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RE: Project TransmiT: Assessment of Options for Change

Dear Anthony,

Thank you for the opportunity to respond to this consultation on assessing options for change in electricity transmission charging. This is a non-confidential response, which represents the view of the Centrica group of companies, excluding Centrica Storage.

A wholesale review of the GB transmission charging arrangements has not been carried out since the introduction of BETTA trading arrangements; given the significant changes in generation mix, together with the introduction of Connect and Manage, this review has been beneficial and is welcomed by Centrica. Centrica, a major user of the electricity transmission networks as both generator and supplier, has been fully engaged with project TransmiT since its inception. We responded to the initial call for evidence, followed the academic debates closely, participated in the Ofgem-led expert working group to develop the options for change and studied the subsequent cost-benefit analysis in detail.

Having assessed the charging options against Ofgem's own criteria of deployment of low carbon generation, security of supply and overall cost to the system and consumers, we strongly disagree with the view that Improved ICRP (henceforth IICRP) is the right direction for transmission charging. In our view the current charging arrangements (henceforth Status Quo) best meet these objectives. In addition, given there are a number of EU changes (e.g. Commission prioritisation of EU Tarification) that have the potential to impact significantly on the GB charging arrangements, within the next 2/3 years, any material changes may prove to be an unnecessary, temporary and expensive disruption.

Our response can be summarised as follows:

- Centrica fully concurs with Ofgem that socialisation should be ruled out, but strongly disagrees that IICRP is an improvement on the Status Quo;
- The Impact Assessment concludes that consumers would face higher bills under IICRP and this is not consistent with Ofgem's primary objective to protect the interests of consumers;
- In IICRP, the use of an Annual Load Factor (ALF) and the application of the new SQSS investment backgrounds 'peak security' and 'year round' are not more cost reflective;
- The charges from IICRP will have an unjustifiably negative impact on many transmission Users;
- It is premature to make changes to the charging methodology before EU developments are clear;

- Redpoint's modelling contains some significant limitations due to the assumptions used;
- The Status Quo charging methodology should be retained, although some evolutionary change will be required to ensure that it does not conflict with future EU requirements;
- Any review of the G:D split should also take into account the distortion of TNUoS tariffs from the offshore charging methodology.

Below we provide our assessment of each option. We outline why socialisation should be ruled out, explain why we disagree with Ofgem that IICRP is the right direction for transmission charging and provide our reasons why the Status Quo should be retained until other external drivers require change. We then suggest areas where the Status Quo will need amending to ensure that it is future-proof.

Socialisation

We fully concur with Ofgem's view that socialisation should be ruled out. As a strong advocate of locational signals in transmission charges we have long argued that removing or reducing the locational signal would ultimately lead to generation siting in economically inefficient areas, resulting in investment which would otherwise have been avoided. This view was confirmed by the TransmiT modelling which demonstrated that under socialisation power sector costs would increase by £2.8bn to 2020 and consumer bills would rise by £6.9bn over the same period. Households are currently under significant financial pressure and with fuel poverty on the rise the introduction of socialised transmission charges would lead to an unjustifiable increase in costs for current and future customers. Furthermore, the Redpoint modelling demonstrated that the Government's 2020 renewables targets would be met under each of the three methodologies, thereby discrediting arguments that the current methodology is a significant barrier to investment in renewables and represents an obstacle to meeting environmental targets. In any case, we have consistently argued that if any further subsidy (which is what socialised charging represents) is deemed necessary to meet renewables target, it should be provided outside of the transmission charging regime.

IICRP

Centrica has analysed National Grid's IICRP proposals with interest. We note the argument that the methodology seeks to better reflect the characteristics of Users on the network and hence is more cost reflective than the status quo.

It is said that the improvements to the status quo arise from the introduction of two key characteristics. 1. An Annual Load Factor (ALF) element to tariffs such that generators with high load factors pay more in positive zones and vice-versa. 2. The introduction of a peak security tariff (from which intermittent generation is exempt) and year round tariff which is multiplied by ALF.

Centrica disagrees with the evidence put forward that improved IICRP is more cost reflective than the status quo. In our view it has not been robustly demonstrated that ALF is a more accurate reflection of network investment and the rationale for importing the SQSS changes into the transmission charging methodology is weak. There are a number of other key areas where we disagree that IICRP would be an improvement on the status quo or with Ofgem's rationale. These include the increase in costs to consumers, the impact on current transmission users, the limitations inherent in Redpoint's modelling and the assertion that IICRP is necessarily in line with EU developments. We provide more detail below.

