Electricity Market Reform: Stakeholders Workshop

Meeting Report

UKERC/MR/HQ/2011/002

16 February 2011

Convened jointly by the UK Energy Research Centre, the Imperial College London Centre for Energy Policy and Technology, University of Exeter and Sussex Energy Group

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http://www3.imperial.ac.uk/icept

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The Energy Policy Group at the University of Exeter provides an academic hub for the interdisciplinary study of energy policy and sustainability, specialising in the transition from the current unsustainable energy systems to sustainable ones providing clean energy for all.

http://geography.exeter.ac.uk/research/groups/energypolicy/

Sussex Energy Group

The Sussex Energy Group undertakes academically rigorous, inter-disciplinary research that engages with policy-makers and practitioners. The aim of our research is to identify ways of achieving the transition to sustainable, low carbon energy systems whilst addressing other important policy objectives such as energy security. We have funding from a diverse array of sources. We are core partner in the Tyndall Centre for Climate Change Research and part of the UK Energy Research Centre.

http://www.sussex.ac.uk/sussexenergygroup/

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Note about the Meeting

Thirty stakeholders from academia, the consultancy sector, business, government, NGOs and think tanks attended the meeting. In the workshop the participants discussed the report from the first workshop (see below) and the EMR consultation document. The participants are listed on page 12. This report is an account of the discussion; comments are non-attributed. Opinions expressed in the report do not necessarily represent UKERC's views. Arrangements for the meeting were facilitated by the UKERC Meeting Place.

Summary of meeting 1

The outputs of the first meeting (31 January 2011) were summarised and the report was made available to participants. This report can be downloaded at: http://www.ukerc.ac.uk/support/tiki-read_article.php?articleId=994&highlight=electricity%20market%20reform

General points about EMR

Consumers

Several participants felt that the consumer voice was missing in both the EMR consultation and at the UKERC stakeholder meeting. It was recognised that the EMR, and other measures, will result in consumer bills increasing until at least 2030. The Green Deal may offset this to some extent, but it far from clear what the ultimate outcome will be. It was suggested that a more honest approach should be adopted by government where consumers are informed that bills will increase and the reasons why this is necessary.

The EMR represents a transfer of risk from the energy industry to customers. This transfer of risk was challenged by one participant who suggested that customers might expect to get something in exchange for this burden of risk – a suggestion was that customers could sell demand side measures. This would introduce linkages to the retail market.

A participant suggested that companies falling under the Carbon Reduction Commitment could play a role in the EMR; however, they cannot currently count the purchase of low-carbon power against CRC targets. It was suggested that some of these consumers have significant capital resources and a desire to invest in low carbon power. They could potentially enter into long-term low-carbon contracts with suppliers. In any other sector, a large programme of market reform would bring in the consumers who purchase the end product.

Demand side

Some participants felt that the demand side was missing from the EMR. However, it was noted that demand side is to some extent implicit in the reform, in that the EMR assumes

that a certain level of energy efficiency will happen. A participant suggested there are significant demand side subsidies already in place.

Demand response is currently delivered through interruptible contracts and some participants felt that this arrangement works well. It was argued by others that this mechanism fails to engage everyone (including households) who could offer load shifting and rapid demand response. It was argued that the supply side is reluctant to engage because of the number of small players and the complexity. Institutional links and infrastructure (in terms of smart grid/meters) need to be in place to broker such demand/supply relationships.

It was also suggested that there is too much focus on load shifting and insufficient attention to measures driving actual reductions in demand. The question "how do you shoehorn LED lighting into Contracts for Differences?" was asked.

EU interaction

The issue of how the EMR interacts with EU energy policy was raised by several participants.

A participant suggested that other parts of the EU are in a different position to the UK, in that there isn't an imminent capacity cliff edge approaching. Therefore EU policy is focusing on integration, rather than capital investment in generation. It was noted that the EU is watching the "UK experiment" with great interest.

