Martin Bell
Wholesale Markets
Ofgem
9 Millbank
London

9 August 2013

Dear Martin,

Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition- draft impact assessment

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

We have a number of observations on with the cost benefit analysis which lead us to believe that some of the costs have been underestimated and the benefits undetermined. In the impact assessment there seems to be no reference to, or insufficient treatment, of a number of significant cost drivers:

- The costs of credit and transaction fees.
- Cash flow effects on obligated parties.
- The impact on price formation, particularly if there are distressed buyers or sellers in the market.

We will demonstrate that these factors will significantly inflate the price of intervention.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact Ravi Baga on 020 7752 2143, or myself.

I confirm that this letter and its attachment may be published on Ofgem's website.

Yours sincerely,

Angela Piearce
Corporate Policy and Regulation Director

EDF Energy
40 Grosvenor Place, Victoria
London SW1X 7EN
Tel +44 (0) 20 7752 2200

edfenergy.com

Attachment

Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition- draft impact assessment

EDF Energy's response to your questions

Question 1: Do you agree with our evaluation of the impact of our Secure and Promote proposals on consumers? Are there other factors we should be considering?

Consumers will not benefit from the proposals if they are adversely affected by of increasing energy companies costs or if the proposals place stress on the natural formation of wholesale energy prices. These extra costs as a result of the intervention will be passed on to consumers. There are a number of circumstances when this could happen–

- In cases where generators or suppliers become distressed purchasers of power in order to comply with the licence condition. This situation would lead to artificially raising prices as a result of the obligation.
- If the market will not be able to reflect those occasions when different views will be taken about future availability of plant or levels of demand that would naturally create wide bid offer spreads (especially in the context of a non physical market).
- There is no provision for fast markets and *force majeure* in the licence as it stands. This would expose EDF Energy to unacceptable levels of risk in cases where the normal market process is disrupted such as major plant failure.
- The licence condition does not have a volumetric cap. We are not in a position to provide infinite depth over the time period required in the licence. Again this would increase costs.

Chapter two suggests that the proposals will have a positive effect by encouraging innovation in tariffs by small suppliers (p15 2.6) which will benefit consumers. However, it would be wrong to assume that only small suppliers innovate. In fact innovation can be driven by large suppliers[1].

Finally, Ofgem has not presented the evidence to show that product availability would become or is a constraint for small suppliers.

[1] See OECD Economics Department Working Papers No. 161 *Innovation, Firm Size And Market Structure: Schumpeterian Hypotheses And Some New Themes* George Symeonidis

CHAPTER: Three

Question 2: Do you agree with our evaluation of the impact of our Secure and Promote proposals on competition? Are there other factors we should be considering?

The benefits of increased competition identified in the cost benefit analysis are not the same as the benefits of increasing the numbers of bids and offers on the trading screens. By regulating Bid/ offer spreads there will be an increased likelihood of trading but this is not guaranteed.

The benefits described are rather generic and speculative. EDF Energy would argue that the impact of this intervention will be to alter the existing market with the risk of distorting price formation. This is because the parties are obligated to undertake this activity. There are three main ways in which the intervention risks distorting the competitive process:

1. Products where the obligated parties have no physical hedge or natural inclination to trade. Obligated parties will have to procure products from non obligated parties or use the equivalent financial instrument to comply with the obligation.
2. This inflexible intervention as it is currently drafted could mean that the rules apply at times of extreme market stress. For example, those participants who had not fully met their liquidity quota at the end of the reporting period would find themselves in automatic breach of their licence.
3. Impact on the unregulated markets by displacing trading activity to the regulated markets. This would have an impact on the liquidity in these markets which we can assume were developed at least cost by the industry.

Ofgem argues that liquidity poses a barrier to market entry and hence distorts competition. From our perspective if credit was available, we do not see a convincing reason why a supplier would have the problems suggested in the IA in terms of access to futures products. In fact there seems to be an assumption that the new entrants would be privately funded. However, it could also be the case that they may have a well financed backer e.g. a new entrant from an existing major retail business such as a bank, supermarket or internet provider.

Ofgem states that markets deliver price signals. In the short term, these prices "provide information which allows firms to make pricing decisions" (1.6 p7). Table 1 identifies the key features of a type of market which is most likely to benefit from a futures trading and compares them with the GB market. Wholesale electricity markets are already highly transparent. It follows that the benefits from mandating bids and offers have to be treated as an incremental benefit in the context of data freely available to the market.

Table 1 Conditions where future's trading is most likely to be beneficial[2]

Condition	Situation in UK electricity market
A large amount of new information about the future enters individual traders information sets	UK wholesale market is one of the most transparent markets in the world. BM unit data is available for free and near real time information is available for gas. Data on outages is also published.
This information is dispersed through the trading community as widely and unevenly as possible	Information is available on BM reports and the transmission operator's web sites.
Private information is as heterogeneous as possible and widely dispersed	The UK's generation fleet has some well established operational parameters and is subject to similar input costs.
The less capable the spot market the better	Since electricity cannot be stored and demand inelastic in the short term. The spot market is the reference product.

