

## GB TRANSMISSION CHARGING: INITIAL THOUGHTS

### SCOTTISHPOWER UK DIVISION RESPONSE

#### 1 General comments

##### **The charging methodology is not suitable for the GB market.**

- 1.1 While welcoming the opportunity to contribute further to the development of the transmission charging regime for BETTA, ScottishPower UK Division is disappointed to note that the concerns expressed in our response to the Ofgem/DTI consultation on transmission charging for BETTA<sup>1</sup> have not been reflected in the brief given to NGC for their development of the GB charging methodologies. We continue to believe that NGC's current licence conditions should have been changed to reflect the new energy policy environment in which the GB market will operate. We believe also that the current England and Wales methodologies, developed in an environment of thermal generation and relatively short transmission distances, cannot be readily applied to the new environment of remote, renewable and intermittent generation sources and relatively long transmission distances.

##### **The methodology is not consistent with European legislation.**

- 1.2 Our main concern stems from the use of a methodology based on the notional estimated incremental cost of transmission capacity. The indicative figures given in both the 16 December consultation and the addendum published on 27 January clearly illustrate that this methodology produces charging rates that cannot be regarded as cost-reflective<sup>2</sup>, proportionate<sup>3</sup> or a suitable basis for sending locational signals to guide generators' long term investment decisions.

##### **It does not produce cost-reflective tariffs.**

- 1.3 The appendix to the 16 December consultation document helpfully shows indicative tariffs for England and Wales in 2004/5 and tariffs for all of GB in 2005/6. Both have been derived using the proposed charging methodology. The indicative generation tariff for every zone in England and Wales for 2004/5 is higher than the corresponding tariff for those same zones in 2005/6. Consequently the revenue that would be collected from England and Wales generators in 2005/6 would inevitably be several tens of millions less than would be collected in 2004/5 from broadly the same customer base. Clearly if the charges dictated by this charging method were cost-reflective for England and Wales generators in 2004/5, it follows that they could not possibly be cost-reflective in 2005/6.

---

<sup>1</sup> Transmission Charging and the GB Wholesale Electricity Market, August 2003

<sup>2</sup> Note that Article 4 (1) of EC Regulation No 1228/2003, which will apply from 1 July 2004, requires that the "**Charges applied by network-operators for access to networks shall be transparent, take into account the need for network security and reflect actual costs incurred insofar as they correspond to those of an efficient and structurally comparable network operator and applied in a non discriminatory manner. Those charges shall not be distance related.**"

<sup>3</sup> Article 23 (4) of Directive 2003/54/EC states that "**Regulatory authorities shall have the authority to require transmission and distribution system operators to modify the terms and conditions, tariffs, rules, mechanisms and methodologies referred to in paragraphs 1, 2, and 3 to ensure that they are proportionate and applied in a non-discriminatory manner.**"

- The resulting GB tariffs would be extreme and disproportionate.**
- 1.4 The range of the indicative tariffs published in the appendix to the consultation document (that is the difference between the tariff in the most expensive zone and that in the least expensive zone) would increase by over 70% for both demand and generation tariffs if the charging method were extended to GB, compared to the situation in England and Wales. However generation and demand in the GB system are only about 11% more than in the England and Wales system. It is clear that this charging method produces tariffs that are extreme and disproportionate and extending its application to cover GB makes that fact even more apparent than it is today.
- The charging method is entirely unsuitable as a basis for locational signals.**
- 1.5 The addendum to the consultation published on 27 January showed the impact on GB tariffs that occur if some of the assumptions made within the model are altered. The generation tariff for the north of Scotland varies from over £22 per kW in the base case to under £15 per kW in scenario 4. This movement of over £7 per kW, which is more than twice the average charge to GB generators, demonstrates that use of this charging method results in tariffs in the peripheral zones that are highly sensitive to certain subjective assumptions used in the model. It is therefore entirely unsuitable as a basis for locational signals to guide generators' long term investment decisions.
- It would have a discriminatory effect on generation from renewable sources.**
- 1.6 We also believe that the proposed methodology, when applied to GB, will discriminate against renewable generation, much of which will be located in remote areas with high transmission charges. If this charging method were to be implemented on a GB basis, then the average charge imposed on generation from renewable sources would be several times greater than the average charge to non-renewable generators. Such discrimination is specifically precluded under Article 7 (6) of the Directive 2001/77/EC<sup>4</sup>.
- 1.7 Nevertheless, recognising the brief which NGC has been given, we have provided comments below on the detailed matters covered in the consultation. We intend to contribute fully to the development of the GB transmission charging methodology.
- 1.8 With regard to the indicative tariffs quoted in the consultation paper and the addendum, we regard the correct base case as being the set of tariffs described as 'Scenario 2', i.e., those derived from a dataset with no known errors.

