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Dear Tracey

Transmission investment and renewable generation

Please find attached our response to the above consultation. If you would like to discuss any part of our response with us please ring either Lewis Dale (Tel 01926 655837) or myself.

Yours sincerely

Tim Tutton

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Transmission investment and renewable generation

National Grid Transco's response to Ofgem's October 2003 consultation

Introduction

1. We very much welcome this consultation on the regulatory arrangements relevant to the transmission investments needed to accommodate renewable generators. Not only does the Energy White Paper state the Government's commitment to developing renewable energy sources, but it also highlights the need for the transmission companies to progress reinforcements in a manner that enables the deployment of renewables. This consultation addresses the framework in which such reinforcements may be progressed.

2. Our response seeks to address the points raised in the consultation paper in the order summarised in paragraph 4.12. In particular, our response details the specific issues associated with initiating investment to accommodate renewables, whether they are wind generators onshore in Scotland or offshore in the strategic areas identified by the DTI. Given these issues, and in order to establish the network reinforcements in sufficient time to accommodate the volume of renewables necessary to meet the Government's 2010 target, we believe that there must be a specific framework in which an efficient level of such reinforcements can be agreed prior to their initiation. Our suggestion for such a framework is set out below.

Principles and objectives (in considering how to address investment cost recovery)

Nature of investment decisions

3. In considering the nature of these potential investments we note:

    a. Whereas we have a duty to invest in our network so that it is economic and efficient and meets security standards, we have not agreed connection, interconnector, or use of system terms with renewable generators or other party that would justify the investments identified in the Transmission Issues Working Group (TIWG) Report (or the updated first step investments identified in Ofgem's consultation paper).

    b. The connection arrangements and location of renewable generators, and the effect of other regulatory developments, suggests to us that we are unlikely to enter into a connection, interconnector or use of system agreements that would justify the investments, and in the event that we did enter such agreements it would not provide sufficient time to undertake the necessary reinforcements. For example:

        i. Many renewable developments will connect to distribution systems and be of a size that permits exemption from requiring generation licences. Therefore, under current arrangements, and under the arrangements expected following implementation of BETTA, they will not need to enter agreements with us.

ii. In Scotland under the existing arrangements, the Scottish generators, or the transmission licensees on their behalf, might seek additional interconnector capacity. However, with the imminent introduction of BETTA and proposed treatment of the interconnector in the same way as all other network infrastructure, there is no advantage to parties from entering new interconnector agreements with us. However, until the BETTA legislation is enacted, it is not possible for any user to apply under the post-BETTA arrangements and so there is no way for users or potential users to take matters forward.

iii. For the large 2nd round of offshore wind developments, the DTI has indicated that it will be licensing selected offshore network providers and regulating them as transmission owners under BETTA. DTI and Ofgem are currently considering their approaches to licensing and regulating these offshore operators and, in advance of the outcome of these considerations, it is not possible for potential franchisees to conclude a connection or use of system agreements with us.

c. In the absence of specific agreements, justification of reinforcements will need to be based on observations of actual changes in the patterns of use of the transmission system (as the renewable projects are established) or forecasts of such changes. Waiting for actual changes in use of the transmission system would permit us to demonstrate that investments are justified but may not be the most efficient approach for the following reasons:

i. The time lag in establishing network capacity may create a significant period in which there is either congestion or restricted access for renewable or other generators. This may produce significant constraint costs or unacceptable risks to new renewable projects.

ii. Moreover, the transmission outages required in order to establish required network reinforcements, if taken when significant new generation has already commenced operation, may cause additional congestion or loss of access which would have been reduced if it had been undertaken generally in parallel with generation construction. Such a situation could also give rise to a breach of licence by the transmission licensees

d. Committing network reinforcement investments on the basis of forecasts raises the issue of forecast accuracy and the risks arising should such forecasts be inaccurate. Investments which turn out not to be required because, for example, renewable generators locate in other areas, are at severe risk of not being deemed to have been efficiently incurred and so would not qualify for recovery of the financing costs in future price controls.

e. As noted by Ofgem in the consultation paper, the last price controls did not include revenue to finance the investments identified in the TIWG report. Moreover, our TO price control may be extended by a further year in order to address other regulatory requirements.