CHAPTER: Four

Question 3: Do you agree with our evaluation of the impact of our Secure and Promote proposals on sustainable development? Are there other factors we should be considering?

EDF Energy believes that adequate market liquidity will be important in supporting investment in low carbon generation. We support market driven initiatives that can make a positive contribution to enhancing and deepening liquidity in the GB wholesale electricity market. In particular, we are keen to see the development of forward trades in the current auction-based exchange.

We agree that the effective operation of Contracts for Difference (CfDs) requires a liquid wholesale market to provide a reliable and transparent reference price. It is important to ensure that any measures taken to enhance market liquidity in the near term are consistent with ensuring that the right liquidity signals are brought into the market to provide a robust and accessible reference price.

CHAPTER: Five

Question 4: Do you agree with our evaluation of the risks and unintended consequences of our Secure and Promote proposals? Are there other factors we should be considering?

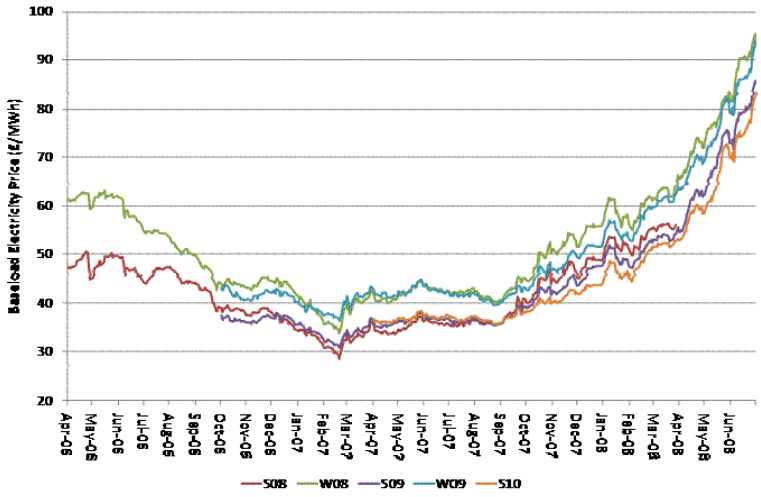
The lack of flexibility in the current licence draft creates an unacceptably high level of risk for obligated parties. This can be illustrated by changes in credit that are required to meet

[2] Derived from the conclusion in Derek Francis *The Gains from Future Trading* in Goss *Models of Future Markets* 2000

unexpected and extreme market conditions, have on the costs (initial and variation margins required to trade). We have used data from the 2008 commodities bubble as a stress test to illustrate the point. Whatever the cause (infrastructure failure, black start, unexpected demand etc) we could see a period of sustained high prices that will test the policy.

For this analysis, we have considered the peak of the commodities bubble at the end of June 2008 and how much collateral may have been needed were a further 300TWh per annum traded. Whilst this example considered only baseload, it would be reasonable to assume that the movement in peak prices was comparable and that therefore the logic (and numbers) holds. Assuming that of the 300TWh increased liquidity, 80% of it (240TWh per annum) is traded as seasons and that 60TWh for each of S+1, S+2, S+3 and S+4. The impact of this is that at any point in time, 300TWh of volume is fixed in price and not yet delivered. Hence it is subject to variation margin.

There would be 300TWh of seasons fixed as well as the within-year fixing. If the remaining 60TWh were fixed M+1-M+3, there would be a total of 310TWh fixed at any given time rather than 300TWh. In terms of prices, the chart below illustrates how much prices increased towards the height of the commodities bubble:



At the end of June 2008, the 300TWh would have comprised Summer 2008 (or Q3-08 as Summer 2008 was no longer trading), Winter 2008, Summer 2009 and Winter 2009.

Based on each season fixing in price linearly, the exposures by season are as follows:

Season	Volume Exposed (TWh)	Mkt Price (£/MWh)	Fixed Price (£/MWh)	Variation Margin[3] (£m)	Initial Margin[4] (£m)	Total Margin (£m)
S08	60	86.05	41.60	2,667	250	2,917
W08	105	94.90	56.19	4,071	591	4,662
S09	75	85.00	51.35	2,530	386	2,916
W09	45	93.00	58.37	1,564	264	1,828
S10	15	82.33	49.45	494	74	568
Total				**11,326**	**1,564**	**12,890**

Since the market would see an extra 300TWh of liquidity, if all of that volume was collateralised it would have required £11.3bn in variation margin. If we include the initial margin as well, this number increases to £12.9bn. This assumes no netting between buys and sells.

If the obligated parties, as Mandatory Market Makers, were behind half of those sales with small players and new entrants making up the other half, they would still have had to post £6.5bn in collateral (again no netting). If we assume a 10% difference between interest gained on collateral and the internal cost of cash, this would cost the obligated parties £650m per annum.

Even if collateral wasn't required due to investment grade credit ratings, the credit exposures resulting from mandatory market making could exhaust the uncollateralised credit lines available to the obligated parties and prevent them from executing their standard hedging strategy on an uncollateralised basis.

The no netting example does represent a high case. However, there is no guarantee that MMM buy and sell trades will be with the same counterparty, so it is possible that it will happen.