In summary, we do strongly disagree that IICRP represents an improvement on the status quo and hence we do not believe it should be implemented. The evidence gathered under project TransmiT has demonstrated that the status quo is consistent with the Government's renewables targets and is the cheapest option for consumers. It is Centrica's belief that the status quo charging methodology should remain in place until EU developments or other factors necessitate a further review.

a) The use of an Annual Load Factor (ALF) has not been proven to be a better reflection of actual network investment

The use of ALF is the defining characteristic of IICRP and represents the key difference from the Status Quo. National Grid argues that there is a direct relationship between ALF, constraint costs and ultimately network investment. Our view is that ALF has not been proven to be a better representation of network investment than the Status Quo and the Ofgem view that current arrangements contain “*some discrimination*” is unsubstantiated.

National Grid’s analysis of the relationship between load factor and constraint costs has significant outliers at a zonal level which undermines the basis of the proposals. There are major issues of correlation between load factor and constraints in each of the zones modelled by National Grid; upper North England appears to be the least correlated, although all zones contain significant outliers. Furthermore, in the northern zones (zones 0 to 4), wind generation shows the weakest correlation between load factor and constraint costs which is somewhat counterintuitive for a methodology which is designed to better represent intermittent generation in this area. Furthermore, National Grid’s own analysis shows that the proposed relationship between load factor and constraints significantly degrades from 2017 as more intermittent generation connects to the network. We believe it is illogical that a charging regime which is designed to better reflect the impact of intermittent generation, becomes less accurate as increased levels of intermittent generation connects.

We also believe that ALF represents a considerable oversimplification and is less cost-reflective. The load factor approach requires a diverse plant mix behind the boundary to share TEC but the IICRP model does not consider diversity of plant. This is particularly important in relation to intermittent generation which is often located in remote areas on spurs. If a 100MW windfarm is located on a spur, the network will need to be built to 100MW and no actual sharing will take place. This is likely to explain why onshore wind is an outlier in National Grid’s modelling. Furthermore, ALF does not take into account areas where generators are beneficial to the network. For example, under IICRP Langage power station would face a significantly less negative charge despite providing a significant benefit from being located in the South West.

Notwithstanding Ofgem’s decision to leave the detail of ALF to the working group, we do not believe that a signal for future transmission charges should be based on historic load factors of 5 years. Given the rapid pace of change in the generation mix (in National Grid’s operating networks in 2020 study, wind generation is expected to account for 25% of capacity by 2020 from the current 4%), and the consequential change in operational patterns / load factors to some non-renewable plant, using historic running patterns as a basis for future investment and charging is not cost reflective and does not correspond with National Grid’s arguments during CMP192 (user commitment for generators). National Grid argued that in order to make efficient investment decisions in the network it needs to know future, not past, generation behaviour. IICRP with a historic load factor does not provide this. Notwithstanding changes in the generation mix due to government policy, generators take into account a number of factors when determining whether to generate (e.g. fuel, cost of carbon, power price and weather conditions) which would not be reflected in a 5-year historic load factor.

b) The application of the new SQSS investment backgrounds ‘demand security’ and ‘economic’ to charging is not justified

The SQSS has changed such that two investment backgrounds have been introduced: a ‘demand security’ and an ‘economic criteria’. These investment criteria are reflected in the IICRP proposed ‘peak security’ and ‘year round’ charges respectively. This change has been made to ensure that there is sufficient transmission to meet demand at peak when intermittent generation may not be generating. National Grid argues that these changes should be reflected in the charging methodology. As intermittent generation is scaled to zero under the demand criterion as it cannot be relied upon to generate at peak demand, it is argued that it should be exempt from the peak TNUoS tariff. Centrica does not believe it is cost reflective for intermittent generation to receive zero peak charge unless it does not have access at peak. The issue is that intermittent generation does generate at peak (National Grid analysis has demonstrated that on average wind has a 5% load factor at peak) and is likely to take precedence over conventional generation which may be bid off. Furthermore, the full network investment would be required to accommodate intermittent generation at peak if it is located in an area with low generation diversity.

