



Tom Ireland
Electricity Charging & Access Development
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

3rd November 2006

Dear Tom,

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 consultation for SQSS design variations on customer request.

We believe that the principle of double circuits has been essential in maintaining a fair, 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 and provide diversity to the fuel mix, not in providing adequate reserve to cover peaks in demand, which will remain the role of generating units that are able to guarantee power in short timescales.

We realise that maintaining the SQSS criteria for double circuits is inappropriate for intermittent generation which infrequently generates at its rated capacity. We agree with the pre-consultation in that 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.

National Grid has proposed that a User who opts for a single circuit connection (no redundancy) should be rewarded with year-on-year discounts to TNUoS charges. We believe that this is an adequate, pragmatic process for rewarding

the User for opting for the single circuit and allows Users to evaluate the risk/cost of outage against the savings made.

*Depending on line length (calculated from 20km to 150km)

We shall consider this in more detail:

The circuit and substation discount is only economic for lower voltage onshore and offshore connections – a proxy for renewables.

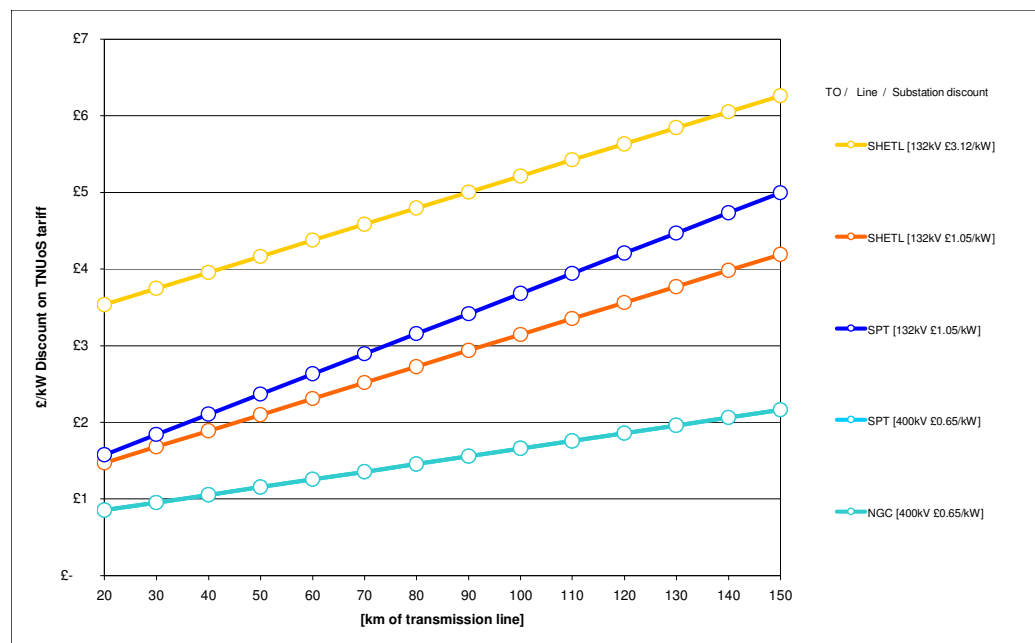
National Grid has designed the TNUoS charge discount so that there are only two types of generation that will elect for the single circuit SQSS design variation. The design variation discount provides significant discount to connections that are either:

1. Onshore, eligible for a higher substation discount (connected at 33kV or 132kV);
2. Offshore, where the security factor can be significantly reduced.

Onshore: National Grid has designed the SQSS variation discount so that: it increases with spur length; and smaller generators are eligible for a higher discount.

Figure 1 presents £/kW discounts for 132kV and 400kV connections in different zones, at a line length of 20km to 150km. It is evident that line length effectively doubles the potential discount provided through the substation discount. It seems sensible that the TNUoS discount encourages stations further away from the system to opt for a single line. We are happy that National Grid has removed the +/-£1/kW criteria that would have resulted in a step change in discount around 50km spur length.

Figure 1: £/kW discounts at increasing line length in different zones.



It is evident that it is the substation discount, not the line length that dictates the discount, so the higher £3.12/kW discount for 33kV connections discriminates against larger power stations (that would be connected on a 400kV connection) and only eligible for a £0.65/kW discount. We believe the substation discount has been designed to offset the lost value to a small renewable generator for the loss

*Depending on line length (calculated from 20km to 150km)

of ROCs during outage. In some respects we agree with this premise, yet would have preferred to see this reasoning in the consultation.