This also illustrates the issues faced generally as a result of collateralisation. If there wasn't any netting, the counterparts making up the other half of these 300TWh of liquidity would also have had to post £6.5bn in collateral. There was an average £37.70/MWh difference between the price on the 30th June 2008 and the weighted average fixed price for those 300TWh.

We note that there are wide variations between the contracts which are not reflected in Ofgem's flat requirements. This intervention will distort the natural trading patterns. For

[3] Payment of profits and losses

[4] The amount required to be collateralized in order to open a position.

baseload, four of the seven products are double Ofgem's targets. For peak products there is an even bigger variation between the pattern of bid offer spreads and Ofgem's target particularly for peak load season +2 and +3.

Table 2 Bid Offer spreads compared with Ofgem's targets

Baseload	Ofgem	EDF Energy[5] (observed spreads)	Difference
Month+1	0.30%	0.37%	0.07
Month+2	0.30%	0.68%	0.38
Quarter+1	0.30%	0.79%	0.49
Season+1	0.30%	0.44%	0.14
Season+2	0.30%	0.62%	0.32
Season+3	0.50%	0.84%	0.34
Season+4	0.50%	1.07%	0.57

Cont'

Peak	Ofgem	EDF Energy (observed spreads)	Difference
Month+1	0.70%	1.44%	0.74
Month+2	0.70%	2.19%	1.49
Quarter+1	0.70%	2.01%	1.31
Season+1	0.70%	1.50%	0.80
Season+2	0.70%	2.53%	1.83
Season+3	1.00%	3.90%	2.90

These proposals would have the effect of altering the natural differences between the products in the market. Ofgem should change their targets to reflect these important differences between contracts along the curve.

[5] Taken at 10am for calendar year 2011 our last complete data set

CHAPTER: Six

Question 5: Do you agree with our evaluation of the cost impacts of our Secure and Promote proposals? Are there other factors we should be considering?

We consider that the cost of credit is a cost that should be included in the analysis. Ofgem has stated that it would like an extra 300TWh of liquidity each year. Whilst it will take a while for this to fully feed through to entities' books, after a period of time there will be an extra rolling 300TWh that has been traded. Since 300TWh will need to be bought and sold, 300TWh liquidity is equivalent to 600TWh of trades. At £60/MWh, this is equivalent to £36bn. If 50% of these trades land on the books of the mandatory market makers (obligated parties), that's a rolling £18bn. If it is necessary to margin these trades, typical initial margin is 10%. This means that, between the mandatory market makers, we will need to post £1.8bn in initial margin. This ignores any variation margin to allow for movement in prices.

If the mandatory market makers only have to margin 50% of their trades, that is still £900m (or £150m per each of the obligated parties) which remains tied up in initial margin. If the difference between the internal cost of cash and the interest received on the collateral is 10%, this is equivalent to £90m of lost opportunity per annum (£15m per each of the obligated parties).

This does not include any initial margin (or variation margin) from trading underlying fuels. It is for electricity only. Previous analysis has shown that the total cost, including variation margin, is approximately three times this level when considering a hedging strategy involving S+1 and S+2. This would increase the lost opportunity cost from £15m to £45m per each of the obligated parties (£180m per annum total cost).

Transaction Fees need to be acknowledged in the assessment. Ofgem accepts that backing market maker trades out in the market will be expensive, and hence assume that EDF Energy will trade differently (it would cost £5.5m versus the £750k cost that they have included). It is unclear how the £750k cost has been calculated – if the hedging strategies of small generators and small suppliers do not overlap, there will be a period of trading in one direction followed by a period of trading in the opposite direction with basis risk between the two sets of trades. This also assumes that, having been hit in one direction, we will wait to be hit in the opposite direction and those trades will net off. It is entirely unreasonable to expect that the obligated parties will either a) be happy to sit on this basis risk or b) be able to sit on this basis risk.

We note that risk limits, hedging strategies etc may prevent this from happening and force an obligated party to trade.

It is unclear whether Ofgem's £5.5m high case is per each of the obligated parties or overall. By trading the underlying rather than not trading at all, we are exposed to volatility in the spread rather than volatility in the underlying. Volatility in the underlying tends to be lower and allows us to reduce risk without closing out the power positions. Bid-offer spread for the front four coal seasons is ~£0.15/MWh and is flat. For gas it is £0.13/MWh to £0.22/MWh, average £0.17/MWh. Again assuming liquidity increases by 300TWh per annum, if that increase is borne entirely by the obligated parties will end up trading 600TWh themselves (as the 300TWh will need both a buyer and a seller). If there is no immediate netting, this will cost £45m (600TWh * £0.075/MWh (half bid-offer spread)), or £7.5m per each of the obligated parties.

If this increased liquidity is entirely driven by small counterparts and new entrants, we could assume the obligated parties are only party to half this amount, and the cost would fall to £22.5m (£3.75m per each of the obligated parties). The £5.5m quoted by Ofgem falls in the £3.75m to £7.5m band, assuming it's as per each of the obligated parties' number rather than a total cost. We also believe this to be a 'sensible' case, rather than a high case

EDF Energy
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