumers will have much more information to take advantage of the competitive market. To enable this to happen, this report recommends that the principle that consumers own their energy consumption data be established.

Social norms

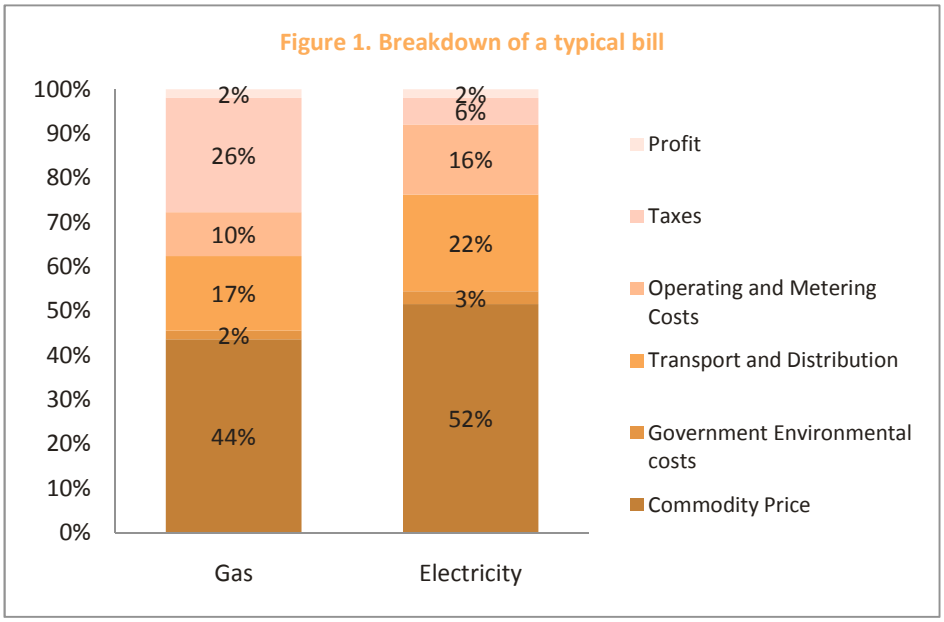
Comparing energy consumption has been shown to be a powerful driver of behaviour change. Consumers told how much energy they use in comparison to their neighbours have been shown to use less.[14] This is attractive because no-one is compelled to reduce their energy usage, but most end up doing so nonetheless.

In this vein, consumers would benefit from knowing how much households with similar usage patterns are being charged for their energy. Knowing that you are paying more for the same amount of energy should encourage people into the market more effectively than reminding them that they are able to engage with it. Ofgem should be tasked with providing this information to all consumers.

Comparing households raises methodological issues for selecting the comparison, because how households are compared will have an impact on which households they are compared to.[15] For example, consumers could be categorised into bands of consumption levels and compared to an industry-wide average for that band for pricing. In the experiment cited above, simple neighbourhood-level averages for energy use were used to good effect. This will be easier to do once smart meters have been introduced, because each household can use their consumption data as well as knowledge of their own circumstances.

Unravelling energy bills

An annual statement must be clear and honest about how energy is priced. At present, the proportion of the cost of a bill that is made up of the wholesale, distribution and operating costs before taxes and profits is not widely known. A clear breakdown from each energy company of the components of bills would go some way to allaying fears of profiteering. This should be placed on the annual statement. Figure 1 below shows the estimated breakdown of cost for gas and electricity in a typical year.[16]



While most people will be aware of VAT on fuel, the impact of Petroleum Revenue Tax, the Carbon Emissions Reduction Target (CERT) or the Renewables Obligation (RO) is not widely known. Public scepticism about green taxes is entrenched, with 62% of people considering them as principally for raising revenue rather than changing behaviour.[17] Taxes and prices in energy are also opaque for much of the public, effectively making these stealth taxes. The recent budget trumpeted its £1.4bn green spend, much of which will come from either general taxation or indirectly by increasing costs on energy suppliers, such as the reform of ROCs banding.

Demonstrating what proportion of their bill is made up of profit compared to taxes and the wholesale, transport and distribution costs, should reassure consumers that they are not being taken advantage of by energy companies. Volatility in the wholesale market will inevitably undermine consumer confidence if it is unclear how it affects profit margins, making this level of transparency important. The last recommendation for consumer information is therefore that this information should be included on the annual statement.