## **2 Fundamental issues**

- 2.1 As noted above, we do not believe that the existing England and Wales ICRP methodology is suitable for direct extension to the GB network. The indicative tariffs published in both the consultation paper and the addendum illustrate the unsuitability of the method for extension to a system which will be twice as long as the England and Wales network while having no greater width..

### *Effects of the extended network*

---

<sup>4</sup> Article 7 (6) of Directive 2001/77/EC states that "Member States shall ensure that the charging of transmission and distribution fees does not discriminate against electricity from renewable energy sources including in particular electricity from renewable energy sources in remote regions such as island regions and regions of low population density."

- 2.2 The different scenarios published by NGC are excellent illustrations of the extreme values of generator charges which are produced at the remote end of a long network when using the ICRP methodology. Generation in the two Scottish zones accounts for around 13% of the GB capacity, but would contribute around 56% of the revenue recovered from all GB generators. By no stretch of the imagination can this be considered to be proportionate.

*The illusory nature of the locational signal*

- 2.4 It is a well known property of the ICRP methodology that the locational signals which it provides are illusory. The generator seeking to locate in a low or negative tariff zone will, by doing so, increase the tariff in that zone. The sensitivity of tariffs in the peripheral zones makes this a particular problem in those zones; disproportionate sensitivity to entry/exit decisions is not a desirable attribute of a charging methodology.

**3 Connection charging**

- 3.1 We note the options available regarding the treatment of site specific maintenance costs. As long as these remain site specific we see no reason why these should be harmonised across GB. By definition, different users will face different site specific costs; there seems no reason why any difference in costs between TOs should not be reflected in the charges paid by the user. On the other hand, if these charges serve no useful purpose then they may as well be absorbed into the GB target revenue and recovered from all users.
- 3.2 As for the transmission cost factor, these appear already to be uniform across each network. If, under GB charging, there is no benefit to be gained from regional differences then these should be absorbed into the target revenue and recovered across all users.

**4 Transmission network use of system charging**

- 4.1 NGC has raised a number of issues in this section of the consultation paper regarding the issues which will arise from implementing the England and Wales use of system charging methodology across GB. We will address them in the order in which NGC raised them.

*Multi-voltage expansion constants*

- 4.2 ScottishPower UK Division has consistently opposed the use of multi-voltage expansion constants since they were first proposed. We believe that the underlying principle for this approach, that network expansion will take place at the same voltage as the existing circuit, is flawed. The expansion constant relates to increments of capacity, not decrements. Experience has shown that expansion of the 132kV and 275kV networks tends to take place at a higher voltage and recent publications<sup>5,6</sup> have suggested that the expansion of the Scottish networks to accommodate increased renewable generation will replace 132kV and 275kV circuits by 400kV circuits in both Scottish licence areas. Indeed, the 2003 NGC SYS contains several schemes which involve uprating circuits from 275kV to 400kV, and one which uprates a 132kV circuit to 275kV<sup>7</sup>. This methodology was designed to reflect notional future costs. We do not believe that the use of multi-voltage expansion constants properly reflects future costs and believe that an average cost of investment across the three voltages should be used for all circuits. This could be, for example, the weighted

---

<sup>5</sup> SP Transmission Ltd Seven Year Statement, 2003, paragraph 7.3.2 and figure 18.

