

Electricity Market Reform Workshop III: Institutional Arrangements

Meeting Report

UKERC/MR/HQ/2011/003

November 2011

Convened jointly by the UK Energy Research Centre and the Imperial College London Centre for Energy Policy and Technology

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Summary

1. This meeting of independent experts addressed institutional arrangements for implementing UK Electricity Market Reform (EMR). It was convened jointly by the UK Energy Research Centre (UKERC) and the Imperial College Centre for Energy Policy and Technology (ICEPT). Institutional issues are closely tied to arrangements for a proposed Capacity Mechanism. Discussions at the workshop reflected this link.
2. The dominant view expressed at the workshop was that a new arms-length body represented the best option for implementing EMR, notably in respect of Feed-in Tariffs (FiTs) for low carbon generation. Separating delivery from policy formation would enhance credibility and reduce perceived political risks for investors. Any arms-length body must be a credible counter-party for contracts, either underwritten by Government or with the statutory ability to pass through costs.
3. Participants at the meeting were not in general attracted by the proposition that an existing body should take on the responsibilities associated with delivering EMR. Ofgem, for example, was perceived to have developed into a “complex” organisation, with multiple objectives and with a growing policy role. An organisation with unambiguous objectives and a limited policy role would be more appropriate. Also, existing obligations, for example on delivering low-costs to consumers, would be in tension with the goal of promoting a low-carbon energy system.
4. The objectives to be pursued by any delivery body could include: delivering low-carbon power to meet a decarbonisation trajectory at lowest cost; delivering the UK renewable energy target; or allocating a given financial resource in the most cost-effective way. Whatever the objectives, they must be specified with clarity to give confidence to investors.
5. In practice, it is likely that the forward commitments of the responsible body (i.e. the volume and value of the contracts for which it is liable) would be allocated either on an annual basis or on a five-year basis under the Comprehensive Spending Review cycle. The latter approach would have the advantage of allowing the responsible body to accumulate experience and would provide investors with longer term certainty, albeit being in potential conflict with the achievement of independently set volume objectives for low-carbon energy.
6. The first contracts under EMR might need to be issued by an existing body or bodies. However, new bodies can function in “shadow” form prior to the passage of the formal legislation that brings them into existence. While a new responsible body is established, the existing system covering the Renewables Obligation and carbon capture and storage demonstration will continue to operate in any event.
7. During setup, the responsible body will need to acquire quickly the competence to establish FIT prices differentiated by technology. This will require knowledge of costs and the potential for cost reduction.
8. The nature of the institution to deliver a Capacity Mechanism would depend on whether the mechanism takes the form of a targeted Strategic Reserve or a Capacity Market. In the case of a Strategic Reserve, the consensus was that National Grid could operate this with only a minimal change to its operating licence and was therefore the preferred institution.
9. In the case of a Capacity Market, the institutional arrangements for delivery are less clear. It was proposed that three institutions might be required. National Grid would still have to take a view on capacity requirements. A second institution could be required to procure ‘capacity contracts’. This could be the same organisation that procures FiTs. Another institution might be needed to

administer settlements and monitor contracted volumes from generators. Elexon or a similar organisation might be an appropriate body for this role.

10. The dominant view of participants was that the bidding process, for whichever capacity mechanism was chosen, was that a five-year process was preferable, perhaps aligned with the existing system of five-year carbon budgets.

Introduction

This was the third in a series of workshops organised by the UK Energy Research Centre (UKERC), the Imperial College Centre for Energy Policy and Technology (ICEPT) and others on the subject of UK Electricity Market Reform (EMR). Two previous workshops addressed questions arising from the Government's consultation document published in December 2010. This third workshop addressed one of the key issues raised, but not resolved, in the Electricity Market Reform White Paper published in July 2011: the institutional arrangements for implementing EMR. The institutional question is closely tied to arrangements for the Capacity Mechanism which was consulted on in Annex B to the White Paper. Discussions at the workshop reflected this link.

As with the first workshop in the series, all invitees were "independent experts": i.e. there were no representatives of the Big Six, National Grid, Government or the regulator. This format proved to facilitate free discussion at the first workshop. There was no attempt to generate an artificial consensus. Any differences in opinion expressed at the workshop are recorded in this report. All views were recorded but the report does not attribute comments to individual participants.

The workshop was introduced by two presentations aiming to stimulate discussion. The first, on general issues, was made by Tim Tutton, Visiting Lecturer at the Energy Policy Research Group at Exeter University. The second, specifically on capacity mechanisms, was made by Richard Green, Professor of Sustainable Energy Business at the Imperial College Business School.

