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4 October 2011

Response to Consultation on possible models for a Capacity Mechanism arising from “Planning our electric future: a White Paper for secure, affordable and low carbon electricity” of July 2011.

Introduction

Carlton Power welcomes DECC’s consultation on a potential capacity mechanism in the UK electricity market.

Given the complexity of the capacity mechanisms being considered many design and implementation challenges still remain. We feel that a detailed response to the consultation would have had to make numerous assumptions in this area which if incorrect could limit the relevance of any detailed submission. Hence we have focused our response on key objectives and principle and we look forward to providing DECC with continued support through active stakeholder engagement.

Core objectives: Capital attraction and market enhancement

To achieve a secure, low carbon future generation mix which is also affordable, the electricity sector will have to attract significant new investment and facilitate innovation. Given the magnitude of the challenge, it is essential that all potential investors and sources of finance are able to fully participate in the sector in addition to the currently dominant big six vertically integrated utilities. Furthermore, to avoid consumers paying significantly over the odds and innovation incentives being stifled, it is also desirable to ensure that the UK has a liquid, competitive and transparent wholesale and retail electricity market and that small market participants do not suffer a competitive disadvantage. Interventions should focus on ensuring capital attraction and be market enhancing, rather than market replacing.

The problem being addressed

It is Carlton Power’s view that there are potentially two different questions a capacity mechanism might be designed to address:

1. Operational short term capacity adequacy, i.e. whether there is sufficient within-day flexibility in the form of flexible plant, demand side response and interconnection to manage large amounts of intermittent plant and inflexible nuclear plant; and
2. Whether there is a likely long-term capacity shortage on the horizon, i.e. “extended periods” of demand/supply mismatch such as that which could result from low wind generation across an extended area. (winter high pressure systems)

Which one of these is considered the overriding issue will have significant implications on how a capacity mechanism is designed. We are concerned that in this second consultation the precise nature and role of a capacity mechanism remains unclear. We see the danger of an ineffective policy being developed which could have the perverse effect of increasing market and political risk and hence deterring much needed investment.

Carlton power's views: Need for effective competition and support for a limited strategic reserve option

In parallel with any form of capacity mechanism, Carlton Power would strongly support a greater focus on ensuring that wholesale markets are competitive, liquid and transparent. We see the current problems with market functioning as intrinsically linked to the underlying market structure which is dominated by six vertically integrated incumbents who only have incentives to trade at the margins. If the future of the sector is characterised by a lack of effective wholesale and retail market competition, ineffective price signals, high political risk and insufficiently transparent (i.e. excessively complex) market arrangements, then this could indeed lead to reduced investment in new generation and “extended periods” of demand/supply mismatch in the future. At this point in time, we would welcome a policy design focus on these potential causes of future problems, rather than the introduction of a mechanism which might (or might not) address issues which may not actually become significant for some time (if at all.)

Although we feel that at this point in time the argument for a market wide capacity mechanism still needs to be made, we do see some merit in introducing limited strategic reserve provisions with the aim of ensuring sufficient operational short term capacity going forward. This in our view would be best undertaken by developing the existing STOR reserve market. This could be achieved by extending the planning time horizon for these arrangements, and by extending the volumes of back-up generation procured.

We see a need for extending the volumes of back-up generation procured through the STOR mechanism for several reasons. The wholesale electricity market is currently not liquid and transparent enough to attract sufficient numbers of non-vertically integrated investors into the sector. Furthermore, the currently high levels of political risk and the associated uncertainties surrounding the future composition of the UK generation base make it very difficult to value the risks and revenue streams associated with CCGT investments. For OCGT peaking plant (and all other forms of peaking), it was the lack of certainty that there would be enough high price peaking hours over the lifetime of the asset which led to the introduction of the long term STOR arrangements specifically designed to stimulate the construction of new peaking generation.

We envisage provisions under which National Grid contracts for the build of new plant under STOR by offering a guaranteed rate of return, turning the risk profile of the procured plant into that of a utility subject to rate of return regulation. This would make these assets attractive to new sources of finance such as infrastructure funds, pension funds and sovereign wealth funds.