4. These issues show how the decision to initiate network investments that will accommodate renewables is rather different from the investment decisions we have made to accommodate the many gas-fired power stations connected since restructuring of the industry in 1990 and, indeed, the increases in interconnector capacity. For power stations we have been able to show that the reinforcements are efficient by demonstrating that the customer is willing to make a suitable financial commitment to the reinforcement. For example, the developer of a new large power station will enter an agreement with us to pay cost-reflective use of system charges from when the station enters operation and to provide financial

guarantees to cover the network investment in the period prior to power station commissioning and the network charges becoming payable. While for interconnectors, similar arrangements have been put in place with those companies applying for the increase in capability. This is difficult to achieve in the case of renewable generators for the following reasons:-

a. In terms of financial guarantees: The transmission reinforcements would accommodate a number of individually small renewable developments. As a result, the reinforcements tend to be larger compared to the size of individual renewable projects than has been the case with the development of gas-fired generation. It is not equitable to require the first renewable projects to provide financial guarantees for the capacity that will also benefit later projects. Indeed such an approach would be likely to impose a barrier to early projects. A similar barrier would arise if early projects were delayed until a sufficient number of developers are able to provide a firm commitment to the full network reinforcement.

b. In terms of future payment of cost-reflective charges: Many of the individually small renewable developments will find it most economic to connect to the distribution networks and, by virtue of being exempt from the requirement to hold a generation licence, will not enter use of system agreements with the transmission licensees and so avoid network entry charges. As a consequence, it may not be possible to demonstrate that the generators requiring the reinforcements have committed to pay for them. The proposals to move away from cost-reflective charging of renewables in remote areas (as discussed in "Transmission charging and the GB wholesale market" consultation) could mean this linkage is weakened even for larger renewable developments.

c. In terms of process: For the time being, with the ongoing implementation of BETTA, there is no effective process that can be followed by generators or potential generators for them to demonstrate their commitment to transmission projects to reinforce the transmission system between Scotland and England.

5. It could be argued that the investments to accommodate renewable generators are analogous with those we undertake to accommodate general changes in demand on distribution systems. However, unlike general demand growth, renewable generation is much more difficult to forecast because there is considerable uncertainty concerning the eventual amounts of renewables that will be developed in different areas of the country. A significant element of this uncertainty is associated with the timing and manner of implementation of Government and Ofgem policy.

Potential Approaches

6. The observations on the nature of the investment decision facing us suggest that three sets of principles and objectives, could be applied concerning recovery of infrastructure investment costs:-

1) Customer sponsored investment

7. In the manner of investments to accommodate large generators - reinforcements are demonstrated to be efficient **prior to** changed patterns of network use as a result of customers entering sufficient financial commitments to pay, at least in part, the investment costs.

8. In so far as such commitments are in place at the time of a price review, the appropriate revenue to finance the investments can be allowed. For

commitments that may arise between price reviews, either a non-specific allowance or an error correction mechanism may be used.

9. The objectives on us would be unchanged. We would seek economic reinforcements (informed by our exposure to any resulting congestion), charge efficiently through approved network charging methodologies, and facilitate competition in generation by making timely offers of terms and agreeing firm completion dates (consents permitting) that meet the programme requirements of the customer.

10. However, to use this approach for the majority of investments would require either an obligation on the majority of new entrants to enter such agreements with us or revised obligations on existing market participants to reflect the effect of new entrants by applying for additional network capacity. This would represent a significant change in the rights and obligations expected by many embedded renewable generators or a large-scale redefinition of rights of existing market participants (to reflect the net position of production and supply in an area). Such changes are likely to introduce new uncertainties and risks on renewable developments, further jeopardising the 2010 target.

2) Responsive investment

11. In this approach investments are deemed to be efficient only **after** changes in the pattern of network use are observed (either by reference to security criteria or changes in the level of congestion).

12. In order to avoid a potentially long delay before cost recovery is approved at a subsequent price review, the regulatory scrutiny and approval for these capital investments may need to be on a more frequent basis than the current 5 year price review cycle.

13. Given the current access rights of existing participants and new embedded generators, there is a risk that a responsive approach will give rise to larger short-term congestion costs, particularly when network construction outages are taken. In so far as congestion issues restrict the entry of renewables, this option may also impose risks to achieving the 2010 targets.

14. Furthermore, as embedded generators will allow suppliers to reduce their exposure to both investment and congestion costs, there is a potential for distortion of the economic signals relevant to location and connection voltage.

3) A co-ordinated investment approach

15. In this approach, we would undertake reinforcements potentially in advance of establishment of new renewable developments and in the absence of financial commitments from developers but subject to an approval from Ofgem that such reinforcements are efficient and should be entitled to future cost recovery.

16. As developers arrange connections to other networks, information on potential developments can be made available to regulatory authorities. While some uncertainty is likely to remain over whether specific projects may proceed and successfully commission, it may be possible to consider whether a sufficient volume of development is sufficiently likely (given current and future policy developments) for a reinforcement to be considered efficient.

17. On such a basis, we believe it would be possible to initiate key reinforcements such that the potential for delays and other risks associated with the first and second approaches above could be avoided. While it moves away from justifying network reinforcements on the basis of developer commitments, it would appear to be the most practical option.

Transmission Licensees' Investment Cost Forecasts

18. In the absence of better information on the size and timing of renewable developments in Scotland we have no further information on the likely magnitude of costs to add to that already included in the consultation document. However, to illustrate the potential impact of the investments identified in the consultation on customers, we have calculated the potential changes to our tariffs that would result – see Annex 1.

