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RWE response to the Ofgem consultation on "Electricity transmission charging: assessment of options for change"

Dear Anthony,

Please find enclosed the RWE response to the Ofgem Consultation on Electricity transmission charging: assessment of options for change" published by Ofgem on 20th December 2011[1]. This response is provided on behalf of the RWE group of companies, including RWE Npower plc, RWE Supply and Trading GmbH and RWE Npower Renewables Limited, a fully owned subsidiary of RWE Innogy GmbH.

We welcome the opportunity to comment on this consultation.

We recognise that there is an "*an unprecedented investment challenge driven by the need to connect large amounts of new generation to the electricity networks to meet climate change targets, while continuing to provide value for money for consumers and security of supply.*"[2] Project Transmit has now reached an important milestone in its assessment of the various options for the enduring charging regime. A robust enduring regime for transmission charging is an important feature of the electricity market. In this context:

- The report presented by Ofgem[3] and the supporting analysis from Redpoint[4] demonstrate that the current cost reflective charging regime is a sound basis for delivering the Government's low carbon targets at least cost to customers while ensuring security of supply;
- We welcome the decision to rule out socialised charging as an option; and
- The evidence presented by Ofgem[5] and Redpoint[6] confirms our view that the costs of any socialised solution significantly outweigh any perceived benefits.

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[1] "Electricity transmission charging: assessment of options for change", Ofgem, 20th December 2011 (Ofgem, 2011)
[2], Ofgem, 2011, Page 1
[3] Ofgem 2011
[4] Modelling the Impact of Transmission Charging Options", Redpoint, 19th December 2011 (Redpoint 2011)
[5] Ofgem 2011, Page 2, Redpoint 2011, Table 5, page 53
[6] "Redpoint 2011

Furthermore, the evidence that has been presented shows that the case for moving away from the current charging regime to an alternative methodology based on so-called ""Improved ICRP"" is at best marginal in terms of power sector costs in the period 2011-2020 and detrimental in the case of customer bills over same period (a negative NPV of £0.897bn)[7]. The overall impact on consumer welfare over the period from 2011 to 2030 is negative (negative NPV £1.8bn)[8]. On this basis we believe that there are strong arguments for rejecting the "Improved ICRP" approach.

The current charging arrangements provide the correct incentives for those building new generation and enable the government climate change targets to be met at least cost to the consumer. This is the benchmark by which charging options should be considered and in this context we do not believe the case has been proven for change. Therefore, we do not agree with your initial view that "Improved ICRP" is "*the right direction for transmission charges*"[9].

From the analysis provided, it is obvious that "Improved ICRP" is not in consumer's immediate interests. Wholesale electricity prices, which are generally assumed to pass through to consumers, are driven by the marginal cost of price-setting plant rather than the generality of costs. Redpoint's modelling shows that "Improved ICRP" has a detrimental effect on overall wholesale electricity costs (a negative NPV of £1,227m in the period 2011-2020)[10].

Under the current arrangements users face a charge that reflects the fact that generators have equal rights to use the transmission system based on their Transmission Entry Capacity (TEC). Since these rights take no account of load factor we do not believe that it is appropriate to differentially charge users on the basis of a notional or derived historic-use load factor. Consequently charging on the basis on a deemed load factor under "Improved ICRP" may introduce undue discrimination. Furthermore, "Improved ICRP" will result in low load factor generators facing charges to use the system that are too low while those faced by "base load" generators are too high. This will have a detrimental impact on siting decisions, constraints costs and transmission reinforcement. In addition, higher charges for low load factor generation in areas of high demand (e.g. southern GB) will have a negative effect on security of supply.

"Improved ICRP" has a large distributional impact between individual generators and different types of Generation when compared with the status quo. This consequential impact must be considered in the context of the increased regulatory risk and its impact on the cost of capital. The potential adverse consequence of the high distributional impact might be justified if there were a longer-term benefit from a more efficient, cost reflective market. However, "Improved ICRP" does not deliver any such benefits.

