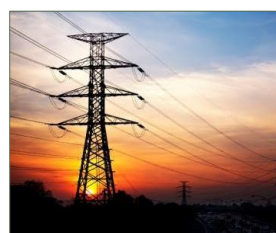


Gas Network Extensions in Northern Ireland: Approach to Comparing High Pressure Licence Applications

**Conclusions paper
29 April 2014**



About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland’s electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Our Mission

Value and sustainability in energy and water.

Our Vision

We will make a difference for consumers by listening, innovating and leading.

Our Values

Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted.

Be a united team.

Be collaborative and co-operative.

Be professional.

Listen and explain.

Make a difference.

Act with integrity.

Abstract

This paper summarises the comments received to the consultation paper 'Gas Network Extensions in Northern Ireland – Approach to Comparing High Pressure Licence Applications' published on 6 February 2014. It also presents the Utility Regulators' considered response to the comments made by interested parties during the consultation exercise. The licence application process for the high pressure conveyance licences in the Gas to the West extension area closes on 6 May 2014.

Audience

Potential investors in Northern Ireland gas network assets, regulated companies in the energy industry, government and other statutory bodies and consumer groups with an interest in the energy industry.

Consumer impact

Research conducted on behalf of the Department of Enterprise Trade & Investment (DETI) indicates that potentially 40,000 domestic and commercial customers will connect to the new gas network in Tyrone and Fermanagh. These customers will benefit from lower energy costs and society as a whole will benefit from lower carbon and other emissions.

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Question 1	Do respondents have views on the proposed approach or views on an alternative approach?
Question 2	Do respondents have views on the methodology of calculating the 'risk adjustment factor' from variations in equity returns?
Question 3	Do respondents have any comments on the calculation of the various parameters to which the methodology has been applied?
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Question 5	Do respondents consider that the proposed range of possible values for the 'risk adjustment factor' is reasonable?
Question 6	Do respondents consider that the final 'risk adjustment figure should fall anywhere other than the medium point on the proposed range?

1. INTRODUCTION

Purpose of the paper

- 1.1. This paper summarises the responses received to the consultation paper 'Gas Network Extensions in Northern Ireland – Approach to Comparing High Pressure Licence Applications', published on 6 February 2014.¹ Two responses were received, both from existing conveyance licence holders. The non-confidential responses are published in full on the Utility Regulator website. The summary of responses to each question can be found in chapter 2 under the heading of the relevant question.
- 1.2. We have taken the responses into consideration when determining the magnitude of the risk adjustment factor that will be applied to applications for the high pressure licence. Applicants for the high pressure licence are permitted to make an application on either a 'revenue cap' or a 'cost pass through' treatment of operating expenditure. The risk adjustment factor allows applications based on either model to be treated on a fair and equal basis. Our conclusions in relation to each question are summarised in chapter 2 under the heading of the relevant question.

Background

- 1.3. On the 6 February 2014 the Utility Regulator launched a competitive licence application process to award both the high and low pressure conveyance licences necessary to extend the existing natural gas network into the Gas to the West Area. On the same day we also published a consultation paper 'Approach to Comparing High Pressure Licence Applications' which sought respondents views on our proposed methodology for calculating the 'risk adjustment factor' and the value of the various parameters that would be input into the calculation.
- 1.4. Applying the proposed methodology, a range of plausible values for the 'risk adjustment factor' was set out for respondents to comment on. It was our view that the final value for the 'risk adjustment factor' when calculated would fall within this range and our initial view was that it should be at the medium value. The range of values consulted on is set out in table one overleaf.

¹[http://www.uregni.gov.uk/uploads/publications/Gas to the West Approach to comparing high pressure licence applications consultation.pdf](http://www.uregni.gov.uk/uploads/publications/Gas%20to%20the%20West%20Approach%20to%20comparing%20high%20pressure%20licence%20applications%20consultation.pdf)

Table 1 Proposed 'risk factor adjustments'

	Low	Medium	High
WACC Adjustment	0.09%	0.22%	0.53%

1.5. Once the value of the 'risk adjustment factor' has been calculated it will be added to the Weighted Average Cost of Capital revealed by those applicants seeking a high pressure conveyance licence on the basis of a cost pass through treatment of operating expenditure. This will allow the Net Present Value of payments by consumers for these applicants to be calculated in a way that is directly comparable with those applicants seeking a licence on the basis of a revenue cap treatment of operating costs.