Section 2: Market structure, transparency and competition

The benefit of better information for consumers will be minor if the market is flawed. Ensuring the market is free and fair from undue influence by the big players is at least as important as improving consumer information. The market is not perfect and has several aspects which could be improved, namely transparency and the possibility of entry. The combined market share of the big six in supply (99.7%) and, to a lesser extent generation (67%), presents a potential problem when combined with the lack of transparency in the market. Structural issues around the relationship between UK and European markets are also a problem, although given the length of time spent on opening up European energy markets to competition without much achievement, addressing flaws in the British market holds better prospects for improving transparency and the prospects for new entrants.

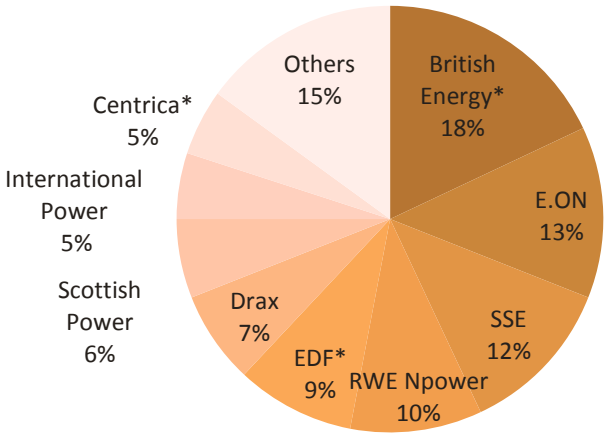
Because most electricity generated within the big six is sold internally between different parts of the same vertically integrated company, there is less liquidity in the wholesale market than would otherwise be the case. This means that independent generators may struggle to sell their output easily and at a fair price. What is more, the independent generators are heavily influenced by the big companies' existing positions because most of the generation output is sold internally. The spot market is used to balance differences between the contracts and the actual balance of supply and demand needed at the time, which is where the independent companies come in.[18]

Box 1. The history of the supply and generation markets[19]

Supply and generation are different but linked markets. Supply in this case means supply of electricity to customers, either business or domestic, while generation is the step before that – actually generating the electricity itself.

At privatisation two companies, Powergen (now E.ON) and National Power (now RWE npower), were created to own and operate the UK's non-nuclear generating plant. The evolution of the market was driven by the regulators and government

Figure 2. Market share in generation, 2007



forcing these two companies to divest some of their generating capacity in exchange for being permitted to merge with supply businesses, which had previously been the regional electricity boards.[20] EDF's takeover of British Energy, and the proposed sale of 20% of BE to Centrica, would produce figures of EDF 23.4% and Centrica 8.6%, assuming other companies stayed equal.[21]

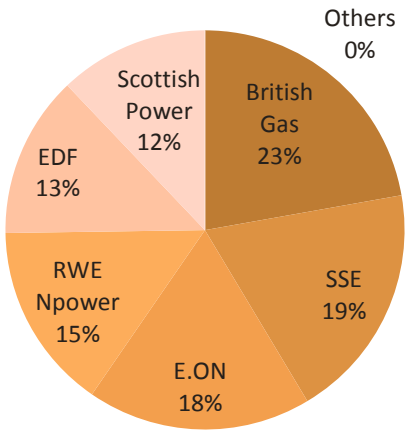
As the supply businesses invested in gas turbine generating plant and the generators bought up supply businesses, the market emerged into the form it has today, with six supply companies sharing almost the whole market and a more diverse generating sector. Since the reform of the market in 2001, there has been very little new entry into generation, leading to the position of the incumbent electricity generators.[22]

Table 1. Generation capacity by company and generation type for the largest 6 companies[23]

EDF + British Energy	Centrica	E.ON	RWE npower	Scottish and Southern	Scottish Power
8 nuclear (8683 MW)	7 Gas (3414 (MW)	3 Coal (4910 MW)	3 coal/coal gas (4607 MW)	59 Hydro (1359.2 MW)	8 Hydro (126 MW)
3 coal (5940 MW)	2 Wind (114 MW)	8 gas/gas oil (3327 MW)	10 gas/gas oil (2990 MW)	8 gas/gas oil (3260 MW)	2 Coal (3456 MW)
5 gas (840 MW)		19 wind (196.09 MW)	2 oil (3023 MW)	11 wind (314.3 MW)	5 Gas (1926 MW)
1 other (40 MW)		3 other (1344 MW)	9 other (64 MW)	Other (169.9)	19 Other (846 MW)

The major reform of electricity markets in 2001, the New Electricity Trading Arrangements (NETA), was intended to improve the functioning of the market. While there were improvements in some areas, the shift to vertically integrated companies dominating the market led to different possibilities for the large companies to optimise their profits within the rules.[24] Supply is a less diverse market than generation, reflecting the changes in the market since privatisation.