To ensure that the plant procured under STOR is as environmentally friendly as possible, the procurement methodology used should be modified to support the procurement of larger units than is currently the case. More revenue certainty is required to justify large scale investment, but this will also reduce risks and required returns resulting in lower cost.

Although we anticipate that there would need to be a noticeable increase of plant procured under STOR from the currently very low levels, we would urge to keep the total volume sufficiently limited to avoid any market distortions, which would lead to the extended STOR arrangements having undesirable and unintended consequences in terms of market functioning, security of supply and affordability for consumers. A circumspect rather than ambitious approach to widening STOR would also establish the principle of a strategic reserve, while enabling the Government to modify and adapt the chosen approach in light of learning and the (currently still uncertain) future development of the generation base.

Much more important than any potential extension of STOR provisions, we urge the Government to focus its policy development on ensuring that the electricity sector enjoys low political risk, effective competition and as a result effective price signals. This will in turn ensure capital attraction and safeguard long-term capacity margins.

In the remainder of this consultation response we structure our more detailed observations on the various proposals made under several key principles. Unless stated otherwise, these principles apply to all the options consulted on.

Key principles

The capacity mechanism should incentivise new entrants and increase the sources of finance to build new plant

Even if the focus is on developing existing STOR arrangements, it will be essential to construct new flexible plant to ensure sufficient operational short term capacity, since the contribution of demand side management will always be limited and the temporary postponement of plant closures can only provide a short term solution to the intra-day flexibility required going forward. In stimulating the construction of new generation it is important that the mechanism is designed to support investment by independent new entrants to the market rather than merely giving a secondary revenue stream to the Big 6, since their balance sheets are collectively too weak to provide all the required investment into the UK electricity sector and also the UK is not necessarily their main strategic focus.

The capacity mechanism should be bankable and target new plant and not reward existing plant

In the interest of affordability and capital attraction, the capacity mechanism should benefit new plant only, since this plant will be more efficient, less polluting, and have a better carbon footprint than existing plant. Furthermore, additional revenue streams for existing plant would constitute a windfall payment to plant which will have already recouped much of its investment costs and will remain open anyway as long as electricity wholesale prices are above its marginal operating costs.¹

Under a targeted mechanism (i.e. direct procurement under STOR), funding of new plant will be enabled if there is a guaranteed bankable minimum income stream for a long period, say at least 15 years.

¹ If payments are made to existing plant which is genuinely intended for closure, they should be limited to covering demonstrated costs of maintenance, not set at the level required to support new investment. Such plant should also be limited in running hours to avoid discouraging the construction of new plant.

The capacity mechanism will need to support gas plant

The UK's back up capacity requirement will increase as more wind and solar generation is connected and as larger nuclear plants are commissioned. By definition, therefore, the capacity gap cannot be filled by either of these forms of generation which could be unavailable at critical times. That gap will need to be filled by flexible and reliable generation that can be made available at short notice. Given the size of the potential capacity shortfall, the only realistic technology to provide the majority of the shortfall is gas. Modern efficient gas plants can provide capacity margin at an acceptable environmental cost

The capacity mechanism should only benefit plant which does not get a CFD

To ensure affordability and reduce the scope for anti-competitive arbitrage possibilities no plant which is funded through a CFD mechanism should be entitled to receive additional payment through a capacity mechanism.

For a capacity mechanism to be effective it should provide a secure revenue stream which is not linked to short-term wholesale price levels

In the interest of capital attraction, the capacity mechanism should provide an income stream which is independent of the level of electricity prices from time to time. The value of capacity is in its availability, not so much in its actual generation - the latter is remunerated through the wholesale price at the relevant time. In both the strategic reserve option and the reliability market option, the operation of the capacity market is linked to the wholesale market and on various interpretations effectively caps wholesale prices.

It is unclear how a scheme which links capacity prices to wholesale prices improves on investment decisions, especially if, in practice, one of the effects is to impose a cap on wholesale prices. In general, high wholesale prices support investment decisions.