Whilst the dual background criteria makes sense when making one off transmission investment decisions, it appears to be neither logical nor cost reflective to directly translate this into charging. Whilst bulky transmission investments are one-off decisions, made under either the demand security or economic criteria, within the charging methodology, circuits could easily flip between criteria from year to year due to changes in the generation background. Hence, many circuits built under a demand security criterion may well be tagged as year round circuits under the charging methodology and vice versa. In this respect National Grid's IICRP proposals appear to contradict their previous position where they have stated that they do not believe that a direct link between deterministic criteria set out in the NETS SQSS and the charging methodology necessarily needs to exist in order for charging to be cost reflective.

c) The Impact Assessment concludes that IICRP would lead to higher costs to consumers

Centrica has followed with interest the modelling exercise and subsequent impact assessment undertaken by Redpoint. We are surprised that Ofgem has recommended the IICRP model despite the £1.4 billion predicted impact on consumers' bills to 2030. This is especially surprising in the current environment of consumers being financially squeezed and subsequent regulatory measures being taken to reduce costs. This also appears to be inconsistent with Ofgem's primary duty to protect the interests of current and future consumers.

Ofgem notes that "*in the context of total costs, these improved ICRP bill increases are small.....higher prices could result in a more efficient market outcome if they more accurately reflect all the relevant costs*". Given the current focus on reducing costs, we do not believe that such an increase is acceptable or justified. We also note Ofgem's claim that note that "*higher prices could result in a more efficient market outcome....whilst a suppressed price is better for consumers in the short-run, it is inefficient and may ultimately damage consumer interest in the long-run*". We do not believe that it is possible to draw this conclusion from the Impact Assessment: between 2021 and 2030, the results of which appear disregarded in the document, showing that both power sector and consumer bills are expected to be negatively impacted by £0.5 billion. This demonstrates that in the long term, both the overall welfare cost of producing electricity increases as well as the final cost to consumers. In this respect we would welcome clarification on how Ofgem reached its conclusion and in the absence of this, would conclude that IICRP is not the most cost effective and efficient outcome.

d) The charges from IICRP will have a negative impact on many transmission Users

We do not believe that the Impact Assessment or Ofgem's consultation sufficiently recognises the impact that the different methodologies would have on individual users and hence the potential impact on security of supply due to premature plant closures. As regards IICRP, zones which currently have high TNUoS charges, such as North Scotland, become more attractive for siting plant with lower load factors and zones which currently have low positive, or negative TNUoS tariffs, such as the south of England, become less attractive for plant with this characteristic. This factor alone has significant impact on the economics of existing stations. For example, using Redpoint's 2013/14 tariffs Langage power station which is located in zone 20 would receive £6 million in TNUoS. Under IICRP it would only receive £0.8 million which does not appear appropriate or logical for a station that from an economic point of view is sited on a highly favourable part of the network. This negative TNUoS charge should be seen in the context of offsetting very high gas exit transportation charges of £5 million p.a. and as such a shift to IICRP is highly likely to have a significant impact on the economics of the plant.

Ofgem's also states that "*the 'peak security' wider tariff would have a relatively small impact on total charges. It is the use of load factor in the year-round wider tariff element that would have the largest impact on generator tariffs relative to the Status Quo*". Whilst this may be true on average, this does not reflect some significant outliers. In 2013/14 tariffs, under Status Quo, Centrica's Barry power station would pay a wider TNUoS tariff of £2.14/kW or £0.5mn. However, under IICRP this could increase to £6.75/kW or £1.65mn. This is largely the result of the introduction of the peak security tariff at £4.73/kW. This would almost certainly result in the closure of a station and reduce the number of plant available to National Grid for STOR and other balancing requirements. Should Ofgem choose to proceed with IICRP, given the impact on some parties, it is essential that the CUSC working group be instructed to develop the appropriate transitional arrangements (e.g. TEC reduction closure notifications).

We also believe that the IICRP model would inherently result in more volatile and unpredictable tariffs than the Status Quo, which equates to increased risk for generators. The increased volatility arises because in addition to the current drivers of unpredictability, (particularly TO revenues and generation connections / retirements) as mentioned above, the circuits are also likely to flip between the peak and year-round scenarios between years, thereby bringing further instability.

e) It is premature to make changes to the charging methodology before EU developments are clear

Centrica believes that the introduction of a new charging methodology at this stage would be premature given that European developments could force change in this area in the next 2 to 3 years. We do not agree with Ofgem's statement that "*improved ICRP appears more consistent with the direction of travel of EU policy*" and that the proposals are likely to increase regulatory certainty. This also appears to contradict an earlier statement in the consultation document that Ofgem has "identified a spectrum of emerging options" for charging in Europe and that "the exact form of these changes and the scale of their impact on transmission charging in GB is uncertain at this time".

