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Re: Pre-Consultation Document, GB ECM-08 – For the charging arrangements associated with the Offshore Transmission Network

Dear Tom,

Centrica welcomes the opportunity to comment on the pre-consultation document concerning the charging arrangements associated with the offshore electricity transmission network.

The arena of offshore transmission charging is very new and brings with it many unknowns. It is this very fact that the makes the application of the onshore charging regime to offshore a complex task, as various impacts associated with it. In favour of developing open, non-discriminatory charging methodologies, Centrica will highlight its views on the benefits and drawbacks of each of the issues for discussion and indicate where it supports any option.

Offshore Connection/Use of System Boundary

For ease of reference, the table below provides a summarised view of our analysis on the three options for the use of system boundaries. Table 1 separates the impact on overall TNUoS by the different elements of TNUoS under each option.

Table 1

Charging Option Impacts on TNUoS	Demand TNUoS	Total Generator TNUoS	Total Onshore Generator TNUoS	Total Offshore Generator TNUoS	Individual Offshore Generator TNUoS	Comments
Option 1: As Onshore - Offshore Substation LV Busbar	Increase	Increase	Decrease	Increase	Decrease	As more offshore generators connect, individual offshore generator TNUoS will decrease, despite total offshore generator TNUoS increasing. This is due to the requirement that each offshore generator must maintain a locational differential to each onshore generator in the TNUoS charges. Hence, the increase in total offshore generator TNUoS is less than the total differential TNUoS amount required between offshore and onshore thus offshore generator TNUoS tariffs will decrease (see ***Appendix A*** for high-level model).
Option 2: Offshore Substation HV Busbar	Increase	Increase	Decrease	Increase	Decrease	Same comments are for Option 1, however monetary impacts will be less as the substation costs will not be included. Here the offhshore generator will have to pay TNUoS and connection charges for the offshore assets.
Option 3: Onshore Connection Point	No major impact	No major impact	No major impact	Would pay TNUoS as if connected to onshore point	Would pay TNUoS as if connected to onshore point	The connection charges for offshore generators will increase, but they do not have to pay TNUoS for any of the offshore assets. In effect, the offshore portion of TNUoS is swapped for connection charges.

Option 1: Offshore Substation LV Busbar

Advantages:

Having the boundary at the offshore substation LV busbar is consistent and similar with the onshore methodology already in place. As such, the familiarity with the onshore methodology can be easily applied to facilitate the development of the offshore charging arrangements. As offshore generators are incurring additional costs on the OFTO so that it can transmit its electricity, it seems fair that the offshore generator TNUoS charges are higher to reflect this additional cost. The offshore generator(s) are the only ones using the offshore network and hence should pay the additional investment cost.

As noted in the document, onshore generation tariffs will decrease in order to keep the locational element of TNUoS cost reflective when including offshore cable costs. It could be the case that as more generators connect to an offshore substation (or other offshore substations) that current positive onshore generator tariffs become lowered into negative values to reflect this cost differential of the locational element. Clearly, onshore generators will only benefit from this offshore boundary.

Another advantage under Option 1 is that the offshore generator is protected from the OFTO's decision for additional substation investment for future capacity growth. This potential additional cost should not be placed on the 'original' offshore generator (i.e. the first offshore generator who connects to the substation), as it is not responsible for requiring this additional capacity. Rather, this cost should be spread amongst all the offshore generators wanting to connect to the offshore substation and all the other users of the system. In the high-level model analysis in ***Appendix A*** attached to this response, Option 1 does indeed appear to provide protection to the offshore generator. When comparing scenarios 2 and 3 to scenario 1 it is apparent that despite offshore generation TNUoS costs increasing for the additional investment needed for more offshore generators (columns M & N), the actual individual TNUoS cost per offshore generator decreases as more offshore generators connect to the system (column J). This is due to the fact that each offshore generator must maintain a cost differential with the onshore generators for the locational element of TNUoS.

Therefore, as more and more offshore generators connect onshore generator tariffs will decrease. At the same time total generator TNUoS tariffs increase (column L) and the proportion that is paid by offshore generators increases, yet *individual* offshore generator tariffs will decrease. On the whole, as more offshore substations are developed it seems that all generators at an individual level will be better off as they will see their TNUoS tariffs decrease from previous higher levels.

Disadvantages:
When reviewing Option 1 many disadvantages seem apparent. Firstly, demand users are at a clear disadvantage as they are responsible for 73% of total TNUoS charges and they will definitely see an increase in their tariffs.

Secondly, more complexities will arise as the current Price Control will need to be reopened each time a new offshore generator wants to connect to the offshore transmission network, and TNUoS charges need to be recalculated with the new revenue stream. Centrica believes that this impact and process needs to be analysed and detailed further before finalising any decision on the Option 1 boundary. When considering there may be an additional tender process required when determining the expansion factor, the cumulative effect of all the supplementary 'regulatory processes' needs to be fully assessed.