Ofgem Suggested Potential Approaches

19. Taking the three broad categories of approaches identified by Ofgem in turn. Our views are as follows:

Rely on existing mechanisms i.e. do nothing until the next price control

20. We believe that this approach will mean that, in the likely absence of customer applications for new network capacity, we will only be able to demonstrate that network developments are efficient once renewable projects have changed the pattern of use on our network. We believe this is unlikely to be the most efficient approach to developing the network due to the short-term congestion issues and distortions arising from the differing treatment of generators seeking to connect to our network and other networks.

21. In so far as it may give rise to risks and uncertainties for new renewable projects, this approach is unlikely to facilitate the development of renewables in a fashion that would be conducive to meeting the Government's 2010 targets.

Re-open the price controls

22. In this option Ofgem suggest that Transmission Owner projections of efficient investments would be reassessed so that allowed revenues could be adjusted. Such reassessment could be of two forms:

    i. A full reassessment of all the investments that would be efficient in the period up to the next price control (i.e. those investments that would be required irrespective of new renewable developments as well as those needed to accommodate renewables). Or:

    ii. An interim determination that would be focused purely on providing additional revenue to finance an efficient level of renewables related investments not identified when the current price control was agreed. Such a determination could be linked with a "mini" capex review which may required in the event that NGC's next main TO price review is delayed.

23. If the option to re-open the price control were of the first form then we would agree with Ofgem's initial view that this option would be disproportionate and unhelpful.

24. The alternative form of reassessment (a focused interim determination), however, would be consistent with the co-ordinated approach to network investment identified above and provide a basis for a timely initiation of investment and funding of the resulting financing costs. In so far as such an approach may also be considered an "additional mechanism" it is also discussed further below.

Add an additional mechanism

25. Ofgem suggest that additional mechanisms may lie along a spectrum between 'quick fix' and 'more sophisticated' solutions. For the latter, Ofgem identify enhancements to transmission access markets and development of enhanced incentives for us to respond to customer requirements signalled in such markets (although they note that the developments required to implement this could not be achieved for the next charging year). This would be a particular manifestation of the "customer sponsored investment" approach we identify above. Our assessment suggests that the effectiveness of such an approach depends crucially on the redefinition of the access rights of either embedded generators or other generators (so that they reflect the effect of embedded developments).

26. The acceptability of such changes to access rights for market participants is for others to determine. However, we note that a move to a market system for determining access rights will necessarily require the introduction of locational access imbalance cash-outs in order to provide incentives on participants to acquire and hold an appropriate volume of access rights. Exposure to such cash-outs will be particularly important to intermittent producers (or their market counter-parties) as, unlike in the main energy market, national aggregation will not be available to mitigate the resulting trading risks.

27. Ofgem characterise the other end of the spectrum of mechanisms as 'quick fix' such that, while not providing such efficient incentives, they would provide an opportunity for progressing investments in advance of agreements to revised access arrangements.

28. For the reasons described above, we believe the most practical approach is for Ofgem to provide an interim determination of the investments that would be efficient to accommodate renewables prior to the next full price review. This would provide both a simple revenue addition to existing price control and also some assurance that we would be able to recover the financing costs of such investments in future price controls.

Conclusions

29. On the basis of our assessment of the issues associated with network investments to accommodate renewable generators that were not identified at the time we agreed our last price control, we suggest that the most practical way forward would be for Ofgem to provide an interim determination of the efficient investments required.

30. Moreover, in order to determine which investments are efficient, we recommend a co-ordinated approach between Ofgem, Government (who set policy and support mechanisms for renewables) and the industry (which can provide information on project status and plans).

National Grid Transco 17/11/03.

Annex 1: Potential effect of identified investments on transmission tariffs

1. This annex illustrates the implications to our tariffs that would arise if the investments identified in the consultation document were undertaken.

2. For modelling purposes, we have assumed a 'pre-BETTA' scenario in which existing England & Wales network charges are updated. All tariff changes are expressed in 2003 prices. The actual increases to the tariffs will vary in accordance with the investment costs deemed to be efficiently incurred.

3. The cost of reinforcements to the England & Wales transmission system to accommodate 2000MW of renewable generation in Scotland (circa £150m) would be recovered through increases to the Security & Residual element of the TNUoS tariff as set out in the following table.

YEAR	Generation Tariff p/kW	Demand Tariff p/kW
2004/05	+0.37	+1.23
2005/06	+1.96	+6.43
2006/07	+3.80	+12.46

4. The cost of upgrading the Interconnector assets to Scotland (circa £100m), prior to BETTA, would be recovered through the Use of Interconnector charge levied on the Scottish transmission companies.

5. There may be applications for the connection of off-shore windfarms in England and Wales within the same time period but we are unable to quantify these until the offshore connection framework is established and specific applications are progressed.