The report is broken into three main sections covering:

- Introductory issues and the relationships between Government and arms-length bodies
- Institutional arrangements relating to the Capacity Mechanism
- Institutional arrangements relating to Feed-in Tariffs (FiTs) through contracts for differences (CfDs).

1. Government and Arms-length Bodies

Discussion started with a general consideration of the features of an arms-length institution that delivers Government policy and the nature of its relationship with Government. It was noted that such institutional debates, in energy and other domains, have a rich history and therefore many of the issues raised are not new.

Governments use arms-length bodies for a number of reasons. Separating delivery from policy formation can enhance credibility and/or reduce the perceived risk of political change. Arms-length bodies can also acquire/develop the expertise to deliver: specific expertise is not a hallmark of the civil service. Such bodies can increase tactical flexibility through delegation of some level(s) of decision making away from political control – agencies are rarely purely about 'delivery'.

Government can also use an agency to insert distance from policies so as to avoid blame.

Participants considered these general features of an arm-length body in the context of the EMR. Institutional expertise was deemed critical, particularly an understanding of key technologies and especially nuclear power. The body must be a credible counter-party, either underwritten by Government or with the statutory ability to pass through costs. Additionally, the body should be able

to avoid/mitigate EU state-aid issues and mitigate impact on public sector spend/liabilities. The body may also need to be able to respond to performance related financial incentives.

The division of responsibility between Government and the institution is key. Ofgem was cited as an example of a body that was initially set up with a focus on delivery but has since developed a strong implicit policy role. Specifically, there is a question as to whether Government or the arms-length body would decide the low-carbon technology mix going forward – and whether there is a straightforward answer to this question. The strong sense of the meeting was, for all the reasons just mentioned, that some form of arms-length arrangement was preferable to the delivery role being performed by Government itself. However, this still leaves scope for judgement about the precise division of responsibility.

2. Capacity Mechanism

The institutional arrangements for delivering the Capacity Mechanism were seen by many participants to be less critical than those for delivering the FiTs. The Capacity Mechanism was therefore considered first at the workshop, as the solution might be more obvious with the potential to fold into FiT arrangements.

A Capacity Mechanism is required because wind will supply substantial amounts of power to the Great Britain system. As a result, significant amounts of flexible capacity will be required as back-up. Under current market arrangements, this is a poor investment prospect. There are two options for providing capacity: the first is to buy a small amount of flexible plant (a **Strategic Reserve**); and the second is to provide a payment to all stations to provide capacity on demand (a **Capacity Market**).

In the case of a **Strategic Reserve**, there are several issues:

- How large should it be?
- What type of plant is required?
- Which market does it bid into?
- What price should be bid?
 - Last resort (infrequent use at a high price based on the Value of Lost Load or VOLL)
 - Economic dispatch (a lower price with more use)
- How can it be prevented from capping prices at too low a level?

In the case of a **Capacity Market**, all plant meeting certain technical criteria would be paid to avoid “missing money”. A number of questions arise about its operation:

- How much capacity is needed?
- How does the market function – does it involve an auction, bilateral trading or both
- What is the product – is it a “physical contract” with penalties for non-delivery or a “reliability contract”, for example a one-way Contract for Differences
- How much capacity can a generator of a given type sell?
- How does it interact with CfDs? Is there a danger of paying the same supplier twice?

For both approaches there is question as to when operation should begin. Participants noted that, whilst such a mechanism may not be required until 2016, there remained merit in getting it up and

running as soon as possible to provide market certainty. Additionally there was a discussion about how far in advance the bidding process should run. For example, if the process ran one-year ahead, then the mechanism would only prevent existing plant from being decommissioned; if the process ran five-years ahead it could help to incentivise investment in new plant. In both cases, there was a question as to how a demand side response could be stimulated. The dominant view was that a five-year process was preferable, perhaps aligned with the existing system of five-year carbon budgets.

The meeting then addressed the potential role of the system operator, National Grid, in delivering the Capacity Mechanism.

