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Review of Electricity Market Arrangements – Second Consultation

UK – March 2024

The Department for Energy Security and Net Zero (DESNZ) has unveiled its latest thinking on its Review of Electricity Market Arrangements (REMA) in a second consultation document, the objective being the maintenance of energy security and affordability during a transition to a decarbonised energy system.

Support for Low Carbon Generating Facilities

Contracts for Difference (CfDs), or a revised version of them, remain the preferred mechanism for incentivising investment in renewable energy generating facilities. New CfDs address the problem of negative system prices by including a rule whereby generators do not receive a difference payment when market prices are negative. This rule, however, is seen as creating undue uncertainty and income risk for generators, as negative market prices are expected to become more common. The option of moving to a revenue cap and floor has been discounted for renewables, as has the idea of a Green Pool. Instead, DESNZ proposes to address the problem by a system of "future-proofed" CfDs, with CfD payments calculated by reference to the available capacity of the facility, either based on the installed operational capacity (a capacity-based CfD) or on the generating capability of that operational capacity, taking into account weather and light conditions rather than its actual production (a deemed output CfD). A capacity-based CfD would result in regular, fixed payments based on a facility's installed operational capacity independent of its actual generation (though potentially adjusted by reference to its actual availability for generation). Payments under deemed output CfDs would remain subject to the vagaries of the weather, especially in the case of wind. In either case, the *quid pro quo* for what is effectively an availability payment to the generator would be one-way difference payments from the generator in respect of periods when the market price exceeds the contracted CfD strike price.

A new possibility put forward in this consultation is for new renewable energy CfDs to be modified so as to create a greater incentive on the generator to participate fully in the wholesale market, rather than simply trading the facility's entire output day-ahead so as to eliminate the basis risk of the CfD's day-ahead strike price.

One possibility is for the CfD to be restricted to a proportion of the facility's generating capacity – some projects already take this approach voluntarily. Another is changing the market reference so that it combines a day-ahead market price with one or more longer-term forward market prices, establishing what DESNZ refers to as a hybrid or extended reference price. DESNZ has not yet done any detailed work on whether the risks of such changes outweigh the potential rewards, and it is particularly interested in feedback on the possible interactions with other indices used in the market, particularly those used in setting electricity suppliers' price caps.

Corporate PPAs (power purchase agreements direct between large end consumers and electricity generators) are seen as a potentially valuable stimulant to investment in renewable energy projects. Typically, such arrangements are deployed in connection with large-scale generating stations (5MW and above). The consultation invites suggestions as to measures that might stimulate the use of CPPAs to purchase output from smaller-scale renewable energy projects.

The consultation paper has next to nothing to say about nuclear generation, which, unlike renewables, will have its income determined by reference to a regulated asset base, under arrangements to be instituted under the Nuclear Energy (Financing) Act 2022.

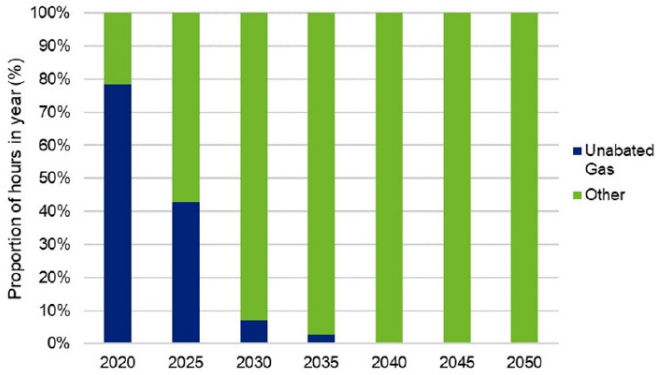
Capacity Market

Various options for maintaining security of supply during the transition have been discarded in favour of modest changes to the Capacity Market as the long-term solution for securing other forms of low carbon generating capacity that have the flexibility to cover peak demand, such as gas-fired generation equipped with carbon capture usage and storage capabilities (CCUS), hydrogen powered generation and long duration energy storage. Separate clearing prices for different technology types are proposed, established by reference to a minimum procurement of different types of generating capacity with different ranges of carbon intensity and/or production flexibility. In the intermediate term, at least until 2035, DESNZ envisages a significant role for unabated gas-fired generation from peaking plants, with a requirement for at least some new build capacity to replace retiring plant. An "optimised" Capacity Market is envisaged as providing the stimulus for investment in unabated gas-fired plant in the interim, perhaps being complemented by financial support mechanisms, such as the Dispatchable Power Agreement, for its conversion to CCUS in the longer term. In the short term, new low carbon emissions limits will not be applied to new and refurbished generating facilities until the 2026 Capacity Auctions at the earliest.