<sup>6</sup> SSE Press release, 20 January 2004, *Preferred route for new £200 million 400,000 volt transmission line identified*

<sup>7</sup> NGC Seven Year Statement, 2003, table B.7

average cost per MWkm of capacity of the anticipated investment over the next price control period.

*Circuits with spare capacity*

- 4.3 We expressed concern during the Charging Review about the opacity of both the concept and the practice of designating some circuits as having spare capacity. We continue to be concerned, especially as this concept appears to interact with the issues surrounding the difference in security standards between the NGC and Scottish networks. This is covered more fully below.

*Generation charging base*

- 4.4 ScottishPower UK Division has recently responded to several consultations which raised the issue of the treatment of licence exemptable generation in Scotland. Suffice to say here that we do not believe that LEGs in Scotland connected at 132kV and below should be treated any differently from LEGs with similar connections in England and Wales. We do not support the extension of the TNUoS charging base to include such generators in Scotland. There are also issues relating to the access product which affect the generation charging base; these are addressed more fully below.

*Zoning*

- 4.5 We support the use of charge zones to increase the stability of charges. We were disappointed that NGC introduced the ability to re-zone annually, if it considers it necessary, under cover of UoSCM-M-10. The volatility of charges faced by particular generators in the event of re-zoning was illustrated by the changes between the indicative charges included in UoSCM-M-10 and the final tariffs for 2004/5. The volatility of charges in the northern part of the GB system could make re-zoning a regular occurrence, thus exacerbating the inherent volatility of the ICRP methodology. We agree that the zoning criteria for generation charging zones should be re-examined in the light of the nodal marginal costs, which result from the agreed GB methodology.

*Security Factor*

- 4.6 We note that the indicative tariffs have been calculated using the proposed England and Wales security factor of 1.9. There are a number of problems both with the use of a security factor and with the use of this particular value. Most important of these is consideration of the different security standards which apply to the Scottish networks when compared with England and Wales. The effect of the lower security standard in Scotland is to reduce the number of circuits which must be provided to meet a particular generation/demand scenario. The resulting network will, we believe, have higher nodal marginal costs than one having a more generous provision of circuits. Thus the nodal marginal costs of the Scottish network already include a premium relative to England and Wales due to the differing security standard. A lower value of security factor should therefore be applied across the Scottish networks to avoid users paying a disproportionate amount for system security.
- 4.7 Secondly, in the absence of secured loadflow studies of the GB network there is no way of knowing whether a value of 1.9 would be appropriate, even if a single security factor were to be used. Thirdly, ScottishPower UK Division was not convinced by the derivation of the factor of 1.9 for England and Wales which was published during the 2003 charging review. We believe that this value overstates the cost of security. We trust that the

necessary studies will be carried out, using appropriate contingencies on the different networks, to establish an acceptable method of dealing with system security.

### *G:D split*

- 4.8 We assume that the existing 25:75 split of revenue between generation and demand is to be maintained. We note that the amount of revenue to be collected separately from generation and demand through TNUoS charges is dependent on the connection charges. This further supports the need, noted above, for the GBSO to establish the connection boundaries and calculate the connection charges. Recent experience of the England and Wales charging review has demonstrated the potential for significant differences between indicative and final tariffs if the connection revenue is only estimated.