To incentivise the new build of peaking plant the capacity payment will need to provide an acceptable (but proportional to low risk) return on the investment, as the likelihood of running hours (and therefore additional revenue from generation) is very limited and will not be considered by investors. Indeed any revenue earned when such plant is operated may not need to go in full to the investor but can be used to partially offset the overall system cost of maintaining the reserve capacity. In other words, for new build peaking plant the revenue from the units of electricity sold could go to the provider of the capacity payment with the investor recovering the variable costs of generation (fuel, maintenance etc) but recouping his investment return entirely through the capacity payments.

The capacity mechanism should not interfere with effective market functioning – concerns about market liquidity impacts

To be able to attract new sources of finance and non vertically integrated new entrants into generation, the electricity wholesale market has to be liquid, competitive and transparent. Otherwise it becomes impossible for potential market participants to value and manage the risks associated with investing into the UK electricity generation sector.

We are concerned that, in order to work, the EMR proposals rely on a degree of market liquidity and market functioning which we do not currently enjoy and that they contain elements which are likely to further reduce market functioning and liquidity and hence raise barriers to effective market entry and competition in both wholesale and retail.

For example, in the discussion of the strategic reserve option, the centrally procured capacity is removed from the energy market. If these volumes are marginal, then it is questionable why the mechanism is being introduced in the first place (unless this is done to introduce the principle and for future learning as we argue above) and, if they are not, then removing them from the wholesale market will reduce its liquidity even further and impede its effective functioning. Furthermore, given the expected future installed capacity of wind and other intermittent generation, the requirement for back up generation for when these intermittent sources cannot generate could be more than 20GW. It will be prohibitively expensive to procure this volume of generation as standby reserve power which does not run under normal circumstances. It therefore seems desirable that plant participating in the capacity mechanism is either relatively small (as we advocate) or is not removed from participating in the wholesale market.

A market-wide capacity mechanism would adversely affect wholesale market liquidity by reducing the incentive to trade wholesale electricity. If the objective of the market-wide capacity mechanism is to ensure that at all times there is a stable and generous capacity margin, then this will greatly reduce the prices in the forward markets as well as their volatility.

In a market in which the level and volatility of wholesale prices is depressed due to a capacity mechanism, market participants have little incentive to balance their positions since they will be able access balancing energy at low cost. There will therefore be less incentive to trade, and thus lower liquidity. Consumer prices, however, are likely to be higher in total than they would have been without a market-wide capacity mechanism, since the reduction in wholesale prices will be more than offset by the additional monies paid through the capacity mechanism especially if political risk aversion leads to its level being “too high”. Not only would the incentive to balance positions be reduced and consumer prices raised, but a market-wide capacity mechanism would also increase the benefits retailers enjoy from backing their demand base with their own generation portfolio in order to obtain monies from the capacity mechanism. This would further increase the already strong incentive for vertical integration and reduce any prospects of success for increasing market liquidity through regulatory interventions such as auctions.

The capacity mechanism should not interfere with effective market functioning – concerns about market power impacts

Experiences with the capacity mechanism under the Pool also suggest a concern that a capacity mechanism could be subject to “gaming” and manipulation by the large power generators if they control both the majority of the country’s power generation and a sizeable proportion of the facilities within, or available to, any capacity mechanism. Under the Pool several competition cases bore testimony to Ofgem’s concerns that large generators falsely engineered or increased capacity margin requirements when it suited them financially. To deal with this danger and to attract new sources of finance, there should be limits on the extent to which the Big 6 can participate in a capacity mechanism although this will inevitably give rise to competition issues and will need careful structuring.

We are concerned that various design options for the capacity mechanism will increase entry barriers into wholesale and retail markets and re-enforce existing market shares in these markets. For instance, if suppliers purchase reliability contracts, then this further enhances the benefits of vertical integration by internalising the non availability payments. If suppliers are required to hold contracts (rather than some central market operator), this increases entry barriers into retail yet higher. If the volume of contracts a supplier is required to hold is set on the basis of its market share, this again re-enforces market shares.

Further information on Carlton Power

Carlton Power Limited is a UK independent power station developer and has managed projects in the UK and Europe since the company was founded in 1995.

To date, they have been involved with the construction of over 1800MWs of installed electrical capacity and a further 2380MW of consented plants in the UK.