Changes to the charging regime are being considered in the context of a changing external environment, in which an alternative approach to charging may be introduced. In particular, at a European level, there is an active debate for greater integration of electricity markets focused on market splitting approaches that might create multiple price areas within a national system or alternatively may create price areas that extend beyond national boundaries. This could be implemented as early as 2015. Also, in the UK, the Government is considering widespread changes to the incentives for the construction of new generating capacity that may strengthen or dilute the impact of transmission charging. Consequently, there is a likelihood that these developments may result in some change to the existing GB market arrangements in the medium term that would impact on any enduring charging regime.

Given that "Improved ICRP" has a negative impact on consumer welfare when compared with the status quo and taking into account wider statutory obligations relevant to regulatory decisions we believe that it

[7] Ofgem 2011, Table 3, page 34
[8] Data from Redpoint 2011, Table 5, Page 53
[9] Ofgem 2011, Page 5
[10] Data from Redpoint 2011, Table 5, Page 53

would be appropriate to reject implementation of "Improved ICRP". In addition, we note that such an outcome would be consistent with the recent decision on a modification to introduce zonal transmission losses (P229[11]) which was rejected as a result of wider statutory obligations despite a positive NPV and better meeting the relevant BSC objectives.

We therefore find no evidence to support the view that '"Improved ICRP"' is the right direction for transmission charges since there is no quantitative evidence supporting this approach and generation charges do not better reflect the costs faced by the Transmission Owners. In addition, the charges derived from the "Improved ICRP" methodology do not reflect the impact on siting decisions, constraint costs and reinforcement costs. Finally, "Improved ICRP" may introduce undue discrimination between generators and have substantial distributional effects which impact on perceptions of regulatory risk and the cost of capital. We conclude that maintaining the 'status quo' enables Government targets on low carbon to be met with no detrimental impact on security of supply and with the lowest impact on overall customer bills.

We have commissioned NERA to undertake a review of the consultation proposals and we will submit this to you separately for publication on the Project Transmit web forum page.

The answers to the detailed questions in the consultation document are included as an Attachment to this letter.

If you wish to discuss any aspect of our response, please do not hesitate to contact me.

Yours sincerely,

Alan McAdam
Wholesale Economic Regulation Manager

Attachment 1: Answers to the "Electricity transmission charging: assessment of options for change" consultation questions

[11] Balancing and Settlement Code (BSC) P229: Introduction of a seasonal Zonal Transmission Losses scheme (P229), Ofgem Decision Letter, 28th September 2011

Attachment 1: Answers to the "Electricity transmission charging: assessment of options for change" consultation questions

Chapter 4 Questions

Question 1: Do respondents consider that we have appropriately identified and where possible quantified the impacts of the Project TransmiT options?

We believe that the range of factors that affect Transmission Charges and their impacts on the charging options are not fully addressed in the Ofgem Report[1] and the Redpoint analysis[2].

Whilst the analysis presented by Ofgem[3] and Redpoint[4] provides an insight into the potential impact of moving away from the status quo charging model, we believe that some of the model inputs and the methodology do not fully address the issues concerned with providing incremental capacity. We note that the cost benefit analysis presented by Redpoint[5] is sensitive to a number of certain key assumptions such as the applicable load factors for individual plant in the "Improved ICRP" charging model.

There are several shortfalls in the numerical assessment process undertaken by Ofgem[6] and by Redpoint[7]. We would have liked to see the assessments that consider alternative views on the costs associated with reinforcing and expanding the networks especially the addition of the HVDC "bootstraps". We believe that the costs used for transmission expansion is understated and this affects the three charging options by a different amount in the long term. Specifically, the "Improved ICRP" and Socialised options both lead to earlier transmission build timeframes and a greater extent of transmission re-enforcements when compared with the status quo option, and would consequently introduce a larger cost on the final consumer bills. The full magnitude of this effect is not reflected in the power sector costs but appear in the final consumer bills since Demand pays a larger proportion of the transmission costs (initially 73%, rising to 85% in 2015).