Figure 3. Market share in supply, 2007



UK and European markets

Why are the energy markets so volatile? Part of the reason is that the UK is rare in Europe in having a liberalised market largely driven by spot prices rather than long-term fixed price contracts typical of European markets. This exacerbates volatility in the British market because we receive what is left after fixed contracts between major gas exporters (such as Norway and Russia) and importers have been satisfied. This means that the UK receives lower prices when there is excess supply, but that British consumers are hit much harder than those on the Continent when there is insufficient supply or excess demand.

Price signals which lead to the UK exporting gas to Europe do not work well in reverse. Exports from the Continent to the UK do not flow at a similar price because of legal requirements in continental markets to store gas which increases the price at which selling back is sufficiently profitable. By providing last-resort supply, but not receiving reciprocal supply when the UK market is short, the UK is suffering from "being the gas bank for North West Europe".[25]

The traditional response of the British Government has been to call for the liberalisation of European energy markets. While this could be effective in smoothing volatility across a wider market, it is unlikely to happen imminently. The European Union first proposed the liberalisation of energy markets in 1992, but there has been very slow progress since. Frustrating as it may be, this report recommends that the government should continue to press this issue for as long as necessary.

An alternative, complementary strategy has been to extend interconnections between the UK and Europe, in particular Norway, and investing in Liquefied Natural Gas (LNG) facilities, allowing imports from the Middle East. The UK has far less gas storage than most European countries because plentiful North Sea supplies made it unnecessary. With at most 15 days' of storage capacity and dwindling North Sea supplies, gas supply may be put under severe strain in cold periods as demand and prices increase across the whole European market.[26] Developing adequate storage is part of the challenge facing government and the industry, and one that may entail significant costs, adding to pressure on prices.

LNG imports into the UK have not been as large as the investment in new capacity could handle, with LNG making up less than five per cent of imports.[27] While the infrastructure is now in place to expand imports of LNG, the global market for imports is competitive, meaning that we may not be able to guarantee supplies reach the UK. Given recent disputes between Russia and Ukraine, access to suppliers outside Europe is necessary for our energy security but not sufficient to guarantee security of supply or low prices.

Over the long term the liberalised energy market has produced lower gas prices in the UK than those charged in mainland Europe, with electricity prices around the mean for the EU15 and G7.[28] This is essentially what privatisation was meant to achieve, in the context of excess supply and plentiful fuel.[29] Falling prices in the 1990s can be seen as vindication for liberalisation, although by the same logic the increases and volatility of recent years may call this into question. That the success of liberalisation rested on very benign conditions of plentiful North Sea reserves and existing assets for sweating does not inspire confidence in the future when neither of these conditions will still hold.

Transparency and vertical integration

Transparency is vital for confidence in the fair operation of markets. Information about prices, how companies cross-subsidise various parts of their businesses and how they earn their profits allows regulators, competitors and customers to assess whether the market is free, fair and competitive. In a non-transparent market, anyone with better information about the state of the market is at an enormous advantage over others.

The lack of basic information in energy markets was highlighted in the Business and Enterprise Committee's 2008 inquiry, which failed to find a consensus on what proportion of gas delivered to the UK is openly traded rather than delivered for long-term contracts. Ofgem, Energywatch and Shell gave wildly varying estimates, leading the committee to note that "the absence of consensus on such a basic characteristic of the market makes it difficult to reach secure public policy conclusions about desirable interventions."[30] If there is a severe market information problem then transparency, effective competition and the possibility of new entry will all be seriously undermined. The committee had serious concerns about the gas wholesale market, in particular its lack of forward trading and liquidity.