Thirdly, as there will be different OFTO bids for every revenue stream of the different offshore generation projects, the rates of return (i.e. the WACC) per project can differ as well. Centrica is highly concerned as to the potential volatility in the project WACCs because this can greatly influence TNUoS charges, especially demand TNUoS. It is unclear at this stage as to how exactly large variances in the WACC between projects will be safeguarded against. Further consultation in this area would be welcomed before Option 1 is considered as being viable.

Lastly, another aspect of Option 1 is that by lowering onshore generation tariffs other generation signals may be promoted. Some older less economically viable generators may decide to stay 'open' if their TNUoS charges decrease, making it more economically feasible for them to take advantage of peak shaving opportunities *only*, rather than providing consistent base load capacity. In this instance, the demand users of the system will not benefit and the offshore generators are in a sense subsidising profit opportunities for these onshore generators. Offshore generators who are taking additional risk to provide renewable/green energy and paying the locational cost differential of doing so in TNUoS may find this impact unfair, and perhaps further analysis on this area is needed to gather more feedback and viewpoints on how this signal could be avoided.

Option 3: Onshore Connection Point

Advantages:
Since Option 3 would in effect keep offshore assets separate from the onshore charging methodology, the disadvantages of Option 1 are avoided.

Demand TNUoS charges will be at an advantage, as any new and additional offshore investment cost will not affect demand TNUoS tariffs.

The complexity of opening the current Price Control is avoided, as well as the intricacies of the expansion factor calculation. The cost of all the offshore assets will be picked up separately in connection charges applicable to the offshore generator(s) using those specific assets. These costs are calculated independent of TNUoS tariffs and are detailed in an individual user's Bilateral Agreement. Thus, it is understood from this that there would not be a requirement to open the existing Price Control in order to include offshore generation.

In addition, the impact of fluctuating rates of return between different offshore projects and their the impact on TNUoS, is completely avoided. Rates of return may indeed vary but this cost will be picked up in the connection charge calculation and will be paid by each individual generator.

Furthermore, under Option 3 onshore generation tariffs will not decrease as a direct result of offshore capacity investment. This then means that the generation signal to older less economically viable generators can be averted.

It is evident that by having an onshore connection point use of system boundary the overall offshore charging arrangements will facilitate a simple, easy to use methodology. As noted earlier, offshore generation currently brings with it many unknowns and risks and therefore having an easily understood offshore charging methodology should not be discounted at this early stage.

Disadvantages:
The main disadvantage of an onshore connection point is that the 'original' offshore generator may be exposed to future offshore capacity investment decisions made by the OFTO. Another disadvantage is that there may be the need for a shared connection charging methodology to be developed, rather than using the single user methodology.

Option 2: Offshore Substation HV Busbar

Option 2 is essentially a blend of Option 1 and 3. As this is the case the comments raised about Options 1 and 3 are equally relevant for Option 2, hence no other views will be presented.

Centrica's View

Under any of the boundary options the OFTO will be able to recover its entire revenue stream, but how it recovers its revenue can affect different users in contrasting ways.

By applying the onshore use of system boundary to the offshore structure it is clear that mainly generators benefit. It seems apparent that the majority of the unknown and potentially significant risk is placed on the demand users as their TNUoS tariffs will increase. In the industry today a lot of risk and cost is already placed on demand, and we question whether it is appropriate to place the bulk of the offshore risk on demand users through the 73/27 demand/generation revenue recovery split. In fact, we question whether this revenue recovery split is applicable to the offshore network at all, as it is mainly the offshore generators who benefit as they gain a route to market for their electricity, a route that no one else can use (except for perhaps other generators).

Throughout the pre-consultation document National Grid make reference to the fact that offshore asset costs may be substantially higher than onshore. If this is the case then the increase in demand TNUoS tariffs will only be exacerbated over time as more offshore generators connect, placing a heavy burden of risk on the demand users. In addition, as it was noted earlier, individual offshore generators will benefit as more offshore generators connect despite overall offshore TNUoS increasing. It is not clear without further justification that using the existing onshore methodology offshore warrants passing a significant amount of offshore investment cost to demand, and may in fact impede on effective competition in supply.

In light of this Centrica favours Option 3. The onshore charging methodology would currently operate as it does without any major impact from any offshore investment decisions. This then means that the risk of a fluctuating rate of return amongst various offshore projects will not impact on demand TNUoS tariffs, but instead be borne by the offshore generator in its connection charge. As the offshore generator is seen as being the one who mainly benefits from the offshore network, this approach is viewed as fair and as result is fully cost reflective for the generator. Until other offshore generators connect to the *same substation,* the 'original' generator will have sole use of the offshore network so that it has a route to market for its electricity.

From the viewpoint of a generator, the impact of a connection charge would not necessarily be a barrier to entry in offshore generation. In a project's economic analysis, having an onshore connection point means that the connection charge would replace the offshore TNUoS charge that would have been incurred under Option 1. Ideally, regardless of whether the party concerned is a generator only or a generator and supplier, the decision as to how it should pass on the cost of connection should ultimately be made by the generating party. In this instance, the generating party bears all risk for the offshore assets and decides on how to pass on this risk, as it is their commercial decision to invest in the offshore project. From the viewpoint of the OFTO, it will be satisfied as having its risks covered since any risk from stranded assets will be compensated for through the termination clause in the connection charges agreement.