In the justification for moving to the ""Improved ICRP"" model it was stated that the NETS SQSS uses a methodology similar to that proposed by the "Improved ICRP". However, the assumptions used by the NETS SQSS methodologies are not fully taken into account in the "Improved ICRP" methodology. For example, GSR009 consultation report[8] states that the generic incremental reinforcement cost assumptions are £1000/MWkm for boundary reinforcement, which is approximately an annuity of £100/MWkm (see extract below). The ICRP model uses an assumption of about £11.5/MWkm; this is an order of magnitude less than that used in the NETS SQSS cost benefit analysis. We believe that the step taken to move to the ""Improved ICRP"" is selective and the resulting charging proposals are lacking in rigour.

[1] "Electricity transmission charging: assessment of options for change", Ofgem, 20th December 2011 (Ofgem, 2011)
[2] Modelling the Impact of Transmission Charging Options", Redpoint, 19th December 2011 (Redpoint 2011)
[3] Ofgem 2011, Table 2, page 29, Table 3, page 34
[4] Redpoint 2011, Table 5, page 53
[5] Redpoint 2011, Figure 6, Page 32
[6] Ofgem 2011
[7] Redpoint 2011
[8] NETS GBSQSS GSR009 – NETS SQSS Consultation: Review of required boundary transfer capability with significant volumes of intermittent generation, National Grid, 9th July 2010

Extract from the GBSQSS Consultation Report, page 55[9]

"***Cost of Transmission Reinforcements (T)***
Since we are performing a generic appraisal, we use a generic reinforcement price of 1000 £/MW.km capital. Annuitised over ten years, this equates to a price of 100 £/MW.km. pa. For 2020/21 only, we perform sensitivities in which the transmission price is halved and doubled (50 £/MW.km and 200 £/MW.km pa).

Actual reinforcement prices currently being considered for real within the ENSG project to appraise the Gone Green scenarios exceed even these prices. This is broadly because we do not believe that a third major overhead line route from Scotland would be feasible within Gone Green timescales, and hence we are exploring offshore DC cables options, which have greater unit prices.

The Transmission Reinforcement cost is defined as the product of reinforcement price, boundary thickness and required capability. (Boundary thicknesses are shown in Figure 5). Thus 3.3GW capability on B9 equates to a transmission cost of £51.2m (3.3GW x 155km x £100/MWkm"

In spite of our reservations on the data inputs and the methods, we believe that the information provides a clear justification for retaining the current charging methodology given the detrimental impact on consumer bills of the alternative approaches.

We note that the Ofgem Report[10] and Redpoint Modelling[11] are based on demand charges derived from the current ICRP model. This means that demand charges are only affected in as far as the generation and transmission backgrounds change for the various charging options. We believe that this is a highly unstable situation, as inefficiencies may arise from poor siting and new build transmission as a result of charging demand on a different basis to generation. For example, new generation siting decisions would be made on one basis and a network expansion would have to be planned on that generation background, whereas demand would see a completely different locational variation of charges. Since transmission charges currently recover 73% of total transmission costs and potentially post 2015, 85%, of the total MAR under the modelled scenarios, the role of demand charges in efficient outcomes is critical to the success of any charging methodology. We believe that a strong locational charge for demand is as important as that for generation so that all users in generation rich areas can benefit from lower charges for network uses, which ultimately reduces the need for expensive transmission investment.

We also believe that the impact of the alternative charging models on demand charges should be considered in greater detail by Ofgem. In particular we are concerned that the "Improved ICRP" approach could have a material impact on the costs recovered from customers, while the timescales for implementation could impact on supplier costs. We believe that potential impact on demand charges should be thoroughly examined in considering any changes to the current charging regime.