Over the next 2/3 years ACER and ENTSO-E will develop tariffation guidelines and codes for electricity transmission which will seek to harmonise transmission tariffs across the EU to support the EU target model. In this respect we believe that it would be preferable to wait until EU tariffation principles are clearer before developing and implementing a new charging methodology. We would also note that this would also be consistent with Ofgem's decision to reject BSC modification P229 (the introduction of zonal losses) on the basis that the greater integration of electricity markets could result in changes to GB codes.

f) Redpoint's modelling contains some significant limitations due to the assumptions used

Centrica notes the significant amount of effort that Ofgem, Redpoint and the expert working group invested in the quantitative assessment. The result goes some way in estimating the quantitative impact that the charging options would have. However, within the agent simulation of the modelling some assumptions have been made which casts doubt on the value of the results. The assumptions made in the inputs mean that whilst the work is informative with regards to gauging the impacts of the options in terms of ranking, the actual estimates of the financial impacts are likely to be inaccurate. Furthermore, a recent report for the ENSG has shown that the expected costs of reinforcement have increased from £4.7 billion to £8.8 billion in large part due to the proposed HVDC links. This significant increase, which has not been reflected in the Impact Assessment, will make the impact to consumers even greater.

An additional concern is that the Impact Assessment reflects the IICRP proposals as they were put forward by National Grid. However, as a number of key levers such as the G:D split, the calculation of ALF and the treatment of HVDC converter stations have yet to be determined, the impact assessment does not reflect the actual IICRP that is likely to be implemented. In particular, the fact that G:D split will be determined at a future date, and may not reflect the G15:D85 from 2015 assumption used in the modelling, places a question mark over the value of the results. If a future CUSC working group is asked to further develop the IICRP arrangements, it is essential that the models used in the Impact assessment are made available such that future impacts can be estimated.

Below are some areas of key concern in relation to the analysis:

- The results are highly sensitive to changes in fuel prices. Hence, given this margin for error, results showing that IICRP reduces power sector costs by £0.1 billion between 2013 and 2020 are likely to be statistically insignificant;
- The modelling uses unrealistic assumptions for power station build. Once a power station is deemed profitable it is added to the model but its profitability is not reassessed during its

lifetime. This is likely to lead to an unrealistic generation background, especially over the 2021-2030 period;

- The methodology for choosing the geographical area in which stations are sited is flawed, thereby further reducing the accuracy of the generation background. For example, under the socialised option, Centrica's Round 3 offshore windfarm projects are no longer built in the Irish Sea (Centrica's designated zone for Round 3) but are built in Scotland due to the improved economics in this region. Given that it is impossible for Round 3 developers to change zone we believe that this scenario is completely unrealistic;
- The forecast TNUoS tariffs that the Redpoint modelling produced significantly underestimated the 2012/13 tariffs published by National Grid in January 2012 with any degree of accuracy. Indeed, there was a 10% difference between National Grid's tariffs and Redpoint's modelling. We believe that this casts doubt on the accuracy of subsequent tariffs and as consequence the validity of the estimates on transmission investment and siting of generation.

e) Ofgem's conclusions and next steps

As noted above, Centrica does not believe that IICRP is an improvement on the Status Quo. This conclusion remains robust when we assess the proposals against Ofgem's specific three primary criteria:

- Deployment of low carbon generation across GB and the impact on achieving the UK government's renewable energy target of 30% of generation from renewable sources by 2020;
- Quality and security of supply across GB;
- Overall cost of the system as a whole and customer bills.

On the deployment of low carbon generation and meeting the 2020 targets, all three of the models assessed deploy sufficient low carbon to meet the targets. Furthermore, the share of renewable generation under Status Quo and IICRP is identical until 2018. There is a slight difference between 2018 and 2020 of approximately 1 percentage point but given the margin of error we believe that the results should be considered to be largely the same. The amount of renewables deployed under the two options is also the same between 2020 and 2030.

As regards security of supply, IICRP is shown to lead to a reduced derated capacity margin relative to the Status Quo. The most significant impact is seen between 2021 and 2024 with an average difference of 3-4 percentage points. It is this reduction in margin under IICRP which drives consumer bills higher due to the increase in wholesale prices.

As regards the impact on the power sector and consumer costs, IICRP is also inferior to the Status Quo. Between 2013 and 2020 consumer bills are negatively impacted by £0.9 billion due to increased wholesale costs although power sector costs decrease by £0.12 billion over the same period. Ofgem states that the difference between the two (i.e. £1 billion) represents increased earnings by generators and transmission owners above their long-run cost of delivering electricity (i.e. changes in profits in the power sector). As such we do not understand how this is beneficial to the consumer. Between 2021 and 2030 the situation becomes even more negative with both the power sector and consumer bills each being negatively impacted by £0.5 billion. Given that bills are expected to rise in the long term under IICRP, we do not understand how Ofgem can conclude that this represents the most efficient outcome. In addition, with ENSG having doubled of the expected investment costs, the impact of IICRP will be even worse.

