

Workshop Conclusion Report on Incremental Cost of Capacity

Introduction

As part of the Authority's approval¹ of the GB Use of System Charging Methodology, five conditions were imposed and Condition 2 includes the following provisions on NGC:

- to identify, review and assess further the technical basis for a range of alternative methods of estimating and reflecting in locational charges the incremental costs of capacity (inc. the method adopted in the approved methodology),
- to consult with interested parties to identify the range of alternative methods to form part of this technical assessment,
- to bring forward modifications for implementation no later than April 2007 if the review identifies potential improvements,
- to publish a progress report in April 2006, and
- to publish a report setting out the conclusions of the review in the event that NGC concludes there are no further improvements.

At the Transmission Charging Methodologies Forum (TCMF) meeting in April NGC presented a proposed timetable for condition 2 that commenced with an industry workshop to assess the options with this workshop conclusion report identifying the next steps.

Synopsis

The workshop hosted by NGC on 4 May 2005 was attended by 16 Industry participants. The objectives and format of the Workshop were to identify alternative methods for estimating the incremental cost of capacity with a conclusion report to be presented to the May TCMF meeting. The format included a morning session to identify alternative options followed by an afternoon session to assess pros and cons of the options identified. Both sessions were run in industry led breakout groups, with each group's conclusions presented and discussed by all attendees.

Workshop Notes

Following a short introduction setting out the objectives and format, NGC informed the participants of the existing GB methodology by presenting an overview of the calculation of the incremental cost of capacity. Attendees from Industry and NGC were then split into three breakout groups for a morning session to identify a range of alternative methods to calculate the cost of incremental capacity.

The results from the three groups were collated into 8 main areas and are shown below; the first 6 directly concern the calculation of the cost of capacity, whilst the latter 2 address wider issues:

¹ NGC's proposed GB electricity transmission use of system charging methodology: The Authority's Decisions, March 2005, 80/05. Available from: www.ofgem.gov.uk/ofgem/index.jsp

1. **Forward looking vs Historic costs / forecasting**
 - Consider different costing methods and assess the impact on new and existing users
2. **Transparency**
 - Users wish to be able to reproduce the £9.80/MWkm expansion constant value
3. **Cost reflectivity of expansion constant**
 - A 'basket of technologies' could be used instead of just OHLs
 - Various uprating techniques could be used instead of just new build
 - Does the methodology need to be deterministic or to rely on engineering judgement?
 - A "Transcost" type approach could be employed in the model so as to assess more than one year ahead
4. **Thermal ratings**
 - The present methodology uses the winter MVA rating as equivalent MW to calculate the £/MWkm expansion constant – are there any alternatives?
5. **Spare capacity**
 - Consider alternative methodologies
6. **Disaggregation of calculation and application into circuit specific, zonal or nodal basis for EC, EF & SF**
 - Existing methodology is calculated on a GB basis, alternatives on a more specific basis
7. **Commoditisation**
 - Consideration to be given to charge on a kWh basis rather than on a capacity basis
8. **Variable locational signals for generation & demand**
 - Due to the inherently different sensitivities that generation and demand exhibit when responding to locational signals, then this difference could be reflected in the methodology.

List of Pros and Cons

The above list of issues was shared between three new breakout groups to consider their pros and cons. The groups were also asked to consider any questions that they would wish NGC to answer to assist with the assessment.

Commoditisation

Commoditisation is when users are charged on a full or partial commodity basis (p/kWh tariff) rather than on a capacity basis (£/kW tariff).

Pros:

- Historically 10% of network investment is not related to system peak therefore recovery of this revenue on an energy basis could be argued to be more cost reflective.
- An energy charge could encourage flexible and intermittent (renewable) plant and it may be argued that they are being penalised at the moment

Cons:

- Discourages baseload plant
- Increases systems costs
- Increases uncertainty in revenue recovery forecasts, especially if locational

Questions:

- Is the 10% investment in non-peak similar on a GB basis?
- Is the 10% increasing or decreasing?
- What proportion of revenue recovery as opposed to investment is non-peak related?
- Is there a direct relationship between capacity/energy and locational/residual?
- Is it correct that the locational element of tariffs only raises 25% of total revenue, and of this 25% approx 50:50 is shared between non-secure and secured elements?
- If 10% is commoditised, is this 10% of total or 10% of locational?
- A follow up to the previous questions; should the entire residual element and/or security element be commoditised?

Variable locational signals for generation and demand

Any move towards this issue requires acceptance of the principle that the vast majority of demand is not responsive to locational signals.