In further discussion relating to EU integration, it was noted that it is unclear whether integration implies:

- An interconnected EU, but with no significant transfer of power; or
- A single, fully harmonised EU market

It was noted that policy makers seem to sit in both camps with no clear consensus emerging.

Participants reinforced the message from the first workshop that the UK proposals for a Carbon Floor Price could undermine the EU Emission Trading Scheme and that if the UK becomes more interconnected with the EU, it would guarantee that power would only flow in one direction.

Risk

Several aspects of risk were discussed.

One participant noted that nuclear and intermittent renewables are vulnerable to spiky prices, which is risky for investors. EMR would be expected to give less spiky prices and therefore less risk to investors. EMR should therefore reduce the cost of capital. However, it

was noted that a key issue is the total capital cost which equals the cost of capital multiplied by the unit capital cost. Risk does not go away just because the cost of capital has fallen. There is risk associated with the unit capital cost.

A participant noted that risk can be spread more widely to consumers who may not be worried if their exposure to risk increases by only a small percentage. The same participant noted that under the EMR, operational risk for generators is low and that really we are discussing risk associated with capital investment.

There was a suggestion that uncertainty around energy policy, including the EMR, is holding back investment in combined cycle gas turbines (CCGTs). However it was also noted that the recession has led to surplus capacity and therefore the investment disincentive cannot be attributed to EMR alone.

Investment

A participant asked whether the EMR was fundamentally about investment – if so they suggested that it is unnecessarily complicated. This reinforced the argument from the previous workshop that the market prefers measures that are transparent, long lived and certain. The participant also suggested that if the EMR is really concerned with bringing new nuclear capacity online, then it should do so explicitly.

There was a suggestion that the EMR should be associated with a timeline for when different investors should respond to the policies. The underlying premise was that not all investments will be required to deliver at the same time (e.g. nuclear vs. carbon capture and storage).

A participant suggested that an investment bond structure is required; this is an instrument the finance community is comfortable with. However, it was noted that the proposal for the Green Investment Bank (GIB) is far from clear as to whether the GIB will be able to issue Green Bonds (or indeed whether it will be a bank at all).

There was a view on the part of some participants that the modelling underpinning the consultation document did not reflect real world investment conditions. However, it was pointed out that the models used were not intended to reflect "how investment works". Nevertheless, the modelling assumptions are driving decision making, and we should understand if these are accurate or not.

It was suggested that some of those who currently invest in the electricity market do so because they like risk and the rewards that go with it. In changing the market, care needs to be taken not to encourage new entrants at the expense of those who already invest – it was suggested we need both new and old investors because we need more investment generally.

Under the current market arrangements, generators have developed portfolios that balance risk and reward, and as such typically have a portfolio that strikes a balance between regulated and unregulated assets. The EMR will change this landscape and will result in generators reassessing their portfolios. It was noted, for, example, that some companies are shedding their network businesses.

Complexity and new entrants

Participants endorsed the findings of the first workshop that the EMR is too complex and that this complexity will act as a barrier to new entrants, despite new entry being a desired outcome of the EMR.

Politics

Some argued that there is no apparent controlling mind in energy policy; as a consequence UK energy policy is not an integrated process – participants suggested that ideally all energy policies should be aligned. Examples cited included the localism agenda and its impact on planning; the Green Investment Bank; and the Green Deal.

Attention to governance issues was seen as a major gap in the consultation document, a conclusion also reached at the previous workshop. A sequence of interventions led to the conclusion that institutional aspects and instrument design were perhaps being addressed in the wrong order. It might have been better to start with the institutional framework and then allow the responsible institution to choose the right tools for the job.