Whilst Ofgem has opined in favour of the principles of IICRP, we note that a number of detailed aspects have been left to be developed either by the CUSC Working Group or by National Grid in the future. These aspects include examining potential change to the G:D split, developing how ALF

applies to the year-round tariff and the treatment of HVDC converter stations. We do not object to certain issues being left for development at a later stage but we would note that two of the three issues, the G:D split and the treatment of HVDC converter stations, are essentially policy decisions. Hence if they are left to the CUSC they will require a strong involvement from Ofgem and/or DECC when they are examined. While the methodology to calculate ALF is not an insignificant element of the charging methodology, given its technical nature we believe that it is suited for more independent development by the CUSC working group.

Ofgem's decision paper should contain as much clarity as possible with regards to the scope of any future TransmiT CUSC process and specifically what parties can and cannot raise as alternatives / additions to the original proposals. For example, we are conscious that National Grid has recently published its high-level thoughts on charging for integrated onshore-offshore transmission. This paper appears to have potential overlap with TransmiT and it would be useful to gain guidance on whether it should be included in the TransmiT CUSC process or developed separately by National Grid. We also question Ofgem's decision to not assess the proposals against the relevant CUSC objectives. If these objectives are not considered at this stage, there is a risk that proposals developed by the CUSC working group fall at the final hurdle because the basis for their development is flawed.

Status Quo

For the reasons argued above, we do not believe that IICRP or socialisation represent an improvement on the Status Quo. Centrica believes that overall the qualitative and quantitative evidence has clearly demonstrated that the existing regime is the superior of the three options. We strongly support the continuation of the Status Quo, at least until a further review is required due to EU developments or other external drivers.

Should the Status Quo be retained it will require some evolutionary amendments to ensure that it does not conflict with future EU developments. This can be undertaken through the usual CUSC process and in this respect we do not understand how Ofgem can conclude that the "*retention of the Status Quo may rule out further examination of improvements to the existing charging methodology in the near term*". We believe that many transmission Users will favour the retention of the Status Quo and would be willing to provide resource to help further develop this methodology in areas such as the treatment of HVDC links which are part of the MITS (essentially, the future bootstraps), island links and the G:D split. Below we provide our view on how these elements might be developed.

There are currently two different ways to deal with HVDC converter stations: socialise them within the residual tariff or target them at generators within the locational tariff. Our initial view is that converter stations should be socialised within the residual tariff as this is consistent with onshore AC substations which are analogous to HVDC converter stations. However, we believe that treatment of HVDC substations is ultimately a policy decision given the impact that this change has on tariffs. As such we would welcome guidance from Ofgem if this part of the methodology is to be developed by the CUSC working group.

Developing a charging methodology for islands is another key area where the Status Quo will require development. The Status Quo and IICRP differ in the way that island tariffs are generated in that the latter effectively reduces them by lowering the security factor (where there is no redundancy) from 1.8 to 1. Centrica believes that reducing the security factor is a pragmatic development and we would support this change being made to the Status Quo methodology. Reducing the security factor to 1 for island links where there is no redundancy is consistent with the OFTO charging regime (which island links closely resemble in terms of the technology used) and produces tariffs which are comparative to those of offshore windfarms.

We had concerns about the modelling that showed a sudden change in the G:D split from 2015 without any strong justification, as such we welcome Ofgem's view that the G: D split does not need to be changed at this point. A change in the G:D split will represent a significant shift of cost from generators to consumers. Any change needs to be fully justified in terms of the European guidelines and there should be an appropriate transition period to ensure that suppliers are not substantially impacted due to any fixed contracts that they hold. Any review of the G:D split should also take into account the distortion of TNUoS tariffs from the offshore charging methodology. We had hoped that

the issue would have been included in this consultation for wider stakeholders to consider. The effect of the offshore regime had a significant impact on 2012/13 generation TNUoS tariffs; uncertainty around offshore revenues contributed to National Grid's forecast of the residual being inaccurate by £0.90/kW, which represents around 30% of the total tariff.

We hope this response has been helpful. If there are any of the points raised in this response that you would like to discuss in more detail feel free to contact me on 07789 579169.

Yours sincerely,

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