Wholesale Pricing

On the basis that an accelerated deployment of renewables will reduce the amount of time that unabated gas-fired generation sets the wholesale price, DESNZ has decided not to address the marginal pricing regime, so widely criticised for leading to the high electricity prices caused by the spike in gas prices that followed the onset of full-scale war in Ukraine. DESNZ considers that the low short-run marginal costs of renewables will result in prolonged periods of low wholesale market prices in future when the marginal price is set by renewables, with less frequent periods of high prices.

Figure 1: Proportion of time during which unabated gas will be the marginal plant under DESNZ's Higher Demand Scenario.



Source: Department for Energy Security and Net Zero, *Review of Electricity Market Arrangements Second Consultation Document*

DESNZ remains open to a market design that gives locational signals to achieve a better balance of production and demand across the country, in the expectation that this will result in lower costs being passed on to customers. It has, though, resiled from nodal pricing, whereby the marginal cost of supplying electricity is calculated at each grid supply point to account for local production and demand, in favour of pricing at a smaller number of zones, up to a maximum of around a dozen. The exact nature of any zonal pricing design remains uncertain. In addition to choices as to the number of zones and their boundaries, decisions have to be made as to whether generators should be subject to centralised dispatch, the degree (if any) to which consumers should be insulated from regional price variations, how that might be achieved, and how to allocate "interzonal" capacity to allow market participants to buy and sell electricity across zones. For generators with an existing CfD (including CfDs awarded at future allocation rounds prior to a decision on zonal pricing), a move to zonal market pricing is likely to be accompanied by a change in the reference price used in the CfD from the current price to a reference price for the zone in which the generator is delivering their output.

System Access Rights

As an alternative to zonal pricing, DESNZ is considering retaining the existing nationally priced electricity market pricing, with locational signals given by other interventions, such as rebalancing transmission charges and possibly distribution of system charges, particularly with respect to generation, now that it is no longer necessary for the government to apply EU limits on variations in charges for generation. Another proposal includes the removal of access rights to the transmission system for new, and possibly even existing, generating facilities, subject to the proviso that it would only be introduced in conjunction with either zonal pricing or central dispatch.

Other proposals still under consideration include localised constraint markets, use of battery storage to relieve transmission system constraints, and reintegration with EU balancing and reserve markets.

System Operation

A far more disruptive proposal remains under consideration, a reversion back to central dispatch by the system operator from the current system of self-dispatch introduced 20 years ago when the Balancing and Settlement Code replaced the Electricity Pool. The consultation recognises that a "transition to centralised dispatch would likely entail significant implementation costs, challenges, and risks for market participants" and that "the benefits would therefore need to outweigh these risks, and any potential implementation would need to minimise any market disruption." Consequently, there will be no decision as to whether to pursue this option after an assessment by the Electricity System Operator (ESO) to be published in the spring.