2. RESPONSES RECEIVED AND UTILITY REGULATOR CONCLUSIONS

Question 1

Do respondents have views on the proposed approach or views on an alternative approach?

Summary of Responses

- 2.1. Mutual Energy stated that in principle the Utility Regulator was correct to adjust for the different level of risk equity holders were exposed to between a 'revenue cap' and a 'cost pass through' treatment of operating expenditure. They also stated that the application of the Capital Asset Pricing Model was sound as it had regulatory precedent and was consistent with the calculation of WACC.
- 2.2. BGE (NI) stated their belief that in the long term a 'revenue cap' model was more likely to deliver value for consumers as it shared risk between the licence holder and consumer. They pointed to the widespread use of RPI-X regulation across Europe and the endorsement of this approach by Ofgem. BGE (NI) stated that those applying for a licence under a cost pass through model would be exposed to less risk and could therefore bid a lower cost of capital. They did, however, believe that one issue with the proposed methodology was that it did not consider capital expenditure risk.

Utility Regulator Response

- 2.3. We welcome the recognition by both respondents that applicants seeking a licence on the basis of the two available models face different levels of risk that would result in a systematically lower cost of capital for the cost pass through model. We also welcome the explicit endorsement of the use of the Capital Asset Pricing Model by Mutual Energy. In our consultation we recognised that while economic regulators set the WACC with reference to the level of risk to which the licence holder is exposed they have not tended to estimate the effect on WACC of specific sources of risk. Given the responses received we have concluded that we can properly proceed on the basis that there is no reason in principle why the impact of Opex risk on WACC cannot be calculated accurately using the Capital Asset Pricing Model.
- 2.4. On the issue of a preference for 'revenue cap' regulatory model raised by BGE (NI) we have previously made it clear in section two of our consultation paper, that we have no preference for either of the two models which are currently in operation in Northern Ireland. On the specific issue raised by BGE (NI) with regard to the

perceived exclusion of Capex risk, we would point out that as all applicants, whether revenue cap or cost pass through are exposed to identical Capex risk the only specific risk that requires to be included in the calculation of the risk adjustment factor is Opex risk.

Question 2

Do respondents have views on the methodology of calculating the ‘risk adjustment factor’ from variations in equity returns?

Summary of Responses

- 2.5. Mutual Energy stated that the calculation of the risk adjustment factor from variations in equity returns was sound. However they questioned the assumption in the consultation paper that a 5%, 10% and 20% variation in operating expenditure from the expected value fell within the same 90% confidence interval. While the same confidence interval might apply to similar levels of variation it was not credible that the same confidence interval should apply to such different estimates of variation.
- 2.6. BGE (NI) do not appear to have addressed this question directly however a number of issues were raised which reference the methodology employed. BGE (NI) claim that the design of the licence application is such that different applicants will allocate differing levels of risk between themselves and their construction contractors and that those that transfer most risk to the contractor will have a lower cost of capital. It was claimed that those seeking a pass through licence would have a particular incentive to transfer Capex related risks onto their contractors as in the absence of such behaviour they would have to increase cash reserves or raise expensive junior debt.

Utility Regulator Response

- 2.7. We welcome the clear acknowledgement from one respondent that the use of variations in equity returns to calculate the risk adjustment factor is a sound methodology.
- 2.8. On the appropriate confidence interval for each level of variation in operating expenditure from the expected value, it would appear that the respondent has assumed that these estimates of variation are taken from a single normal distribution of possible outcomes. If this were the case then the respondent would have been correct in stating that the higher the level of variation the greater the level of confidence that it encompassed possible outcomes. However the analysis is based not on a single normal distribution but rather three separate distributions of possible outcomes, one where the 90% confidence interval is at a level of 5% variation, one where this confidence interval is at 10% variation and the third where it is at 20% variation. This approach allows consideration of three different levels of variability in

operating expenditure, low, medium and high. The approach suggested by the respondent suggests a single level of variation with only the confidence interval being adjusted. The former provides a much more robust analytical methodology than does the later.