Lower/No differentials for demand

Pros:

- Demand is insensitive to locational signals
- Simple
- Avoids negative demand charges

Cons:

- Some demand can respond to locational signals
- Transitional problems
- Embedded benefit reduced

Higher differentials for demand

Pros:

- Encourage energy efficiency
- Incentivise TRIAD avoidance in south

Cons:

- Result is still negligible
- Political turmoil
- Disincentivise TRIAD avoidance in North

Questions:

- How large would differentials have to be to have a significant impact?

Transparency

Users would like a methodology based on a basket of technologies weighted in some way, also with the individual costs disaggregated between cost of materials and land costs, civils etc. Additionally another transparency aid would be to have a worked example showing how the £9.81 of the expansions constant is derived.

Pros:

Predictability and comfort

Cons:

Using non-confidential data to provide full transparency could lead to reduced accuracy

Question:

- Why are NGC's contract prices confidential?

Forward looking vs Historic costs / forecasting

True cost-reflectivity will lead to deep connection charging, however, we are where we are, therefore, there is a balance to be struck between the historic cost (deterministic – what cost did you cause?) and future cost (judgemental – what cost will you cause?)

Cost reflectivity of expansion constant

General view that other techniques, such as a 'Transcost' type approach of using an average forecast of future years usage, should be assessed. In addition, there is probably a balance to be struck in considering the input data to the expansion constant i.e. including consent costs may increase the value of the expansion constant whilst using a basket of uprating techniques may reduce the value.

Thermal ratings

The fundamental choice is between a generic or specific reference i.e. MVA or MW. Once this debate is started it may be widened to zones/nodes/postage stamp.

Question:

- If a generic (MVA) approach is used, what power factor is considered?

Spare Capacity

Question:

- Should it be included again?

- If spare capacity is considered, how may it be determined?
- Options include an ACLF (Alternating Current Load Flow) model – more accurate but more complex than DCLF model), however any option still needs to choose between generic (GB) and specifics (zones/nodes/circuits) derivation and application.

Disaggregation

Disaggregation of input data has many choices i.e. circuit specific, zonal or nodal. The choice of applying the data into a high level model or a complex ACLF is seen as less important than the overriding priority for stability and predictability from the resulting model.

Conclusion

The workshop discussions covered a wide range of subjects, however, in considering the approval condition on incremental cost of capacity, the issues on 'Commoditisation' and 'Variable locational signals for Demand and Generation' are not strictly linked to the cost of incremental capacity. Therefore, they will be passed to the issues log to be considered by TCMF/CISG or a more appropriate approval condition work stream.

The remaining areas will require further assessment, including the key issue of transparency. One key observation made during the workshop was that transparency is something that evolves over time and that when there is a change to the charging methodology, users will tend to concentrate on the higher level issues, with their detailed knowledge and understanding developing afterwards as they become familiar with the principles and have any queries they may have answered by NGC. The concept of transparency is individual to each user and can realistically only be delivered to everyone over a sustained period of stability of the methodologies.

With the current methodology only recently approved, users' understanding is still in its infancy for many, and this was seen in the views expressed on transparency, the varied subject matter discussed at the workshop and the questions posed to NGC.

Whilst a number of areas were identified for further assessment, there would be considerable value in addressing user's concerns regarding transparency and their understanding of the principles underpinning the current methodology, before we move to the next stage and commence the assessment of the areas identified for development.

Therefore, prior to holding a workshop to consider further the key areas identified, NGC proposes to hold an initial session with the industry to examine the existing methodology in detail. This session, which will be arranged for late June or early July, will also identify any areas where further clarity or information may be beneficial to improve the transparency of the methodology, using the queries from the May workshop as a guide.

A third workshop will then be held to review and develop further the alternative options identified from the May workshop. At this stage NGC will propose our initial ideas on the issues raised. The conclusion of the third workshop will form the basis of the April 2006 report and include the areas identified for further development.

Views Invited

NGC appreciates that industry participants, who were unable to attend the May workshop, may have other views on charging Condition 2, in addition to those contained in this report. We would welcome any such comments, as well as any views on the content of this conclusion report from those who were able to attend the workshop. Any responses will be incorporated into the format and content of the next two workshops, with any major issues reported via the Transmission Charging Methodologies Forum meeting on the 8 July.

Workshop attendees and other industry participants are invited to submit their comments by close of business on Friday 24 June 2005 to Jamil.Ahmed@ngtuk.com or in writing to:

Jamil Ahmed
Transmission Charging Development Team
National Grid Transco
NGT House
Warwick Technology House
Gallows Hill
Warwick CV34 6DA

*Please note that responses will **not** be treated as confidential unless so marked.*