Given that the only market participants with market knowledge are those companies who dominate at present, it is not surprising that there are suspicions about whether the market is as competitive and fair as it should be. This raises the situation where, as one consumer organisation put it, "due to the current lack of transparency it is not possible, for Which?, or another party, to conclude whether … price rises are fair and proportionate" which undermines consumer confidence in the market.[31]

Vertical integration reduces information available to new entrants about the likely margins on both generation and supply sides of the business, making the threat of profitable entry much less credible. It also allows significant blurring of costs between generation and supply sides of the business, allowing cross subsidies. Bizz Energy, who are now in administration, claimed that the big generators were highly reluctant

to offer their output for sale as they, "do not want to deal with you because all you are going to do is compete against [their] supply business."[32]

Independent players in generation are more noticeable, although this is partly due to the enforced divestment of existing capacity from PowerGen and npower to allow them to merge with former local monopoly supply companies. This raises the possibility that, as with the "dash for gas" of the 1990s, generation could see a wave of new entry under a permissive regulatory regime. The need to replace and green the UK's power infrastructure does in some ways present an opportunity to do this, but also raises the issue of finance, because the companies best placed to replace the present infrastructure are probably those already incumbent in the market.[33]

Energy from waste, which can potentially supply up to 17% of the UK's electricity demand, and a range of incentives for micro-generation, such as feed-in tariffs and banded ROCs, may well lead to a reasonable proportion of energy being generated outside the traditional generation market.[34] Liquidity, or the ease with which market participants can trade electricity among themselves, could be improved by increasing diversity in the market.

Improving transparency is vital to ensuring that the market is free and fair. Vertical integration is not, of itself, a block to competition but coupled with opacity presents a serious obstacle to both new competitors entering the market and consumers and regulators being satisfied that the market is as free and fair as it could be.

Supply and generation

In the interests of transparency, separate regulatory accounts for supply and generation are clearly a good idea. They would impose a minor cost on the energy companies, assuming that they are not operating in an anti-competitive manner, of which there is no evidence.[35] Ofgem's probe raised this as a possible option for improving transparency, to which some of the energy companies raised concerns of additional cost and commercial confidentiality.[36] However, given the importance of trust in the energy market, and its absence at present, these concerns can and should be overcome through negotiation and if necessary the power to regulate.

Ofgem already issues licence conditions by which the energy companies must abide to participate in the market, so requiring companies to submit separate supply and generation accounts would be a modest

modification to the rules. However, it would be a small change which would have potentially far-reaching effects.

Supply and generation are quite different activities, although clearly linked. Generation is much more profitable than supply, giving an incentive to cross-subsidise supply business to maintain market share. The Business and Enterprise Select Committee recognized that this had a benefit for consumers by keeping the costs of supply down, but this should be monitored to prevent anti-competitive levels of cross-subsidy.[37] This report strongly recommends that energy supply companies are required to disclose separate regulatory accounts for supply and generation.

Gas and electricity

Separate accounts for gas and electricity may be harder to demand, given the integrated sales of the two to many customers by the electricity generating companies. E.ON cited a strong preference for dual-fuel contracts among customers, as well as highlighting the incumbency and brand advantages of British Gas which, they claimed, leads to a low or even negative margin on gas.[38]

European law on gas currently requires separate activities to be accounted separately, although this is not the case with electricity generators who sell gas.[39] This seems to be an anomaly given that the two are intrinsically linked in much of the UK market. The Commission is the proper body to lead this forward if they choose to do so. This report does not recommend making requirements of disclosure in gas and electricity at this stage.

Conclusions and recommendations

Energy prices for consumers are likely to rise due to the cost of providing secure and low carbon generation capacity. This will strain confidence in Britain's energy market. Consumer information is one very important route to empowering consumers and reassuring them about the state of the market. Ofgem's recent recommendations are a minor step in a direction that needs a lot more travel.

Ofgem's proposed annual statement is a good idea but could go a lot further. Informing consumers of their usage, as well as how that compares to other users both in terms of consumption and price, should be a more effective prompt to action than simply reminding consumers that they can switch.

The future impact of smart meters makes the introduction of an annual statement something of a short term measure because they offer the potential to give households more information than they could ever have through a paper statement. Ensuring that consumers own the data about their own consumption places them in a better position to navigate the market. While not all consumers would take advantage of this initially, the potential to totally reshape the consumer market for energy over future years should be harnessed to maximise engagement, transparency and confidence.

Improving public knowledge on the costs that go into their bill would also be a benefit to understanding why prices are volatile. Explaining clearly the proportions of the bill that are based on wholesale markets and tax could be an effective way to reassure customers that they are not being taken advantage of by the energy companies and give them a clear idea of the costs involved Government policies such as the Carbon Emissions Reduction Target.

Transparency is essential to maintaining trust in competition, especially if we are expecting the cost of energy to increase markedly. Separate regulatory accounts will open up information about the market which is currently not available, making the threat of new entry more credible and allowing outside parties to satisfy themselves that the generating companies are not acting in an anti-competitive manner.