For operating a **Strategic Reserve** it was felt by many that National Grid was well suited to taking on the delivery role, with no major changes to its operating licence required. There is a potential grey area surrounding the 'ownership' of generation (from which National Grid is currently prohibited). Short-Term Operating Reserve (STOR) can be used to build new plants and help meet long-term needs. It was questioned whether long-term contracts would in fact constitute 'ownership'. However, the critical issue was seen to be what happens to the asset at the end of the contract. It was noted that National Grid had in the past delivered contracts to generators to prevent them from becoming insolvent although it was not clear whether this was consistent with licence conditions. National Grid has, in the past, considered that their obligation was to make the best use of the available generating capacity, rather than being responsible for the existence of that capacity. The argument was also made that back-up generators could dominate the service required for short-term grid balancing. If it is possible to formulate a mechanism to get such back-up capacity built, then there may be little other capacity required (and hence little role for the Capacity Mechanism).

Participants felt it was less clear that National Grid could be the sole delivery body for a **Capacity Market**. Given its responsibility for running the system, National Grid would need to form a view on the capacity required. However, another body might be required to procure the 'capacity contracts' while a third body might be required to monitor the contracted volumes from generators and suppliers. For procurement, it was suggested that this could be the same body that procures the FiTs (with a caveat that most flexible plant is not low-carbon). For monitoring, an organisation such as Elexon might be appropriate. It was noted that, since Ofgem is the official Gas and Electricity Markets Authority specified under the Utilities Act and other pieces of legislation, it might have ultimate authority to assign responsibilities in this area.

It was noted that the role of Demand Side Response was still underplayed in consultations. Its inclusion in arrangements would necessarily be complicated but it could, in principle, dominate the Capacity Mechanism. Demand Side Response could also be procured through FiTs.

There were potential links between the Capacity Mechanism and the FiTs. If EMR were to be poorly designed, generators who own plant that is both low-carbon and flexible (e.g. biomass thermal plant) could, in theory, be paid twice, once through FiTs and once through the Capacity Mechanism. Depending on the design of the EMR, it may be up to the generator to choose the mechanism through which they are paid.

3. Feed-in Tariff through Contracts for Differences (FiT CfD)

Objectives of the institution

Participants believed that specifying with clarity the objectives to be pursued by any delivery body was key. Alternative objectives included: delivering low-carbon power to meet a decarbonisation trajectory at lowest cost; delivering the UK renewable energy target; or allocating a given financial resource in the most cost-effective way given wider objectives. Different objectives would result in different approaches. For example, if the objective was to meet the UK Renewable Energy Directive target at least cost, then the strategy might simply be to maximise the deployment of onshore wind turbines. It was also noted that Government might choose to pursue all these objectives simultaneously, along with some hidden objectives – this was described as “murky in the extreme” by one participant who cited the potential to conceal costs from citizens. It was noted that an arms-length body would, at least in principle and depending on the obligations (including transparency obligations) put on it, find it difficult to hide the costs, although they may not be very visible to consumers. The advantage of an arms-length body is that it would promote cost transparency. The mood of the room was that simple, clear objectives would be preferable.

An existing body or a new one?

Whether the delivery body was inside Government, an arms-length body or a private sector body, Government would clearly need to underwrite the contracts. Inevitably, HM Treasury would take an interest in initial contracts especially very large ones involving nuclear or offshore wind.

The meeting was not attracted by the notion of Government directly taking on the delivery role. It would be perceived to be too easily influenced by the political environment and deemed too risky by investors. There was also limited appetite for a private sector body taking on delivery. The amount of money passing through the organisation would be difficult to handle without explicit Government backing. However, private sector bodies could take on a role as sub-contractors to any ‘responsible body’. The preferred option was therefore an arm’s-length body. Further discussion focused on whether this arm’s-length body should be an existing body or a new one.

Candidates bodies included Ofgem, National Grid and the Committee on Climate Change. In the event, serious discussions focused only on the role of Ofgem.

After lengthy discussion, participants were not attracted by the proposition that Ofgem should take on the role. There were two main reasons. First, Ofgem was perceived to have developed into a “complex” organisation, with multiple objectives and with a growing policy role. Participants felt that an organisation with unambiguous objectives and a limited policy role would be more appropriate. Second, participants felt that Ofgem’s focus on delivering low-costs to consumers would not necessarily be compatible with delivering a low-carbon energy system.

The consensus of the meeting was therefore that a new arms-length body would be best placed to act to deliver the CfD FiT.

Mode of operation

Participants believed that the division of responsibility between the responsible body and Government would be tricky. For example, decisions on nuclear power could not be taken at arms-

length; inevitably they would need to be taken by Government. This could equally apply to large investments in offshore wind and carbon capture and storage.

