BETTA "minded to" statement on the interim discount for small transmission connected generators and impact assessment

Thank you for the opportunity to comment on the proposed level of "discount" for small generators connected at 132kV in Scotland.

In line with Ofgem's proposed approach, the RPA supports setting the discount at a level that reflects the difference between the TNUoS charges faced by small 132kV connected generators in Scotland and those that the generator would have faced if it had been treated as distribution connected, taking into account the likely share of the benefits seen by embedded generators and other relevant factors (e.g. differences in connection charge). However, we consider that the application of this approach yields a higher discount than that proposed by Ofgem. The arguments in support of this higher value are set out below.

The transmission-connected generation pays the appropriate generator TNUoS charge for the zone in which it is connected. By contrast the embedded generator can enter into a contractual arrangement with a supplier to "net off" its generation from a supplier's demand in a GSP Group and thus reduce the Suppliers' TNUoS liability. The value the embedded generator will see is based on the contractual arrangement with the supplier – Ofgem suggests it might be ~50% (although this appears to be on the low side). Alternatively, exemptible generators can opt to register in CVA rather than SVA and so be paid the full amount of the avoided supplier TNUoS – such an approach may be more likely for generators connected at 132kV.

These arguments suggest that the discount should lie in the range[1]:

discount upper limit = 100% $TNUoS_{GZ}$ (gen) + 100% $TNUoS_{DZ}$ (demand)
discount lower limit = 100% $TNUoS_{GZ}$ (gen) + 50% $TNUoS_{DZ}$ (demand)

Subscript GZ refers to the generation zone in which the generator is connected and DZ to the demand zone used to determine the avoided supplier TNUoS charge.

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[1] The upper limit is based on the assumption that an equivalent embedded generator could be CVA registered and the lower limit on the assumption that the generator would be SVA registered and would split the benefit of the avoided supplier TNUoS charge with a supplier.

Taking a conservative approach, and using the lower end of the range, the discount would be:

(1)   discount = 100% $TNUoS_{GZ}$ (gen) + 50% $TNUoS_{DZ}$ (demand)

Under the latest proposed Charging methodology published by NGC, the value of the supplier charge ($TNUoS_{DZ}$ (demand)) is zero in the North of Scotland and £3.27/kW in Scottish Power's region.

Thus the above analysis suggests that the discount should be:

(2)   discount SHETL's region = 100% $TNUoS_{GZ}$ (gen)

(3)   discount SP's region = 100% $TNUoS_{GZ}$ (gen) + £1.60/kW

However, further adjustment is required to take account of other differences. Ofgem notes that a transmission-connected generator would pay shallower connection charges[2] than an embedded generator and may benefit from wider trading opportunities and lower electrical losses.   Each of these factors is considered below.

Deep/shallow

It is difficult to identify what the difference in a deep and a shallow connection charge might be as it will depend on the nature of the connection and there is little publicly available information on the differences.

However, in its consultation documents in late 2003/early 2004 Ofgem notes that DNOs' projections of shared costs for connections indicate that some 60%, by capacity, are less than £14/kW or ~£3.69/kW pa.   We have used this value, rounded up to £4/kW, as a rough proxy for the difference in annuitised deep and shallow connection costs[3].

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[2] **Under the new structure of distribution charges embedded generation will pay shallower connection charges and GDUoS but for simplicity, within this analysis, it is assumed that the combination of the new GDUoS charge and the shallower connection charge are roughly equivalent to a deep connection charge.**
[3] **We note that Ofgem's analysis implies a similar size of reduction in subsidy to account for this and other factors.**

Electrical losses

It is not clear that the volume of electrical losses that would be charged to 132kV connected generation would necessarily be higher if the generator is treated as distribution connected rather than transmission connected. If treated as distribution connected then the generator can be credited with the value of avoided demand transmission losses. In addition, the application of distribution loss adjustments **may** result in the generator's output being grossed up to reflect avoided local distribution losses (although any benefits at 132kV are likely to be less than at lower voltages). By comparison, the transmission-connected generation will pay for its share of transmission losses.

Access to more suppliers

It is difficult to assess the possible value of any wider trading benefits. Embedded generators can in any case opt to access some of these benefits by choosing to be CVA registered. However, to the extent that any additional benefits do accrue to the transmission-connected generator, they are unlikely to exceed the value of the other "embedded benefits" that it loses. For example avoided BSUoS.

Taken together these considerations suggests that an adjustment is required to reflect the differences in connection boundary but no further adjustments seem necessary.

Using these assumptions, equations 1 – 3 become:

(1a)   discount = 100% $TNUoS_{GZ}$ (gen) + 50% $TNUoS_{DZ}$ (demand) - deep/shallow adjustment

and

(2a)   discount SHETL's region = 100% $TNUoS_{GZ}$ (gen) - £4/kW

(3a)   discount SP's region 100% $TNUoS_{GZ}$ (gen) + £1.64kW - £4/kW

Using the most recent indicative values from NGC, this implies a discount of £9.71/kW in the lowest generator TNUoS charging zone (South of Scotland Zone 9) and a discount of £20.89/kW in the highest generator charging zone (Skye Zone 4). The minimum discount would be ~£8.92/kW in the lowest generator TNUoS charging zone within SHETL's demand zone (mid Scotland Zone 8[4]).

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[4] **Generator Zone 8 appears to straddle both SP's and SHETL's demand zones**

We note that Ofgem is proposing a fixed discount for all small transmission connected generation. Therefore, it may be appropriate to take an average (or weighted) value. A simple average of the two values at the extreme of the range suggests a discount in the region of ~ £15/kW.

The main reasons for the differences in the level of discount suggested above and that proposed by Ofgem appear to be twofold.

1. Ofgem has assumed that the locational element of the demand and generation charges are equal and opposite. This is correct at the nodal level but, due to averaging and differences in the zonal boundaries for generation and demand, does not hold at the zonal level.

2. Ofgem appears to have assumed that the value of the avoided generator transmission charge is shared with the supplier whereas, if the generator is treated as embedded, it would automatically avoid 100% of the generator TNUoS charge.

In addition, although our analysis is based on the assumption that an equivalent embedded generator would be SVA registered and only receive half of the avoided Supplier TNUoS charge, it could choose to be CVA registered and receive 100% of the avoided supplier charge thus further increasing the difference.