Question 2: Do respondents consider that there are additional impacts which we should take into account in the decision making process and, if so, what are these?

The prospect of the current initiatives at EU and domestic level resulting in changes in market arrangements in the medium term means that any changes implemented as a result of Project Transmit

[9] NETS GBSQSS GSR009 – NETS SQSS Consultation: Review of required boundary transfer capability with significant volumes of intermittent generation, National Grid, 9th July 2010
[10] Ofgem 2011
[11] Redpoint 2011

could be overtaken relatively quickly by some other scheme. Consequently, when considering the Project Transmit proposals, the Authority should be concerned that any intervention may be overtaken in the medium term by other developments which appear to be in prospect.

When considering the impact of European policy it is important that then any enduring proposals for Project Transmit are robust and fully justified. However, we note that the Ofgem report states that "Improved ICRP" "*would also appear to be more consistent with the direction of European policy*"[12] but later it is stated that both the status quo and "Improved ICRP" approaches "*are more consistent with this direction of travel than socialised charging*"[13]. It is unclear therefore whether "Improved ICRP" is better than the status quo with respect to European initiatives. In this context we note that the "*exact form*" of European initiatives" *and the scale of their impact on transmission charging in GB is uncertain at this time*."[14] We believe that the status quo approach remains consistent with European policy which favours locational cost reflective charges[15] and that the case for introducing any change cannot be justified at this time.

Question 3: Do respondents consider that we have appropriately identified the potential interactions of the Project TransmiT options?

We are concerned that Ofgem may have selectively reported the information produced by Redpoint to support the move towards "Improved ICRP". We note that Table 5 of the Redpoint analysis indicates that the overall outcome for "Improved ICRP" in terms of power sector costs and customer bills is negative over the period 2011 to 2030[16]. Consequently we do not believe that a rational case can be made for implementing this charging methodology.

Question 4: Do respondents consider that we have appropriately identified the likely impacts or consequences of these interactions?

We do not consider that the distributional effects of the "Improved ICRP" have been evaluated in the cost benefit analysis. "Improved ICRP" will lower costs in "northern" charging zones and increase the costs in "southern" charging zones for intermittent generators while increasing costs for base load generators in both "northern" charging zones and "southern" charging zones. This results in a large re-distributional impact between generators. We note in the context of transmission losses (P229[17]) that the re-distributional effects are considered to be a key element in evaluating the impact of this modification proposal.

One consequence of the change in cost of charges for intermittent generation under "Improved ICRP" when compared with status quo is that more of this type of plant will be constructed in the North. Apart from the obvious dis-benefits of this in the form of increased congestion costs, inefficient investment transmission build and increased losses, there will also be a loss in security of supply as a result of more capacity located in constrained areas of the transmission system.

We note that in considering power sector costs the Ofgem report presents a favourable outcome for "Improved ICRP" relative to the status quo over the period 2011 to 2020 (benefit on total power sector costs compared to the status quo of £122m)[18]. The Ofgem report indicates the power sector costs increase by £500m in the period 2021-2030[19]. The Ofgem report dismisses this as "*small relative to the*

[12] Ofgem 2011, Page 5
[13] Ofgem 2011, Page 40
[14] Ofgem 2011, Page 10
[15] Regulation (EC) No 714/2009 of the European Parliament and Council of 13 July 2009 on conditions for access to the network for cross border exchanges in electricity and repealing Regulation (EC) No 1228/20003, Article 14(2)
[16] Redpoint 2011, Page 53
[17] *Ibid*
[18] Ofgem 2011, Table 2, page 29
[19] Redpoint 2011, Table 5, page 53

overall cost of supplying electricity in this period."[20]. We believe that the divergence between the "Improved ICRP" and the status quo is significant and we conclude that "Improved ICRP" has a negative impact on power sector costs over the period from 2011 to 2030.

