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Dear James,

Real Options and Investment Decision Making

Thank you for the opportunity to comment on these proposals.

Broadly NGN considers this is an appropriate technique for investment decision making and we see the application in relation to interruption contracts in gas distribution as valid. We agree that the current methodology used to determine the level up to which bids should be accepted does not sufficiently take account of uncertainties. It is important that any price control allowances for this activity are consistent with the basis on which such decisions are made.

Our responses to the detailed questions are contained in the attached appendix. Please do not hesitate to contact me if you wish to discuss any aspect of our response.

Yours sincerely



Stephen Parker
Regulation Director

APPENDIX

Do you agree or disagree that a real option approach is useful in the context of policy and investment appraisal in the energy sector? Please provide reasons.

Yes we do think real option analysis is useful on the context of the energy sector. Investment appraisal techniques are subject to assumptions about the future. The criteria for real options analysis as set out in the consultation are likely to apply to gas distribution investment decisions, particularly the irreversible nature and uncertainty that comes from future demand.

Use of scenario analysis is often carried out as part of investment decision making to ensure that investment decisions take account of some likely scenarios. For the interruption auction process, after taking account of the actual ability to relieve the capacity constraint, the NGN model includes probability weighting for exercise to provide additional flexibility to consider scenarios when making a comparison between the annualised reinforcement cost and the bid received against a particular constraint. The use of real options analysis to specifically value the deferral of investment decisions could be useful where uncertainty levels are high about future requirements.

The future uncertainty of the energy mix and subsequent impacts on gas networks has been considered widely within the industry. Both the Redpoint Gas Futures Scenario Project and analysis by DECC have shown a large number of options and pathways that the future could hold and both studies are predicated on achievement of the 2050 targets. While this analysis has used a wide range of data sources, actual outcomes based on each scenario could differ.

Do you have any views on the practical applications of real options analysis set put in this paper in relation to: (i) scale and timing of network investment, and (ii) calculating interruptible contracts (see also supporting appendix)?

Real options analysis could be used for both examples provided the underlying assumptions relating to future uncertainty are considered suitable. For network investment purposes it may be possible to defer a reinforcement project with alternative short term options until such time as future demand is clearer. This may be particularly useful if there is a known event in the future but the impact of this has considerable uncertainty. The use of real options analysis could be used to assess the maximum costs that the short term measures should incur. In the case of gas distribution with falling forecast demand the application to expanded network capacity will be limited.

For interruption purposes, the existing auctions are used as an alternative to reinforcement for existing network capacity constraints and real option analysis could be a useful tool in this area. This would in effect increase the amount a network operator would be prepared to pay to acquire interruptible capacity rights under the auction process. This would need to be supported by how Ofgem determines the relevant price control allowances so that the investment decision is not distorted by the treatment of such costs under the price control.

In what other policy areas, if any, do you consider the real options approach could help improve decision making?

Given the relatively small level of capital investment in gas distribution networks with virtually no investment triggered by load growth we do not see widespread application of the policy in gas distribution. However, we can see the potential for much wider application in the electricity sector given the considerable uncertainties over future load growth.

Should these methods be considered robust as part of the suite of investment appraisal techniques to be employed by networks it would be useful to hold a workshop to explore the

practical aspects of real options analysis and its suitability for specific types of investment decision making.

Do you have any views on our approach to estimating the option value associated with interruptible contracts?

The base assumptions for this analysis is based on the outputs of the Redpoint analysis carried out for the ENA. For this to be used in real scenarios it would be appropriate to consider this in more detail to provide assurance that the assumptions remain valid and are appropriate for the specific purpose. The principle of the steps that are employed seem reasonable. This type of analysis could be of use where the outcome of an interruption auction has not provided a clear accept/reject decision for a specific constraint. The use of real options analysis could be helpful when considering a range of likely future scenarios that will influence the final decision.

Do you have any views on how we should apply in practice a real options approach and our estimated values to interruption contract auctions?

No further specific comments at this stage.