

Charging Issues Standing Group

Actions & Issues from the Tuesday, 31st January 2006 Meeting

Actions from the Friday 02nd December 2005 CISG Meeting

- 1. National Grid to ensure that the length of future meetings allows for a full discussion of all the items on the agenda.**

National Grid confirmed that in future, a full day will be allocated to all CISG meetings initially, with a view to shortening the meetings to half a day if the agenda permits. This will ensure that all agenda items can be covered at future meetings.

- 2. National Grid to continue with the analysis which is being undertaken for GB Charging Condition 2, which relates to the incremental cost of capacity, and present initial conclusions to the January CISG for comment.**

Covered as item 4 below.

- 3. National Grid to provide a progress update on GB Charging Condition 3, which relates to the treatment of intermittent generation, at the January CISG.**

Covered as item 6 below.

CISG Meeting on Tuesday 31st January 2006

- 4. Condition 2 - Incremental cost of capacity**

National Grid gave a detailed presentation on its initial conclusions relating to Condition 2. The presentation can be found on the National Grid Charging Website at <http://www.nationalgrid.com/uk/Electricity/Charges/cisg/>

Firstly, National Grid explained the current methodology for calculating the incremental cost of capacity and how it is used in the current Use of System charging methodology. This was a high level summary of the presentation given in the second condition 2 workshop. Following this, National Grid went through the individual areas of the methodology it had looked at in connection with Condition 2. For each of these, National Grid reviewed the main issues, the analysis undertaken and, where appropriate, the options available. Finally, for each area, National Grid opened the discussion up to the floor to seek further industry views.

Transparency

National Grid noted where further transparency could be added to the current charging methodology and also how amending the methodology might improve transparency.

One industry attendee commented that whilst there may be opportunities for improved transparency of the wider Use of System charging methodology, it may be more appropriate to deal with detailed queries on a bilateral basis. It was felt that the process and assumptions used in calculating the cost of incremental capacity was certainly one area where the industry may benefit from more comprehensive coverage in the Statement of the Use of System Charging Methodology.

With regard to the data used in the calculation, National Grid explained that the investment cost per MWkm is calculated using the new build costs derived from the internal TR3 document which uses costs derived from actual tender information, estimates from suppliers, or previous information indexed using transmission cost indices. It was explained that TR3 costs reflect general site conditions but specifically exclude various costs including land, engineering charges and associated equipment.

The TR3 document is regarded as commercially sensitive information as the figures contained in the document are derived from actual tender information and is used for budgetary and contracting purposes. The TR3 production process is subject to external auditing to ensure the legitimacy of the document. An attendee enquired as to whether it might be appropriate for the industry to be introduced to the auditors responsible for auditing the document to uphold its legitimacy. Whilst this was considered, it was decided that such action would not be necessary as there was little mistrust that the figures would not be legitimate. The wider concern was that the appropriate basis of calculation was correct, rather than the numbers used.

National Grid explained that overhead line costs are calculated on the assumption of a build greater than 30km comprising 70% suspension towers. The costs of river, road and rail crossings are excluded from these costs, as are miscellaneous costs such as undergrounding, telecoms, tree felling, soil reinstatement and surveying etc. An attendee queried as to whether an assumption that 70% of towers over a circuit length of 30km is realistic as this would mean that almost one in three towers were something other than suspension towers, which seemed too high.

Post Meeting Note: National Grid can confirm that the approximation that 70% of towers are suspension towers is representative of the current transmission system, with tension towers and terminal towers accounting for approximately 30%.

It was also explained that the current methodology used to calculate cable costs assumes direct burial. It was questioned as to whether this was an appropriate assumption to make in modern times considering that cable installation may be more likely to locate predominantly in urban areas. National Grid suggested that although clearly some cable or parts of cables would not be direct burial given the project and site specific issues involved, inclusion of additional costs would be very subjective and hence, far less transparent. On balance, National Grid considered that direct burial was a reasonable assumption that didn't unduly dilute the cost reflectivity of the final tariffs.

One industry attendant questioned if it would be more appropriate to consider the relevant investment costs of the Scottish TO's in addition to those of National Grid contained in the TR3 document. National Grid commented that this was considered

during the GB charging consultation process and that information received from the Scottish TO's indicated that the costs were comparable to those of National Grid. It was therefore concluded that it would be appropriate to use the costs contained in the TR3 throughout Great Britain. As part of the condition 2 analysis National Grid indicated it was seeking to validate this assumption and in future would be seeking to ensure that data used in the calculation was GB rather than England & Wales based.