Furthermore, with zero redundancy connections offshore generators may be less susceptible to OFTO investment decisions than previously thought. New offshore generators may not be able to connect to existing substations and it may be easier and more economical to develop their own offshore asset network. If this becomes prevalent, then the risk of being exposed to OFTO investment decisions reduces greatly for offshore generators. This effect of zero redundancy connections may also lessen the need for a shared connection charging methodology. However, even if it is needed it is not considered a major impedance when considered against the disadvantages of Option 1.

It is Centrica's strong view that the next consultation document should not only put forth one, but rather *two* charging options for consideration. The offshore arena has many risks and unknowns, and extending the onshore methodology to offshore brings with it many complexities. It would therefore be of great benefit to analyse and detail two contrasting charging options in the next document for others to consider before any decisive action is taken.

Offshore Circuit Expansion Factors

Centrica does not favour Option 1 or 2 where expansion factors would need to be calculated, notwithstanding this our views are presented below.

Specific Approach

Under this approach it is important to highlight that since there will be no price control regime for offshore transmission, it is essential that adequate due diligence is conducted on the bid revenue streams submitted by the potential OFTOs as the accepted bid will affect the expansion factor. As there are inherently higher risks in the construction phase of the offshore substation until the new offshore generation makes connection, it may be beneficial to have pre and post connection revenue streams submitted so that the expansion factors can be recalculated with lower amounts of risk post connection. In doing this the expansion factor will not include a high element of risk over the entire life of the assets. In addition, if there is no offshore price control regime then the agreed rules for having a 'reopener' to the revenue stream have to be clearly defined beforehand. This way offshore generators and demand users will understand what can impact expansion factors and ultimately TNUoS costs in the future.

Having said this, Centrica favours the Specific Approach in calculating expansion factors. It is also our view that the expansion factor should fund the locational part of TNUoS only, as splitting the locational from the non-locational assets should not be that difficult of an exercise. Not only is this approach more consistent with onshore charging, but it will also reflect a more accurate cost differential in the locational element of TNUoS that would otherwise be overstated. If the locational element of offshore TNUoS is overstated then this would exacerbate the decline in onshore generation tariffs. Centrica believes that avoiding this additional impact on onshore generation tariffs warrants an additional tender process of justifying the split of locational and non-locational assets, and in fact would be expected as part of the due diligence to be conducted in the bid process.

The disadvantage stated in the document for the Specific Approach is not necessarily seen as a strong disadvantage by Centrica. While a tender bid has to be accepted before a new offshore generator will be able to predict its future charges with accuracy, it can in the meantime turn to existing offshore projects and use their current actual and forecasted costs as a reasonable basis from which to predict their own costs. This approach is seen as being no better or worse than the Generic Approach, which has to make a number of assumptions about offshore assets only to have them reviewed against historical tender bid information once it becomes available, so that the generic expansion factors can be updated. Under the Specific Approach this can be done as well, as a new offshore generator can use existing historical information and amend assumptions according to its own project leading to a more useful and accurate forecast expansion factor (and TNUoS costs) for its offshore project.

Generic Approach

The Generic Approach is not supported by Centrica as there is too much scope for error. Many assumptions would have to be made across a range of connections that would have to applicable to a wide range of different offshore projects. So, although any new offshore generator could refer to a generic expansion factor to predict its future TNUoS costs, it would almost always be incorrect for an individual project. In an effort to try to minimise this error it is suggested that a period review/update of the expansion factor should be performed using historical tender bid information, and this will require an additional information provision within the tender process. This requirement can make the tender bid process more complex, similar to the split of asset costs under the Specific Approach.

However, under the Specific Approach option accurate cost reflective tariffs will be produced as well as it being consistent with the onshore charging methodology. This in our view, along with the opportunity for new generators to refer to historical bid information to forecast their own project TNUoS costs, outweighs the advantages of the Generic Approach.

High Voltage Direct Current

Centrica does not favour Option 1 or 2 where expansion factors would need to be calculated, notwithstanding this our views are presented below.

Whilst it may be possible that high voltage direct current transmission will be used for offshore transmission, it is not expected to be used in the near future and comments at this stage may be premature. Nonetheless, in order to capture HVDC costs the Specific Approach that splits the asset costs between locational and non-locational elements for the expansion factor is favoured. For the same reasons as stated above this approach is considered to be more advantageous than the Generic Approach by Centrica, and would maintain consistency within the offshore charging methodology should Options 1 or 2 be selected.

Generation Charging Zones

Selecting Option 1 or 2 for the use of system boundary may have an effect on the zoning criteria. As onshore generation tariffs decrease when more offshore generation connects to the transmission system, it is questioned whether this result would also impact the onshore zoning criteria of the £2/kW maximum spread of tariffs. For example, if the onshore generator tariffs halve overall would this halve the £2/kW spread as well? If it does have an effect further analysis on the changes to the onshore zones would be useful to review before either Option 1 or 2 is selected.

Should you have any questions regarding the comments in this response please do not hesitate to contact me.

Yours sincerely,

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