In addition, in reporting reinforcement and constraint costs Ofgem fails to indicate the significant increase in costs under "Improved ICRP" over the period 2021 to 2030 when compared with the status quo[21]. We believe that it is important that these differences are highlighted.

We find it difficult to understand the section on impact on consumer bills. We do not believe that "Improved ICRP" can be more efficient with respect to customer bills when it results in an increased cost to consumers of £0.9bn relative to the status quo in the period from 2011 to 2020[22]. In addition, the Redpoint analysis confirms that the impact on customer bills remains negative in the period from 2021 to 2030[23].

Chapter 5 Questions

Question 1: Do respondents consider that we have appropriately identified and taken account of the key sustainability issues?

We note that the Ofgem[24] and Redpoint[25] analysis indicates that all three charging models are capable of meeting the Government's sustainability targets. Furthermore, the analysis confirms that the current charging arrangements achieve these targets at the least cost for customers. As report concludes, all of the charging arrangements evaluated including the current regime are "*consistent with meeting the UK government's 2020 renewable target and carbon intensity goals with no material differences in the implications for security of supply*"[26].

In the context of sustainability it is worth noting that we believe the Government's support schemes will be adjusted to reflect any change in costs arising for low carbon generation as a consequence of changes to the charging regimes. Given that this is case, it is essential that the Government's targets can be met at least cost to consumers. The evidence presented by Ofgem[27] and Redpoint[28] demonstrate that the current charging arrangements will deliver the Government's targets at the lowest cost to consumers.

Question 2: Do you think there may be long term and strategic benefits associated with the development of HVDC technology , in particular the treatment of converter station costs for links that parallel the AC network, which Project TransmiT modelling has not fully considered because of the timeframe of the modelling (i.e. 2030) and the limited nature of the bootstrap options?

The analysis presented by Ofgem does not enable market participants to determine whether the charging methodologies are robust with respect to investments in HVDC links. However, we are concerned that a diminution of locational signals under "Improved ICRP" may result in increased congestion that could be used to justify investment in HVDC links. We also note that the analysis presented assumes that HVDC links may be justified on the basis of the current plans of the Transmission Owners (TOs). We would question this outcome and suggest that enhanced locational

[20] Ofgem 2011, page 30
[21] Redpoint 2011, Figure 18 page 48 and Figure 20, page 50
[22] Ofgem 2011, page 33-34
[23] Redpoint 2011, Table 5, page 53
[24] Ofgem 2011
[25] Redpoint 2011
[26] Ofgem 2011, page 5
[27] Ofgem 2011
[28] Redpoint 2011

signals with respect to HVDC links and their converter stations under the current charging arrangements could call into question the need for investment in such expensive links.

The issue of HVDC investment has been raised in the context of the RIIO price control. We believe that justification is required for this investment based on power flow based methodologies that show the forecast utilisation of the planned links. We believe that the analysis presented by the TOs does not give enough clarity on the future utilisation of these costly network expansions. In the context of Project Transmit, the network new build assumptions for the status quo charging option should be examined, as we believe that the network is over-invested for this option; this is shown by the resulting constraints in Figure 11 in the Redpoint Report[29], where the costs are projected to be less that £100M/yr in the long run which may be considered as an indication of over investment.

Question 3: Do you have any supporting evidence for a different treatment of the converter station costs for the planned HVDC options?

We believe that the issue around HVDC converter stations is linked to the treatment of substations and the ancillary equipment associated with power transfers between different locations on the system[30]. We believe that there is a case that HVDC substations and ancillary equipment should be charged locationally. The mechanism by which these costs are fed into the ICRP methodology is via the Expansion Constant, which currently just looks at the costs of the overhead lines (our answer under Question 1 explores this). Under an outcome with more cost reflective locational signals that better influence generation siting decisions there would be more efficient transmission investment.

[29] Redpoint 2011

[30] Ancillary equipment includes static VAr compensators, inter-bus transformers and all equipment which connect the HVDC links to the existing transmission lines