The Department for Business, Energy & Industrial Strategy: 'Contracts for Difference for Low Carbon Electricity—Consultation on proposed amendments to the scheme'

Consultation response from the

Centre for Competition Policy

University of East Anglia, Norwich Research Park, Norwich NR4 7TJ

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Author(s):

- Professor Sean Ennis
- Dr David Deller
- Bryn Enstone

This consultation response has been drafted by the named academic members of the Centre, who retain responsibility for its content.

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CCP response to 'Contracts for Difference for Low Carbon Electricity – Consultation on proposed amendments to the scheme'

We welcome the opportunity to comment on the Department for Business, Energy and Industrial Strategy's (BEIS) proposed amendments to the Contracts for Difference (CfD) scheme for low carbon electricity generation. Deller et al. (forthcoming)[1], a retrospective evaluation support study on the state aid rules for environmental protection and energy for DG Competition, European Commission is due to be placed in the public domain in the near future. This study collates evidence on topics directly relevant to the consultation topics, in particular, statistics on the outcomes of bidding processes awarding operating aid to renewable energy sources and the occurrence of negative electricity prices on day ahead electricity markets.

The views expressed in this consultation response are those of the named authors and should not be seen to represent the views of the European Commission or the other organisations/individuals contributing to Deller et al. (forthcoming).

General Comments on Competition

We support the use of competitive mechanisms, i.e. auctions/tenders, to determine the level of support (aid) provided to low carbon electricity generation. The use of competitive mechanisms will hopefully lower the cost of procuring low carbon electricity generation, by only providing support to the cheapest low carbon providers. By identifying and supporting the cheapest generation, competition helps to minimise the cost of transitioning to low carbon generation. In turn, this increases the likelihood of successfully meeting climate change targets, if one recognises that uncertainties remain around the public's willingness to pay for the energy transition.

Having said this, it is valuable to highlight the importance of *actual* competition compared to *potential* competition. Potential competition refers to the fact a competitive process is being run, as opposed to support being administratively set, or certain design features of a competitive process, such as whether an auction is open to multiple technologies. Actual competition refers to the intensity of competition when a competitive process is actually run, it is determined by: (i) the number of potential suppliers, (ii) the quantity of capacity/output they bid, and (iii) the price (cost) of this capacity/output.

For actual competition to occur the volume of capacity offered by potential suppliers must exceed the volume requested by the auctioneer. If potential suppliers expect that the likelihood of the volume participating exceeding the volume requested is low, it seems likely to reduce the probability that they bid close to their costs of production.

Also, if the volume requested exceeds the volume participating and support is awarded at the auction 'price cap'/reserve price, while the auction offered the potential for competition the end result is support at an administratively set level. In auctions where there are doubts about supply meeting the volume requested, it is particularly important for the methodology behind the reserve price to be robust and ensure that an excessive level of support is not awarded.

[1] Deller, D., S. Ennis, B. Enstone, E. Glowicka, M. Hofmann, R. Klotz, P. Makela, G. Snaith and S. Witte (forthcoming), 'Retrospective evaluation support study on State aid rules for environmental protection and energy', a report by E.CA Economics, Sheppard Mullin Richter & Hampton LLP and the Centre for Competition Policy, University of East Anglia for DG Competition of the European Commission.

If the volume requested exceeds the volume participating due to a fundamental lack of supply in the short-run, a higher award price may not be entirely undesirable[2]; a high award price today can provide a price signal encouraging additional supply to enter the market in the long-run. However, when designing an auction, in particular whether (and how) to split it into technology-specific pots, there is a need to recognise that in pots where it is likely that the volume requested exceeds the volume participating the ability of competition to lower the award price will be limited/non-existent.

Given these comments, we welcome the recognition on page 22 of the consultation of the importance of setting auction parameters "to ensure competitive tension". However, we wonder how predictable the likely supply bidding into auctions actually is? Is it sufficiently predictable to allow the 'fine tuning' of parameters to ensure competition? If supply is largely predictable for the auction designer, it suggests total supply is likely predictable for auction participants, which may present challenges for competition.

Below we provide responses to those questions where we can make particular observations.

Responses to specific questions

4. Should the Government consider creating a register of renewable energy developments in England that lists available projects and associated community benefits?