Other

Several other cross-cutting issues were raised – these were typically raised by a single participant and do not represent a consensus opinion:

- It was noted that the EMR pre-supposes that transmission will be built and accessible. However, this is far from clear.
- The EMR fails to consider the impact of its measures on the international competitiveness of UK energy intensive businesses.
- The preferred package of measures in the EMR could slow down development for years to come. There is already a hiatus. For example, independent renewable companies' books are drying up due to the uncertainty. It was proposed that there will be no certainty until the secondary legislation on EMR is complete.
- Because of centrally administered contracts, investors will inevitably play in a less competitive environment. In the medium term, well-designed contracts may act as an incentive, but not in short term.
- It was suggested that the EMR could have a large impact on market liquidity; more so than the Ofgem review on liquidity on the EMR.

- It was suggested that the EMR should be time differentiated – in the words of a participants "think the first decade then the second".
- It was noted that the EMR, should it discourage investment in CCGTs, could have significant impacts on security of supply. A participant challenged this and enquired whether industry is gaming government and seeking reward. In response it was suggested that the current generation overcapacity; the fact that the EMR seems to squeeze out gas; and the fact that the nature of the market is to under-deliver on capacity; are reasons for concern. It was noted that there is a shortage of confirmed CCGT projects under construction and planning.

Feed in Tariffs (FiTs)

There was a short discussion on the relative merits of a volume obligation vs. price-based tendering. It was noted by one participant that volume obligations tend to create complicated markets, whereas price-based arrangements lead to complicated policy. Another participant warned of the dangers of not having volume targets and the consequent risk of not delivering capacity.

The majority of discussion focused on the CfD, however, there were specific points raised on classic and premium FiTs.

Fixed or "classic" FiT

It was noted that successful FiTs have both a fixed price and some form of guaranteed off-take. The classic FiT can also help with planning, because it can be geographically diverse.

It was suggested that under a classic FiT, or indeed other FiT mechanisms, there will be significant learning from the first couple of projects of any kind and that prices might need to be adjusted in light of the first of a kind projects.

It was noted that the fixed FiT has been applied to small scale renewables, and that small players are very different from large multi-national companies who are targeted by the EMR. It was suggested we need to hear more from finance experts.

CfD

A participant questioned whether the CfD FiT has as low a risk as the fixed FiT if the government is the counterparty.

It was suggested that it is important to get the CfD price right and that there should be no barrier to reviewing the price if proven to be wrong for any particular technology.

Getting the strike price for nuclear was deemed to be critical as there are so few players in the market.

Some participants wanted to see a CfD FiT for demand side measures and energy storage. It was also questioned whether the CfD mechanism will promote innovation; some participants suggested it seems to favour nuclear and onshore wind.

One participant raised the issue of the nature of the contracts to be signed in relation to the scale of ambition – i.e. whether the aim was a discrete number of investments in nuclear and wind farms, or contracts that would deliver a low carbon energy system through the process of innovation. It was noted that this scale of ambition is where the true costs of the EMR lie. There is an inherent trade-off between volume certainty and long term affordability.

Regarding the body that acts as the counter-party for contracts, if there are to be a discrete number of investments then this could be achieved through an existing government body. However, if the scale of ambition is greater, then a new arm's length body would be the preferred option. The key aim in both instances is to deliver low-carbon energy at lowest cost. This aim sits uneasily with having only one type of FiT available, in that not all technologies will be de-risked equally.

Auctions were suggested as a mechanism that could be free from political tampering. However, it was pointed out that auctions are prone to gaming and could yield undeliverably high and low bids, as discussed in the previous workshop.

There was a concern over auctioning for big projects because there is uncertainty as to whether bidders will succeed in getting a contract. There are significant costs and hence risks in simply developing the bid.

It was suggested that nuclear power plants will require complex contracts similar to those that were offered to early CCGTs.

It was noted that large energy users tend to contract with suppliers for relatively short periods of time. Therefore suppliers do not bank on their demand being there when they invest. However, if contracts were longer, system capacity could be reduced because greater value would be attached to the demand side.

Capacity Mechanism

It was suggested that the New England (NE) Capacity Mechanism would be a useful model for the UK. The NE model is essentially open to anyone, with penalties for not delivering capacity promised. Payments are adjusted at the end of year according to the average price, which incentivises generators to keep prices down. The system also requires generators to supply several years in advance, but does not provide a blank cheque. There was some agreement about this approach. In discussion, relating to the demand side issue raised

previously, it was noted that the NE model derived two thirds of its capacity from the demand side.