Forward-looking v Historic costs

National Grid discussed whether it is more appropriate to use forward-looking costs or historic costs in calculating the incremental cost of capacity. In order to treat new and existing Users equally, National Grid believe that the methodology needs to be forward-looking, though recognises that there is significant scope for considering exactly how forward-looking and which elements should be included.

During the first workshop and at previous CISG meetings it had been suggested that National Grid should consider a Transcost type approach. Although not directly linked to Condition 2, National Grid has considered the issues related to moving the methodology towards a more deterministic method of establishing the impact of increments. Simplistically, Transcost models the future investment required over a 10-year period by incrementing the base plan assumptions for the supply and demand scenarios with a given volume of capacity to identify the likely levels of investment required throughout the National Transmission System. A number of attendees expressed their unfamiliarity with the Transcost model and so National Grid agreed to publish the PowerPoint slides from a previous Gas Charging Methodologies Forum. These slides can be viewed on <http://www.nationalgrid.com/uk/Gas/Charges/TCMF/>

National Grid noted the similarity between Transcost and the Condition 5 report signals. National Grid does not currently have a tool that would predict future reinforcements similar to Transcost though the signals in the Condition 5 report could be considered to achieve a similar effect. National Grid proposed that future Condition 5 reports should include analysis of how accurate historic predictions had been. If a reasonable correlation between actual tariffs and Condition 5 forecasts can be established, National Grid would then consider how such forward-looking signals could be incorporated into the methodology for establishing the marginal km measure.

It was considered whether it might be appropriate to limit the use of historic data by restricting this to a period of no greater than say three years. Industry attendees suggested that such a move would not be in the interest of price stability. Under such a methodology, the costs would depend very much on the significant projects undertaken by the TO's in the recent past and perhaps more significantly, the location of these projects. A significant project undertaken in the centre of London for example, would heavily skew the costs over a three year period disproportionately, whereas over a ten year period, the skewing affect would be less dramatic. In addition, one could argue that although the investment had been made using signals that would be more cost reflective of recent historic commitments, it would not necessarily be more reflective of future investments.

An ideal scenario would be for National Grid to predict the future cost of investments and the future investment required. Given that this was clearly not possible, National Grid considered that the current tariff based on average historic costs adjusted by known indices to reflect future trends was reasonable. An improvement in terms of the Condition 5 report would be considered when it could be shown the forecasts were reasonably accurate.

Thermal ratings

This area was focusing on the assumption that the system operates at a unity power factor in the charging methodology (1 MVA is equal to 1 MW) although investment in reactive compensation equipment is considered separately. Whilst the incremental cost of capacity is derived from MVA figures, the Direct Current Load Flow (DCLF) transport model produces a MW figure. The discussion was opened up as to whether it might be appropriate to consider moving to an Alternating Current Load Flow (ACLF) model to incorporate the reactive power element of incremental capacity within the methodology. Industry participants clearly indicated that whilst an ACLF model has its merits in terms of precision, a move to such a model would add a disproportionate amount of complexity to the methodology in relation to the benefits that would be gained. It would also seriously reduce transparency and predictability.

As suggested at the last CISG meeting, National Grid presented alternative methods that recognised unity power factor was a simplification. The first of the options covered was whether it might be appropriate to consider calculating the incremental cost of capacity on a MW basis rather than an MVA basis. The second approach would be to scale the charging base figure in the tariff model. Both of these alternatives would require an assumed power factor. For demand, the power factor could be a GB or a zonal average. For generation, it could be the higher of the Grid Code requirement or a commercially agreed figure.

Following discussion on the options, it was generally felt that as the DCLF model does not deal with MVA and moving towards an incremental cost of capacity calculation on a MW basis was the better of the alternatives. National Grid indicated that the selection of a power factor would be very subjective. AC analysis would show that each line had a different power factor and the power factor used for design to accommodate post fault loads did not bear a linear relationship to pre-fault condition. On radial spurs this concept might be robust where the end user power factor could be identified, but National Grid did not believe it appropriate for the wider system where the designed level was dependant on many interrelated factors.

National Grid agreed to include more detail on the calculation based on MW rather than MVA, including indicative tariffs, in the report.