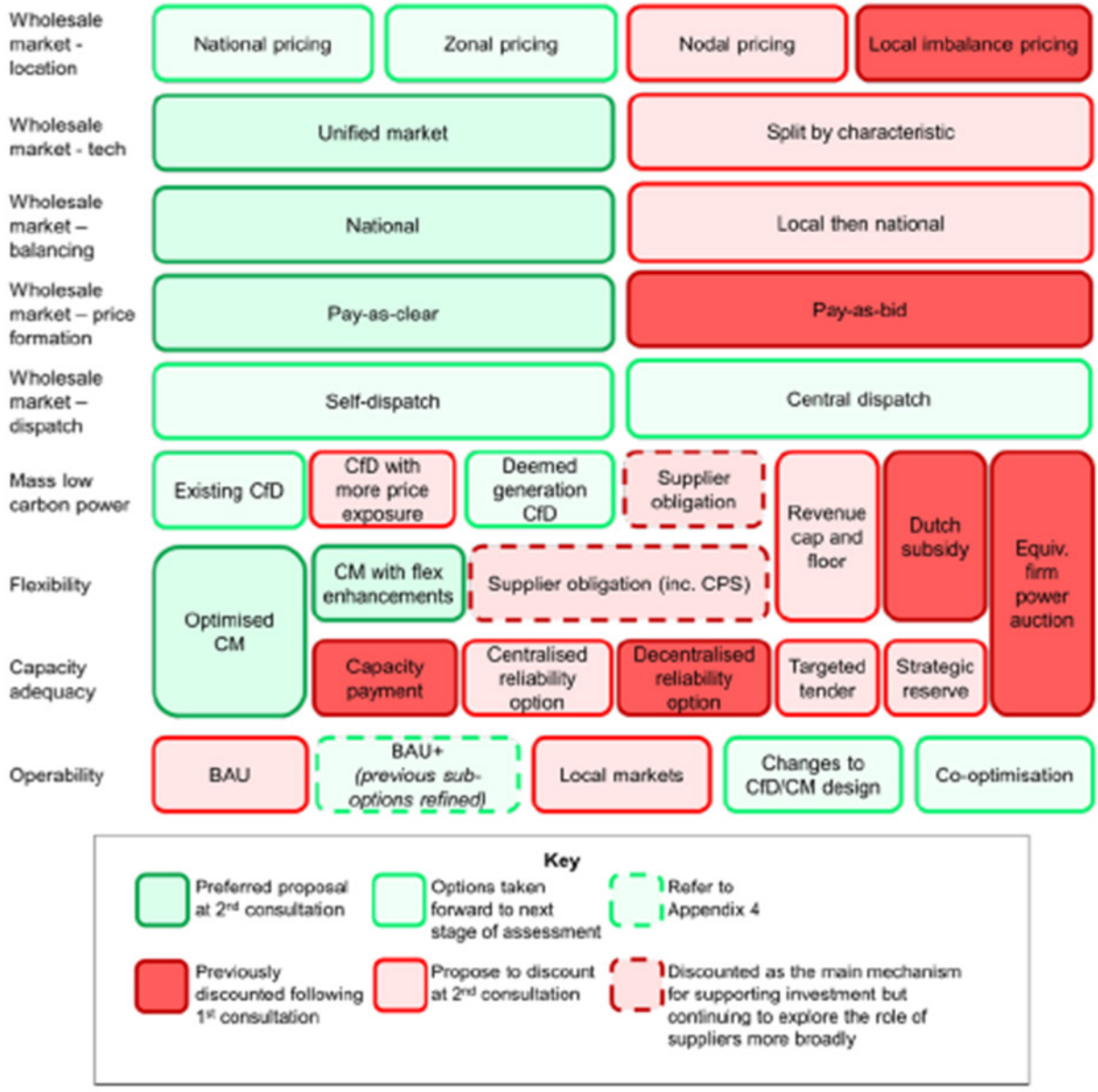
The possibility of shortened settlement periods of as little as five minutes, compared to the current 30-minute intervals, remains on the table, though the proposal to reduce "gate closure", the point at which generator's output nominations for a settlement period crystalise, to less than one hour ahead has been abandoned.

Other initiatives to be pursued in the longer term include work on decarbonising ancillary or system services, addressing perceived barriers to deployment of energy storage co-located with renewable energy generating facilities, and aligning the award of long-term ancillary services agreements with CfD and CM auctions, so as to provide more revenue visibility to developers to inform investment planning.

Commentary

The proposals are perhaps more enlightening as regards the options canvassed in the first consultation that have been discounted than those that are to be considered for further development.

Figure 2: Decisions on options proposed in the first REMA consultation document.



Source: Department for Energy Security and Net Zero, *Review of Electricity Market Arrangements Second Consultation Document*

Although various options have been ruled out in the second consultation document, few definitive final proposals have emerged. The difficulty in assessing the risks and benefits associated with proposals, such as zonal pricing, which are lacking in detail, is compounded by the complexities of the potential interactions between the different combinations of options still under consideration.

DESNZ indicates that it intends to conclude the policy development phase of the REMA programme by mid-2025 and move "into full-scale implementation from 2025 onwards, or earlier where we can". On the whole, it looks as if the review will end up with a continuation of the last decade's pattern of a patchwork of incremental changes followed by further changes to address unintended consequences. One possible exception to that trend would be a move towards central dispatch. Truth be told, policy decisions of that magnitude, let alone the detailed design of any radical new arrangements, are unlikely to take place until some time after a new government is formed, currently not expected until November.

Next Steps

DESNZ has indicated that it will be working closely with Ofgem, ESO/NESO and industry to develop different market designs under both national and zonal pricing scenarios, to enable it to assess and compare the risks and benefits of each design. The interaction between proposed reforms to the wholesale market and the CfD regime will be a particular focus in the coming months, with a view to identifying the optimal outcome given the ultimate objective of delivering cost-effective security of supply from a decarbonised electricity industry. DESNZ also wants to hear from market participants on the likely impact of the various proposals on their existing assets, and as to how they might be best protected from disproportionately adverse impacts.

7 May is the closing date for responses to the consultation, which can be submitted online. Discussions with industry participants will clearly continue for a long time after that. If you would like to be involved in DESNZ's onward going stakeholder engagement process, you should email remamailbox@energysecurity.gov.uk with the subject line "Request to participate in future REMA Engagement".

Contacts

Paul Brennan
Head of Energy Regulation, Birmingham
T +44 121 222 3315
E paul.brennan@squirepb.com

Trevor Ingle
Partner and global head of the firm's Energy & Natural Resources Group, London
T +44 20 7655 1514
E trevor.ingle@squirepb.com