In opposition to this view there was the suggestion that the existing capacity mechanism (interruptible contracts) already delivers - so if it's not broken, don't fix it.

Whatever the mechanism, this issue is extremely important for stakeholders already holding assets.

It was noted that if smart grids emerge it may mean that we don't need a capacity mechanism. With smart grids on horizon, we have no idea what capacity we will actually need.

One participant noted that any capacity mechanism must differentiate between the 30 minute timescale and two week periods of low pressure in winter when there is lots of wind on the system and electric heat pumps are used to supply heating needs. The duration of periods of peak demand and low wind output are as important as the demand/supply levels.

Carbon Price Floor (CPF)

A participant suggested that the CPF could be cheapest option to deliver scenarios where there is high nuclear penetration and low CCGT. The rationale was that CPF allocates risk fairly and makes government responsible if they fail to set price high enough. However, it was noted gas used for heating residential buildings is currently untaxed. The five million households with electric heating and would therefore be taxed unfairly and it would also lower incentives to adopt heat pumps.

It is unclear how the CPF interacts with the EU ETS. Also, as discussed earlier, the CPF would encourage imports of power via the interconnectors in the absence of a border tax.

It was acknowledged that the "first best" approach to carbon pricing would be well-functioning ETS with a lower distribution of allowances leading to higher prices. A unilateral UK CPF is a "second best" solution.

Participants also questioned whether a tax is "bankable", particularly compared to long term contracts. It was questioned whether *both* the CPF and the CfD instruments are required to deliver the aspiration of the EMR. If there are long-term fixed price contract for low carbon generation, a carbon price would not be needed to drive low carbon investment. Opinions differed as to the primacy of the CPF and FiTs.

Emission Performance Standards

Once again the role of the EPS within the EMR was questioned by participants. There was some support for the EPS, as a policy back stop to ensure that new unabated coal could not enter into the energy system.

Many participants felt the EPS were at best decorative and that other measures in the EMR, as well as other the application of planning guidelines, would prevent unabated coal. In discussion the options discussed were:

- That the EPS should be removed from the EMR
- That the EPS should be accepted as purely decorative and therefore harmless
- That the EPS should be given some "bite" and applied to gas (trailed by a few years) and have retrofit requirements introduced. This would prevent operators from life extending unabated plant.

If the EPS remains, then it should be calibrated against capacity, as suggested in the consultation document, allowing plant to comply by operating at low load factors as well as by fitting capture plant.

Applying the EPS to gas raised security of supply issues for some participants.

List of participants

First name	Surname	Affiliation
Phil	Baker	University of Exeter
Richard	Benwell	Energy and Climate Change Select Committee
Janusz	Bialek	Durham University
Jenny	Bird	ECC Committee
Gareth	Davies	Poyry
Richard	Green	University of Birmingham
David	Green	UKBCSE
Rob	Gross	Imperial University
Michael	Grubb	EPRG
Kirsty	Hamilton	Chatham House
Nick	Hartley	OXERA
Neil	Hirst	Imperial College
Simon	Less	Policy Exchange
Keith	MacLean	SSE
Catherine	Mitchell	University of Exeter
David	Newbery	EPRG
Pierre	Noël	EPRG, University of Cambridge
Doug	Parr	Greenpeace
Michael	Pollitt	EPRG
Tim	Pyke	E.ON UK
Robert	Sansom	Imperial College
Peter	Sherry	Ofgem
Jim	Skea	UKERC
Simon	Skillings	E3G
Steve	Sorrell	Sussex Energy Group, SPRU, University of Sussex
Goran	Strbac	Imperial College
Michael	Thompson	CCC
Tim	Tutton	University of Exeter
Judith	Ward	University of Exeter
Anurag	Mall	EDF