- 2.9. On the issue of Capex risk and how it might be allocated between the licence holder and construction contractors, this is not relevant to the matter at hand as all applicants will be granted the same set of capital expenditure licence conditions. BGE (NI) however claim that an applicant seeking a cost pass through licence will have an even greater incentive to transfer risk to contractors allowing it to have an even lower cost of capital. Having considered this argument, we do not accept that there will be any difference in behaviour between applicants depending on their choice of opex treatment. The reasons given by BGE (NI) would appear to relate to ownership model rather than to the form of regulation. There is no link in the application process between ownership model and form of regulation, with both the revenue cap and cost pass through models being available to all applicants.
- 2.10. Although we do not accept that there is a systematic relationship between the choice of 'revenue cap' or 'cost pass through' model for the treatment of operating expenditure and the proposed allocation of construction risk between the licence holder and the construction contractor, when designing the licence application process we recognised the issue of applicants artificially reducing those capital expenditure cost lines on which they have been asked to compete by transferring risk to the construction contractor. In order to mitigate this risk we addressed it specifically in the notes to the high pressure workbook when discussing 'Contingency Costs'. Applicants must base their revealed costs on a particular form of construction contract and must explain how their proposed allocation of risk between themselves and the construction contractor reduces overall costs. We were also clear that in setting capital expenditure allowances for the licence holder we would take into account this contract type which all applications are based on. Taken together we believe these measures will ensure that applicants have the correct incentives to behave appropriately.

Question 3

Do respondents have any comments on the calculation of the various parameters to which the methodology has been applied?

Summary of Responses

- 2.11. Respondents to this question split their comments into those relating to the actual level of future operating expenditure and those relating to the variability in actual

expenditure against forecast operating expenditure. In support of their response Mutual Energy included a report from an economic consultancy which had been engaged to consider both of these issues.

Forecast Controllable Operating Expenditure

2.12. Mutual Energy calculates that the future level of operating expenditure is between £1.0m and £1.4m with an average figure of £1.2m. To arrive at these values, two approaches which replicated those in the consultation paper were employed.

- A top down approach where the average operating expenditure per million pounds of opening asset value for existing onshore high pressure pipeline assets was applied to the opening asset value of the new pipeline asset resulting in a figure of £1.14m.
- A bottom up approach where cost estimates were made for each of the various cost elements within operating expenditure on the new pipeline asset resulting in a figure of £1.286m.
- Taking the average of the two approaches a figure of £1.2m was arrived at.

2.13. BGE (NI) assert that the future level of operating expenditure is £1.519m. To arrive at this figure BGE (NI) sought to demonstrate why the new pipeline would have higher costs than a linear relationship with respect to other onshore Northern Ireland pipelines would imply. Reasons cited included;

- Poorer terrain which would increase agricultural remediation costs.
- Low pipeline pressure which would not facilitate normal pigging and would increase the cost of cathodic protection.
- Geographical remoteness of pipeline which would increase maintenance costs and in particular aerial photography.

2.14. While BGE (NI) claimed that these costs were significant they also stated that they were difficult to quantify without a detailed study.

Controllable Operating Expenditure Volatility

2.15. Mutual Energy stated that our central estimate of variability in operating expenditure (+/- 10%) was too high and that a more realistic estimate would be +/- 6%. In support of this claim a considerable amount of actual market data from the previous ten years is presented. Including for gas transmission companies and water utilities in both Northern Ireland and Great Britain. In addition evidence from Heathrow and Gatwick airports as well as Network Rail was presented in support of this case.

2.16. BGE (NI) stated that our central estimate of variability in operating expenditure (+/- 10%) was too low and that a more realistic estimate would be +/-20%. In support of

this view evidence from actual expenditure data from the BGE (NI) network over the past eight years was presented. During this period there were three occasions on which actual expenditure in a given year deviated from allowed by more than 10%.

2.17. BGE (NI) also claimed that the failure of the Utility Regulator to provide sufficient replacement expenditure in the most recent price control review indicated that there would be increased volatility in operating expenditure going forward. In the 2012-17 price control review BGE (NI) sought an allowance of £7.4m for such expenditure but were only granted £0.5m.