### *Substation and residual, renewables in the Highlands and Islands*

- 4.9 ScottishPower UK Division has responded to the small generators consultation regarding the proposed reduction in TNUoS tariffs for transmission connected LEGs and to the DTI consultation on the impact of transmission charging on the Government's policy objectives for the growth in renewables. We accept that the GBSO will need to take account of the outcome of these consultations when formulating the final GB TNUoS charging methodology. This may result in a need to recover additional revenue to pay any refunds to renewable generators. It may be more appropriate to recover this additional revenue through demand tariffs along with the 'Hydro benefit' subsidy recently agreed by DTI. This will require a further adjustment of the G:D split. It will be important to ensure that these separate revenue recovery elements are identified in the charging statements in order that the underlying charging methodology remains as transparent as possible.

### *Negative demand charges*

- 4.10 We note the predicament in which the GBSO is placed by the notion of negative demand charges. We regard this as further demonstration of the illusory nature of the 'economic signals' which the ICRP methodology is alleged to provide. There is no justification for introducing an arbitrary distortion of the economic signal for one set of users and not for any other. It would be far better to address this problem by reducing the overall spread of charges to remove the problem rather than by reallocating costs to particular groups of users.

### *Rights*

- 4.11 ScottishPower UK Division notes the issue raised by the GBSO regarding the quantity and quality of access rights in Scotland. We strongly believe that neither the quantity nor quality of access rights held by customers who hold signed connection agreements in any of the three pre-BETTA networks should be affected by the introduction of GB transmission arrangements. We have already written to Ofgem/DTI on this issue.

## **5 Process issues**

- 5.1 The 2003 England and Wales Charging Review has demonstrated the difficulties of taking forward a complex work programme like the development of GB charges. Many users whose connection charges have changed as a result of the fundamental changes to the methodology do not yet know their connection charges. The DNOs have been unable to produce DUoS tariffs due to the lack of information on connection charges.
- 5.2 This level of uncertainty must not be allowed to blight the introduction of GB charging under BETTA. Ideally, all users should know their connection charges, TNUoS charges and DUoS charges in time to inform the December contract round. This seems to us to be

the least which Scottish users are entitled to expect during such a fundamental reform of the market arrangements.

- 5.3 One of the reasons for the late change of tariffs in England and Wales was the process of recalculating the connection charges, the G:D split and hence the target TNUoS revenue. The equivalent process will be required for GB charging, with the added uncertainty of the overall target revenue and the treatment of the existing Scotland-England interconnector revenues.
- 5.4 The experience of the England and Wales review illustrates the folly of consulting on a methodology and indicative charges before these issues have been dealt with. We believe that work must commence as soon as possible on the agreement of Transmission Entry Capacities (TEC), assessment of the connection assets and calculation of connection charges in order to ensure that the final consultation on the methodology is informed by indicative tariffs which are soundly based. Without an early start and the full commitment of all parties it will not be possible to achieve the required timetable.
- 5.5 It must also be remembered that the current consultation uses the Scottish transmission licence areas as generation zones. At as early a stage in the development process as possible the tariffs should be calculated on the basis of generation zones derived from zoning rules. This will allow the zoning rules to be developed as necessary to produce sensible tariffs while allowing users a more realistic indication of the likely level of charges which they will face.

## **6 Other issues relevant to GB transmission charging**

### *Interaction of the access product and the TNUoS charging methodology*

- 6.1 The charging methodology complements an annual access product which, in England and Wales, is the Transmission Entry Capacity (TEC). The majority of directly connected generators in England and Wales are thermal generators which can be operated at the level of the TEC in response to market conditions, and can be operated at that level for prolonged periods. Many directly connected generators in Scotland are energy-limited in their operation and some must be operated in response to natural conditions rather than market signals. The single, TEC-based annual access product is not suited to this mix of generation sources. We believe that the generation capacity used in both the tariff calculation and the charging base needs to be re-assessed. It is possible that different values should be used in the different calculations.

### *Reconciliation of pre-BETTA transmission charges*

- 6.2 It is likely that there will be an under- or over-recovery of charges by each of the three transmission licensees in the year prior to BETTA. Provision will need to be made to deal with this on a network-specific basis after BETTA Go-Live.