We support efforts to further increase transparency around renewable energy projects and the financial support from government that they receive. At present, a general difficulty observed across Europe is the ability to the link together data identifying the renewable generation sites receiving support, the financial value of this support, the detailed support rules applicable to specific generation sites (e.g. regarding support during periods of negative pricing), and the generating output of these sites. If policymakers are concerned about the implications of support policies for the integration of renewables into the grid and the resulting outcomes in the wholesale electricity market, this type of detailed data is essential. Without this type of linked data it is difficult to assess questions around the value for money achieved by support schemes as the benefits, in terms of generation, from individual blocks of support cannot be identified. The routine provision of this type of data seems more important than a database of the community benefits resulting from renewable energy developments.

In light of Brexit, we hope that the UK government will either continue to require data to be fed into the entso-e transparency platform[3] or establish a UK-focussed equivalent containing the same detailed electricity market data. Nevertheless, we highlight a weakness of the current entso-e platform. At present, there are very few wind and solar installations listed on entso-e, which may result from reporting being required only for plants exceeding a size threshold. While accepting a minimum size threshold may be necessary, we believe this size threshold needs to refer to complete arrays rather than individual turbines, i.e. the threshold should apply to a wind farm as a whole rather than individual turbines on a wind farm.

5. The government welcomes views on whether, compared to maintaining the existing two pot structure, the proposed option of introducing a new Pot 3 for offshore wind is an effective means of ensuring value for money and achieving our decarbonisation and other objectives in the long term. We welcome the submission of supplementary evidence to support views on this.

[2] Assuming there is a clear case for the high volume being requested.
[3] See https://transparency.entsoe.eu/

As discussed above, an important influence on value for money is likely to be whether actual competition occurs within each of the pots, pots where the volume requested exceed the volume participating seem likely to result in higher award prices.

It is not obvious whether multi-technology auctions are likely to be associated with lower award prices than single technology auctions. This is likely because award prices are not only determined by the total volume bidding into an auction, but also by the distribution of prices bid by the competing suppliers (in turn reflecting the suppliers' cost of production). A potential issue with multi-technology auctions combining high and low cost technologies is that, if a low-cost supplier thinks the volume requested in a multi-technology auction requires some capacity to be awarded to high cost technologies, the low-cost supplier may raise the price they bid relative to that in a single technology auction.

6. The government welcomes views on whether the proposed options are an effective means of bringing forward a greater diversity of low carbon electricity generation.

A key question which the consultation does not address is the extent to which diversity in low carbon electricity generation should be a per se objective. If wind (in various forms) and solar mature such that they appear likely to meet the need for low carbon generation moving forward, the case for per se diversity appears to weaken. This becomes an ever more significant question as these technologies approach the point where they can be deployed without explicit state subsidies. As such, one would expect the case for keeping the 'less established' technologies pot to decline over time.

Whenever there is a departure from selecting the lowest cost low carbon generation, there is a particular need for transparency regarding the level of support being awarded and the reasoning justifying the higher level of support. In particular, the risks/downsides of mature low carbon technologies that are being offset through diversity need to explicitly laid out and, as far as possible, evidenced in detail.

It is also necessary to recognise potential complexities in defining the 'lowest cost' technology. In particular, if some technologies have different intermittency characteristics, leading to different costs in terms of required standby capacity, CfD auctions may fail to award support to those technologies with the lowest 'whole system' costs. In other words, more intermittent technologies receive a greater implicit subsidy from the presence of capacity mechanisms.

If the sole objective of an auction designer is to maximise the number of technologies receiving support/deployed (i.e. diversity), the solution is to have a separate pot for every technology. The downside to this is that such an arrangement guarantees support for technologies, regardless of their costs. Hence, there appears likely to be a trade-off between awarding support to the technologies which have the lowest costs today and achieving technological diversity.

While the consultation emphasises the question of whether or not to have a separate pot for offshore wind, it is difficult to evaluate the case for this design without information on either the volume requested in each pot or the reserve price/price cap in each pot. Without this information one cannot judge the trade-off between diversity and low-cost provision that the government is making.

22. The government welcomes views on how best to link the OREI decommissioning regime with the CfD scheme to ensure that offshore renewable projects that are party to a CfD fully comply with their obligations under the Energy Act 2004.