Spare capacity

Calculated on a £/MWkm basis, the incremental cost of capacity calculation does not include spare capacity on circuits. The DCLF transport model calculates an unconstrained marginal MWkm figure and therefore the historical cost of spare capacity is incorporated in the residual element of the TNUoS tariff, thus allocated across all users equally. In terms of the forward looking signal, it was noted that the issue of spare capacity was discussed at great length during the GB charging consultation process.

In discussion it was noted that a fundamental feature of the current methodology is the linear signal that it provides. One aspect of this is that the current capacity usage and actual capacity provided by a real system investment does not unduly influence the overall signal. Such a change for spare capacity of scaling the signal down for historic commitments could equally be applied on a forward-looking basis when new capacity is provided in excess of that actually required i.e. the length should be increased to ensure the initiating user receives the full signal. Such a change is effectively deep charging.

No alternatives to the current regime were offered during the meeting. It was concluded that further review of the treatment of spare capacity was not necessary.

Cost reflectivity of the expansion constant

National Grid opened the discussion as to whether the current methodology of calculating the incremental cost of capacity is perceived as cost reflective by identifying a range of elements that could be incorporated in a different manner.

The incremental cost of capacity is currently calculated using National Grid's regulated cost of capital for capital expenditure of 6.25%. It was noted that the Scottish TO's currently have different allowable rates of 8.7% and 8.9% and it was considered whether these figures should be incorporated into the calculation. The initial assumption that the inclusion of the Scottish TO's allowable rate of return would automatically increase the incremental cost of capacity across Great Britain was blurred by the fact that the allowable rates of return are calculated on a pre-tax basis to allow for the individual financial circumstances of each TO. It is likely that the post-tax figures for each TO would be more correlative and thus the impact would be less marked.

It was discussed whether it might be appropriate to calculate a regional incremental cost of capacity if the regional variation was sufficient and what the impact of this might be. It was considered that a regional variation might not be appropriate due to inconsistency with the overall methodology and the fact that the cost of capital element is only a proxy for the actual value.

When further considering the elements that should, or should not be included in the calculation, National Grid noted that interest during construction, engineering charges, associated equipment, undergrounding and telecoms are not included in the calculation as these are not kilometre-based. Rather than discussing those elements that should or should not justifiably form part of the calculation, the industry attendees noted their uncertainty over the materiality of including these components and asked that National Grid undertake further studies to illustrate this materiality.

National Grid identified the various techniques that can be used for increasing capacity, namely re-profiling, re-conductoring and the investment in quad boosters and reactive compensation equipment. Ofgem noted that the establishment of the charging condition was driven in a large part by the desire for further technical assessment in the area of alternative forms of providing incremental capacity.

The industry attendee's suggested it might be necessary to determine the materiality of the various options available prior to making any decisions. National Grid noted that this would be reasonable, but that it was more a case of determining what is the right thing to do regardless of the materiality and that assessing the materiality first should not be the driver for the decisions that are to be taken.

National Grid highlighted the next step was to produce a draft report for CISG. In this report National Grid would focus on three main issues. Firstly ensuring that the methodology explained how Incremental cost of capacity was derived, and how it is used in the model. Secondly, it would highlight the issues presented with a particular focus on ensuring Incremental Cost of Capacity was representative for GB rather than England and Wales. Finally, the report would seek to justify the use of new overhead line cost as a proxy for all types of new build.

5. Proposed Treatment of FMS Assets

National Grid circulated a draft of a modification proposal dealing with the treatment of Final Metering System assets prior to the CISG meeting for industry comment. Ofgem queried as to why the CUSC definition had been interpreted to prevent the transferral of the relevant assets into infrastructure at the time of the PLUGS modification. National Grid explained that Section 6.7.6 of the CUSC states that National Grid should charge the meter registrant an amount, which is reasonable in all circumstances. It was interpreted that if the assets were transferred into infrastructure and charged for as TNUoS (to generators and suppliers), the meter registrant would receive a zero charge which might not qualify as reasonable. As such, National Grid decided that the assets should remain as connections assets.

As the value of the assets proposed to be transferred amounts to a revenue stream of only 0.1% of the annual TNUoS charge, it was viewed that the effect could be sufficiently immaterial that there is no reason that the assets should not become infrastructure in the interests of allowing for a more efficient modification process.

