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National Grid Electricity Transmission plc  
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1<sup>st</sup> September 2006

Dear Tom,

**Pre-Consultation GB ECM-06 - For the charging and access arrangements associated with SQSS design variations based on customer requests.**

EDF Energy is pleased to have the opportunity to comment on the National Grid's pre-consultation for SQSS design variations on customer request.

We believe that the principle of double circuits has been essential in maintaining a fair and reliable transmission system and that it has to date not been uneconomic or inefficient to do so. The key requirements for the double circuit criteria has been to ensure that all generating capacity is available to provide adequate reserve, ensuring supply at times of peak demand and that firm access can be provided to all Users.

As the UK aims to economically reduce carbon emissions, increasing demands are being placed on the GB transmission system. This is principally through the connection of geographically disparate generating stations in what are inappropriate locations for investment in an efficient transmission system. The reason for building such stations is to reduce the carbon intensity of the electricity sector, not in providing adequate reserve to cover peaks in demand, which will remain the role of larger generating units.

We realise that maintaining the SQSS criteria for double circuits is inappropriate for intermittent generation which is non-essential for security of supply and infrequently generates at its rated capacity.

We agree with the pre-consultation in that the SQSS design variations on customer request (for such generation) should be encouraged. The discount should be adequate to encourage Users to opt for single circuits, but should have some consideration as to what value is "lost" in terms of security of supply.

We see the key problem as being able to provide some incentive to encourage renewable generators to volunteer, (compensating for the lost ROC value plus power), but not high enough to encourage essential large scale thermal plant to do so.

We believe that National Grid's third option, (in providing Users that opt for a single circuit with a TNUoS charge discount), is the best option for encouraging SQSS design variations on customer request and consider it suitable for further consideration.

National Grid has proposed three options:

**1. SQSS Modification:** Theoretically this is an appropriate solution, yet realise that it is difficult for a TO to decide on the economics and apportion risk to projects. As a result we understand why TOs are reticent in proposing this as a suitable solution. We also believe that the “risk” of outage when using a single circuit is something best managed by the User and not the TO. The valuation of compensation after outage is also a major problem for this option.

**2. Deeper Connection Boundary:** EDF Energy has always been supportive of cost reflective proposals and has always supported deeper transmission charging for connections, as this should lead to the most efficient and economic investment decisions. However we realise that the transitional access agreements pre-BETTA and more recent transmission access reforms (under proposals formed from the ARODG process) reflect a “shallower” approach. Our pragmatic opinion is that this option is presently unworkable within the current regulatory and energy policy framework.

**3. TNUoS charge discount:** This option provides the User with year-on-year discounts to TNUoS charges having opted for a single circuit connection. We believe that this is an adequate, pragmatic process for rewarding the User for opting for the single circuit and allows them to evaluate the risk/cost of outage against the savings made.

We shall consider option 3 in more detail:

**The nodal security factor and substation discount is only economic for onshore 33/66kV and offshore connections.**

National Grid has designed the TNUoS charge discount so that there are only two types of generation that will elect for the single circuit SQSS design variation. The nodal security factor discount only provides significant discount to connections that are either offshore or necessitating over 50km of 132kV line and eligible for the substation discount. We believe that this is an appropriate measure and that National Grid should explicitly state this as its reasoning in the wider consultation.

**Onshore:** If we consider an onshore 100MW wind farm, connected in zone 5 (SHETL), the range of discount varies from a £250k flat rate [10-50km] to £350-£475k [60km to 150km]. This pattern is similar in all SHETL managed zones, where the station qualifies for a substation discount at £2.50/kW and is connected on a 132kV line. For such a farm, the discount provides approximately 5 days of lost transmission access per annum. For NGC's zones, at a higher line voltage the discount is not significant, especially if the station only qualifies for the £0.50/kW substation discount.

It seems sensible that the TNUoS discount encourages stations further away from the system to opt for a single line and that 50-60km is an appropriate distance for the discount to take effect. However, National Grid's process of applying the +/-£1/kW tolerance for the nodal security factor discount creates a threshold boundary from the system where a station may elect for a single line. Some stations at the 50-60km threshold boundary may question the scheme's fairness.

Overall, we believe that the calculation will encourage onshore wind farms to opt for a reduction in SQSS standards, without encouraging other system Users to do so. We believe that the design of the discount does discriminate to the advantage of lower voltage connected stations in Scotland; however it is these stations that the system needs to be connected at the lowest cost to the consumer and that this is a suitably pragmatic solution.

**Islands and offshore:** If we consider an offshore 100MW wind farm, connected in zone 11 at 132kV, there is no TNUoS charge against which to compare the discount, so it is difficult to assess the compensation that a reduced TNUoS charge represents in terms of days lost. By our calculations the discounts increase from 33% at 20km to 40% at 60km and stabilising at 43% beyond 60km.

Overall we believe National Grid's proposals to provide the farm with discounts of over 40% on the existing tariff before any substation discount is applied, (with this not varying greatly by distance from the transmission system) is appropriate.

Yet there are some problems with the offshore and islands proposal. One key issue is that of shared lines and clustered connections. For instance if two 100MW wind farms are connected to the mainland from the isle and one opts for a single line, yet the other does not, there are theoretically three lines (300MVA of line supporting 200MW of export potential). If the single line of the first farm fails, it can still benefit from the redundant line. We believe that there needs to be some clarification as to the treatment of grouped generating stations and any SQSS requirements of demand within the proposals.

**Multiple cable expansion factors:** It is entirely sensible for a 100MW connected station opting for a reduced SQSS standard to have some redundancy built into the lines, by splitting the connection into two lines that support the rating of the generator. National Grid's statement that it may be necessary to introduce a 'multi-cable' expansion factor in the transport and tariff model is appropriate as the cable unit cost should represent that for a km of two cables and not just one.

**We agree with the pre-consultation in that the SQSS design variations on customer request should be encouraged and this should be implemented through a TNUoS discount.**

In summary, we believe that the TNUoS charging discount method proposed by National Grid is the most pragmatic solution. We consider that the method effectively targets the type of stations that do not necessary need the SQSS standard and that the level of discount appears reasonably cost reflective and fair. There are some problems with the method, such as how changes to TNUoS zones in future years will affect the discount and how a discount is applied to clustered connections and demand, although such problems can be resolved during the consultation phase.

If you have any questions on the above comments, please do not hesitate to contact me.

Yours sincerely

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