If a key aim of running CfD auctions is to establish the price/cost of low carbon generation and to award support to the lowest cost technologies, it is important that bidders in auctions are exposed to the full lifecycle costs of their technologies. If regulations or procedures mean they are not, it implies the relevant technology is receiving an implicit subsidy over and above that of the CfD. In the current setting, if offshore wind projects are not fully complying with future decommissioning requirements, it could imply that the award price for offshore wind is too low, leading to the quantity of offshore wind procured being artificially increased relative to the quantities of other generation technologies being procured. As a result, support moves to ensure offshore wind projects fully meet their obligations regarding future decommissioning.

23. The government welcomes views on how we might change our approach to administrative strike prices to ensure value for money in future.

On the basis that in the consultation document administrative strike prices refer to an administratively set maximum or 'reserve' price in auctions, it seems desirable for this price to be set carefully to ensure that excessive support is not provided when actual competition is weaker than expected. If a pot involves a single technology, that a technology-specific strike price is set seems entirely logical.

What is difficult to understand from the consultation document is how technology-specific administrative set strike prices function in multi-technology auctions. In a multi-technology auction the situation that needs to be avoided is that a technology-specific administrative strike price restricts the quantity of a low-cost technology procured, while allowing the procurement of a high-cost technology at a price above the level of the administrative strike price for the low-cost technology.

The final paragraph on page 37 of the consultation expresses concern that administrative set strike prices have been much higher than the realised clearing prices in auctions. While the government should always seek to maximise the accuracy of its administrative strike price methodologies, this result illustrates the general benefits of competitive processes in revealing information about costs unavailable to central government analysts. The modelling processes behind administrative strike prices may be intrinsically prone to error because over time maturing low carbon technologies are currently experiencing large, but unpredictable, reductions in cost. In this regard, competitive processes may have greater value where cost uncertainties are larger.

The comparatively high level of these administrative strike prices illustrates how costly support may be if the volume of generation capacity requested exceeds the volume participating. This emphasises the importance of understanding the likely supply of projects when designing auction processes.

30. Whether you agree the government should introduce the flexibility to apply any capacity cap, maxima and minima as either a soft or hard constraint, set on a round by round basis?

In terms of whether to have a hard or soft capacity cap, i.e. whether or not to award support to the entity whose bid takes aggregate capacity supplied from below the cap to above the cap, the key issue is whether the under-supply or over-supply of capacity is considered the bigger problem. If a cap is hard, less progress is potentially made to carbon reduction targets, while, if a cap is soft, there is more chance that the financial support awarded exceeds the budgeted amount, potentially by a large margin.

31. Do you have any views on the proposal to extend the negative pricing rule? Please include in your response any specific evidence in relation to the incidence and impact of negative pricing.

Changing the negative pricing rule so that aid is not paid when electricity prices on the day ahead market are negative (as opposed to when negative prices occur for six or more consecutive hours) reduces the likelihood that entities receiving aid will enter negative price bids and to some extent will reduce the likelihood of negative day ahead prices. However, the magnitude of the measure's impact is less obvious. There are other reasons behind the occurrence of negative prices and their prevalence, which fundamentally result from periods of low energy demand being combined with inflexible generation technologies.[4]

Cornwall Insight notes that 14 hours of negative day ahead electricity prices had occurred in the British market by 17 April 2020, 9 of these hours in April are likely the result of reduced electricity demand linked to the Covid-19 lockdown.[5] Elsewhere in Europe the occurrence of negative day ahead prices has been more frequent and increasing over time, especially in Germany and Denmark.

[4] See section 2.5 of Kyritsis, E., J. Andersson and A. Serletis (2017), 'Electricity prices, large scale renewable integration, and policy implications', Energy Policy, 101, pp. 550-560 for a general discussion of the factors influencing negative electricity prices. Academic papers discussing negative electricity prices in Germany include: Brandstatt, C., G. Brunekreeft, and K. Jahnke (2011), 'How to deal with negative power price spikes? Flexible voluntary curtailment agreements for large-scale integration of wind', Energy Policy, 39(6), pp. 3732-3740; Fanone, E., A. Gamba and M. Prokopczuk (2013), 'The case of negative day-ahead electricity prices', Energy Economics, 35, pp. 22-34; and Nicolosi, M. (2010), 'Wind power integration and power system flexibility – An empirical analysis of extreme events in Germany under the new negative price regime', Energy Policy, 38(11), pp. 7257-7268

[5] See https://www.smart-energy.com/regional-news/europe-uk/covid-19-surge-in-negative-wind-energy-pricing/ .