Continuing to press for liberalisation of European energy markets may be frustrating but is necessary. If this eventually bears fruit it would have highly beneficial effects on the British market. Competitive energy markets in Europe would enable the competitive market in the UK to work much better, while bringing the benefits of liberalisation to European consumers.

The liberalised energy market worked well when it had excess supply. For it to secure continued public support, better transparency and consumer information are going to be necessary. The challenge of transitioning to a low-carbon economy with secure energy supplies is going to be difficult; without a fair market in energy it may be politically impossible.

References

[1] Populus Concerned Consumer Index, August 2008; www.populuslimited.com/uploads/download_pdf-180808-Concerned-Consumer-index.pdf
[2] Ofgem (2009) "Regulator's new rules pack a punch for customers" Press Release R 14, 23rd March
[3] Ibid.
[4] Daily Mail, "Fleeced by the power giants: Gas, Electricity and oil prices plunge – but your energy bills are STILL higher than ever" 5th December 2008
[5] Populus Op Cit.
[6] HC Debs 7th January 2008, Col. 318W
[7] HL Deb 23rd April 2008, Col. 1497
[8] Ernst and Young (2009) "Securing the UK's Energy Future – meeting the financing challenge" February 2009, p2
[9] Sharmin, H and Constable, J (2008) "Electricity Prices in the United Kingdom" Renewable Energy Foundation, p1
[10] Ofgem (2009) Op Cit.
[11] Ibid.
[12] Conservatives (2009) "The Low Carbon Economy" Green Paper, p5; HC Debs 12th Mar 2009, Col. 293
[13] Conservatives (2009) Op Cit., p31
[14] Thaler, R and Susnstein, C (2008) "Nudge" Yale University Press, New Haven, pp68-9
[15] From discussions with energy companies
[16] Provided by one of the major energy companies
[17] Populus poll for the Daily Politics, November 2006, http://www.populuslimited.com/uploads/download_pdf-031106-The-Daily-Politics-Green-Taxes.pdf
[18] Business and Enterprise Select Committee (2008) "Energy Prices, Fuel Poverty and Ofgem" pp25-6
[19] All market share data from Business and Enterprise Select Committee Op Cit., p76
[20] Green, R (2006): "Market power mitigation in the UK power market" *Utilities Policy* 14, pp76-89, p76
[21] The Times "Centrica's cut-price deal for nuclear stake" 11th May 2009
[22] Green, R (2005) "Electricity and markets" *Oxford review of Economic Policy* 21 (1), pp67-87, p76
[23] BERR 2008 Op Cit., pp141-147
[24] Woo, C, Lloyd, D and Tishler, A (2003): "Electricity market reform failures: UK, Norway, Alberta and California" *Energy Policy* 31, pp1103-1115, p1109
[25] Ibid., p16
[26] Pagnamenta, R "UK's shortage of gas storage will cost udders dear, analysts say" Times, 16th February 2009
[27] BERR (2008) Digest of United Kingdom Energy Statistics, p112
[28] BERR "Quarterly Energy Prices" December 2008, pp51-6
[29] Helm, D (2008) "Credible Energy Policy" Policy Exchange, pp10-11
[30] Business and Enterprise Select Committee, Op Cit., p9
[31] Which? (2008) "Consultation Response" http://www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Documents1/Which.pdf, p25
[32] Business and Enterprise Select Committee Op Cit., p26
[33] From discussions with various energy companies
[34] Lee, P, Fitzsimmons, D and Parker, D (2005) "Quantification of the potential of Energy from Residuals (EfR) in the UK", Oakdene Hollins Ltd, p36
[35] From discussions with various energy companies
[36] E.On (2008) "Ofgem's market probe – Response of E.On UK PLC" http://www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Documents1/EON%20Response%20to%20Energy%20Supply%20Probe%20–%20Initial%20Findings%20Report.pdf, p5; and RWE NPower (2008) "npower Energy Supply Probe Response" http://www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Documents1/RWE%20npower%20Response%20to%20Energy%20Supply%20Probe%20–%20Initial%20Findings%20Report.pdf, p5
[37] Business and Enterprise Select Committee, Op Cit., p24
[38] E.On Op Cit., p18
[39] European Commission (2003) "Directive 2003/55/EC of the European Parliament and of the Council" Article 17.3

Notes

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