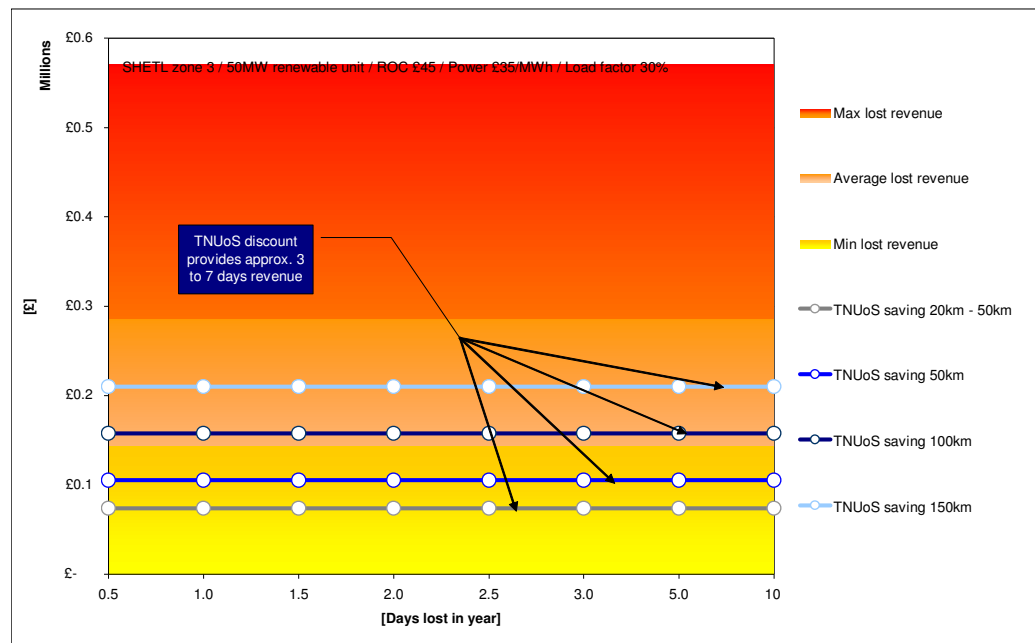
*Depending on line length (calculated from 20km to 150km)

If we consider an onshore 50MW wind farm, connected in zone 3 (SHETL), the range of discount increases linearly from £73k flat at 20km to £210k at 150km. This pattern is similar in all SHETL managed zones, where the station qualifies for a substation discount at £1.05/kW and is connected on a 132kV line.

The combined circuit and substation discount provides approximately 3-7 days* of lost transmission access per annum for a ROC accredited wind farm, which we believe is adequate incentive and risk for a project to accept. If a project qualifies for a £3.12/kW discount then the generator is provided with 6-12* days of lost transmission access.

This is shown in figure 1, where three levels of revenue accrued at 15%, 30% and 60% load factor (indicated by the yellow, amber and red shaded areas), is overlaid with lines that indicate the savings in annual TNUoS charges at different km line length.

Figure 1: TNUoS discount compared to the possible revenue lost at line outage.



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. 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.

It is entirely appropriate for the design variations to be targeted at renewables, yet would have preferred National Grid to explicitly state this in the consultation. In designing a complex line length and substation discount, National Grid has attempted to provide an economic mechanism for renewables to request design variations without encouraging other potential Users to do so.

*Depending on line length (calculated from 20km to 150km)



National Grid has forced charging to accommodate this new type of generation rather than reconsider the relevance of the current design stipulations to new connections.

*Depending on line length (calculated from 20km to 150km)

Islands and offshore: If we consider an offshore wind farm, connected in zone 11, 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 over 33% at 20km to 40% at 60km, then increase incrementally from 40% at a greater spur length. As could be expected, the greatest discount is 44% or 0.8/1.8. We are not sure if the substation discount would be additional to this.

Overall we believe National Grid's proposals, to provide the farm with discounts of over 40% on the existing tariff, is appropriate for offshore wind farms.

The proposal appears to be clearly beneficial for offshore developments; however we would not want it to encourage offshore connections at a lower voltage as it will increase losses.

Multiple cable expansion factors: It is entirely sensible for a 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. If a generator does decide to opt for a single circuit, which is then subdivided into multiple cables/lines, we believe that it should pay for this redundancy with an increase in TNUoS charges similarly to the discount considered in this proposal.

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 to encouraging developers to opt for a single circuit connection. 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.

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

Yours sincerely

David Scott
Electricity Analyst
Energy Market Strategy, Energy Branch

*Depending on line length (calculated from 20km to 150km)