Participants expressed a desire for “flexi-certainty” in operation. The mode of operation should give sufficient certainty to investors so that plant gets built, but provides sufficient flexibility to avoid lock-in, or the possibility of stranding assets in the future. It was pointed out that regular reviews (of the terms of future contracts, not of existing contracts) would be critical for learning and adapting the policy.

It was thought likely that the forward commitments of the responsible body (i.e. the volume and value of the contracts for which it is liable) would be approved by HM Treasury. If this were the case, the responsible body might establish contracts in one of several ways:

Option A: The responsible body would have the authority to decide the most effective energy mix and plan a procurement strategy based on the anticipated budget.

Option B: There would be a two stage process, akin to that operated under the Non-Fossil Fuels Obligation. The Government would set an annual ‘obligation’ (e.g. based on a carbon target), the responsible body would take bids from suppliers and then recommend a mix to Government, which the Government might choose to accept or alter. The responsible body would then procure the agreed mix.

Option C: The Government would decide the energy mix and would charge the responsible body with procuring that mix.

Some participants were unconvinced that Government would remove itself entirely from the decision process, which points more towards Option B or C, or a variant thereof. It was noted that the Climate Change Act requires the Government to act on advice from the Committee on Climate Change and that carbon budgets could help set the strategy to be followed by the responsible body. However, other participants thought it better that the body should be given an arms-length role and develop its own technical competence.

Participants discussed the way in which the responsible body might be allocated resources (“a budget”). One option was for HM Treasury to allocate forward commitments for new contracts on an annual basis to DECC, which would subsequently pass it on to the responsible body. Some participants thought it might be beneficial to allocate funding to on a five-year basis under the Comprehensive Spending Review cycle. This would allow the responsible body to take into account accumulating experience in its procurement policy. Investors would also prefer longer term budget certainty. It was noted whatever the mechanism, that Treasury would have a clear interest in the budget concerned, since the costs will be borne by consumers.

At this point, there was some discussion of the current treatment by HM Treasury, as recommended by the independent National Statistician, of the Renewable Obligation as an imputed tax. Some investors may therefore regard the political risk associated with either the Renewables Obligation or FITs as being more akin to that associated with a tax than a contract. Deutsche Bank reportedly downgraded the assessment of UKs renewable prospect because of the imputed tax issue.

Participants discussed how contracts might be constructed, focussing on two approaches:

Power procurement– in standard power procurement, the contract states that payment is made to the generator when the power is delivered. This does not cover construction risk.

Akin to defence procurement – in defence procurement, some of the finance is made available upfront during the construction phase. This could de-risk the construction stage and assist the private sector in getting projects built. There are issues in how this would be financed and implications for the responsible body as finance would not simply pass through and liabilities would be accumulated.

Several participants noted that HM Treasury would almost certainly want to approve some or even all contracts. This scrutiny could cause delays in issuing early contracts.

Setting up a new agency

A new responsible body may take some time to set up. Participants speculated as to whether the first contracts might need to be issued by an existing body or bodies. One participant questioned whether there was in fact a role for a new body at all if an existing body was capable of issuing contracts. It was pointed out that new bodies can in practice function in “shadow” form prior to the passage of the formal legislation that brings them into existence. This had been the case for the Committee on Climate Change in 2008. In any event, while a new responsible body is established, the existing system covering the Renewables Obligation and carbon capture and storage demonstration (but crucially not nuclear) will continue to operate.

During setup, the new responsible body will need to acquire quickly the competence to establish FiT prices differentiated by technology. This will require knowledge of costs and the potential for cost reduction. It was emphasised that cost transparency would be a critical issue for consumers.

List of participants

Mark Barnett	Invesco Perpetual
Alice Barrs	CCC
Dustin Benton	Green Alliance
Richard Benwell	Energy and Climate Change Committee
Will Blyth	Oxford Energy Associates
Tim Cooper	UKERC
Richard Green	Imperial College
Rob Gross	UKERC/ICEPT
Jeff Hardy	UKERC
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Phil Heptonstall	UKERC/ICEPT
Malcolm Keay	Oxford Institute for Energy Studies
Graham Meeks	CHPA
Catherine Mitchell	University of Exeter
Alan Moore	Independent
David Newberry	Cambridge University
Aidan Rhodes	UKERC
Jim Skea	UKERC
Simon Skillings	E3G
Goran Strbac	Imperial College
Louise Strong	Consumers Association
Lynsey Tinios	Shell
Jamie Tunnicliffe	Redburn Partners
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