6. Condition 3 – Intermittent Generation

National Grid provided an update of how it is intended that Condition 3, which relates to intermittent generation, is to be taken forward. The presentation can be found on the National Grid Charging website.

<http://www.nationalgrid.com/uk/Electricity/Charges/cisg/>

National Grid noted that there is a licence requirement that classes of User are not discriminated against unless it can be reasonably justified that the class of User has different costs to that of another User. Therefore in order to adjust the charges for intermittent generation, National Grid had to show that intermittent generation consistently initiated less investment.

Firstly, National Grid explained its interpretation of the SQSS and how this feeds through to investment signals. The GB security and quality of supply standard, GB SQSS, includes a deterministic and an economic assessment approach. This deterministic approach deals with the minimum transfer requirement and only applies to groups greater than 1500MW. National Grid also believed this was therefore not drafted with the current situation of relatively small renewable generation projects in mind. The current deterministic approach treats thermal (modelled at 83%) and wind generation (modelled at 60%) differently, but for local connections of less than 1500MW, there is no guidance.

The current GB SQSS also considers an assessment of the level of economic investment related to different classes of generation. It is this economic assessment that is currently driving transmission investment. National Grid highlighted a number of issues, principally the operation regime and costs of ROC's that drove the economic assessment.

National Grid concluded that there is currently no evidence to suggest that economic investment proposed for current generation projects is less for intermittent generation than for thermal. As such, there is no justification to modify the Use of System charging methodology for intermittent generation. National Grid agreed to keep the issue under review and to specifically consider the SQSS review.

7. Non-standard connections

A copy of the letter from Ofgem requesting that National Grid review the interaction between the GB security standards and the GB transmission charging methodologies and the impact on economic and efficient investment decisions was made available. National Grid noted that they are considering how to take forward this request and noted that similar issues are expected with offshore and island connections. With regard to offshore projects, it was noted that the licensing regime for such projects has not yet been decided. A copy of the letter can be found on the National Grid Charging website.

<http://www.nationalgrid.com/uk/Electricity/Charges/cisg/>

8. Connection Charging Methodologies

National Grid proposed that it may now be an appropriate time to take stock of the connection charging regime and asked attendees if they had any issues or concerns regarding the current methodology. National Grid also asked whether there may be any merit in simplifying the charges. There were no suggestions at this point, though one attendee did recommend that this might be an appropriate question to raise at a future TCMF in the presence of the Scottish TO's that may wish to share some of their 'transitional experiences' with both National Grid and the industry.

9. Condition 4 – Longer term fixed price access

National Grid provided an update of how it is intended that Charging Condition 4, which relates to the consideration of longer-term fixed price access, will be taken forward. A copy of the presentation can be found on the National Grid charging website.

<http://www.nationalgrid.com/uk/Electricity/Charges/cisg/>

From the initial questionnaire, published in May 2005, and the initial conclusions discussed at the TCMF in September 2005, National Grid noted that two strands of work had emerged; long term fixed tariffs and longer term access arrangements (i.e. a User commitment access model).

With regard to the development of long-term fixed tariffs, National Grid noted that there has been no great appetite for long-term fixed tariffs in isolation to the consideration of other issues. This was due to the drawbacks and risks perceived in the frameworks for fixing the tariffs i.e. National Grid taking the risk or the industry. Whilst there was no support for taking forward fixed tariffs it was agreed that there was merit in considering how tariffs could be made more stable and predictable.

National Grid noted that the transmission price control review is considering the merits of "User commitment" access models, but that it is difficult to take these forward until Ofgem have published their policy decisions in this area, which is expected in March 2006.

An attendee questioned whether it might be an option for National Grid to publish tariffs further in advance than is the case at present (tariffs are published at the end of January to be effective from 1 April). National Grid commented that this had been considered in the past, but would not provide any greater tariff stability as the tariffs would be calculated using more uncertain background assumptions.

National Grid noted that it may be appropriate to consider limiting the scope for making changes to the charging methodology in the future in the interests of providing greater stability, whilst the annual publication of the 'Condition 5' report and improved transport model information in the GB SYS would help to improve transparency. National Grid will aim to publish a report to Ofgem outlining the options considered and views of National Grid and the industry in early summer to address the stability and predictability issues, with User commitment to be taken forward as a separate piece of work, outside of the charging condition.

10. Any Other Business

The industry attendees were invited to raise any other issues that had not been covered in the agenda. There was no other business.