2.18. BGE (NI) also asserted that the nature of the new high pressure pipeline made cost forecasts more unpredictable, for example, the weather. However, it provided no evidence or further explanation in support of this view.

Utility Regulator Conclusion

Forecast Controllable Operating Expenditure

BGE (NI)

2.19. While BGE (NI) have stated that the new network would have higher operating costs than a linear relationship with respect to other onshore Northern Ireland pipelines would imply this proposition was not supported by any evidence and indeed their proposed operating expenditure figure at £1.519m was only £0.014m greater than our central forecast. We have considered each of the points raised by BGE (NI) but have not been persuaded that they give us any reason to depart from the view set out in our consultation paper.

2.20. On the effect of terrain on remediation costs no evidence was provided beyond the assertion that these costs would increase by 15%. We did not find this assertion self-evident; indeed, to the contrary, it could as easily be asserted that poor quality land would in fact mean that the cost of crop damage was in fact reduced.

2.21. In relation to cathodic protection we note that the allowance for this activity on the existing BGE (NI) network is only £0.012k per annum for the 2012-17 price control period. And while the allowance for pigging the North West Pipeline is £0.411m this is an activity which is conducted every decade so the annual cost is some £0.041m. Any increase in the cost of ensuring pipeline integrity is therefore likely to be marginal and in the absence of any evidence based figure for this increase having been provided we do not consider that there is a sufficient basis for us to revisit our proposed figure for forecast operating expenditure on the basis of this argument.

2.22. On the effect of geography on maintenance costs, there was a simple assertion that these costs would increase, with no evidence provided in support. Again, having considered the argument, we do not find it to be self-evident, and the assertion by itself provides no sufficient basis for us to change the position that was outlined in our consultation paper.

2.23. Overall it appears that BGE (NI) have focused on a number of very specific cost lines in relation to which they suggest that there is an argument for costs to be increased. We note that, in principle it must always be possible to argue that any individual cost line could be increased or decreased, although we have not in fact found BGE (NI)'s arguments to be persuasive in relation to the items which they identified. Therefore, our approach has been based on a high level analysis, relying on what we believe to be the valid proposition that the major cost items taken as a whole have a linear relationship to distance. This is clearly not to say that any individual cost item will have a precisely linear relationship to distance, but rather that it is appropriate to consider the totality of those items, taken in the round, as having such a relationship. We do not consider that anything in the BGE (NI) response undermines this fundamental methodology.

Mutual Energy

2.24. Mutual Energy has employed the same two methodologies as were in the consultation paper to calculate future operating expenditure. We welcome this endorsement of our approach.

2.25. In applying the top down methodology Mutual Energy has included the Belfast Gas Transmission pipeline as a suitable on shore comparator. As was pointed out in the consultation we specifically identified this pipeline as not being a suitable comparator when applying this methodology due to its very high opening asset value per kilometre of pipeline. Nothing in the Mutual Energy response gives us any reason to change our position in relation to this; we consider Mutual Energy's reliance on this comparator to be inappropriate.

2.26. In applying the bottom up methodology Mutual Energy has to a large extent repeated our calculations, except for the cost of 'System Operation' and 'Other Costs'. While we had suggested a value equal to 25% of the BGE (NI) allowance they have suggested a figure equal to 5% of the BGE (NI) allowance. Mutual Energy have based their estimate on the marginal increase in these costs, stated by Mutual as being in the order of 10%, that resulted when Premier Transmission acquired the Belfast Gas Transmission pipeline. This results in a proposed total for these costs of £60k. We view this as a very low estimate.

2.27. We accept that the marginal cost increase in System Operator and Other costs is likely to be less than 25% and our own analysis of historic BGE (NI) and Mutual Energy cost data suggests that an overall marginal cost increase of between 10% and 15% is to be expected. However applying such a figure would assume that these costs would be allocated to the licence holder on a marginal cost basis and we do not think this would be appropriate.

2.28. As we discussed in paragraph 4.21 of the consultation paper it is the intention to create a single system operator for Northern Ireland funded by each high pressure licence holder. While the extra costs of System Operator and Other activities associated with the new Gas to the West pipeline will be marginal, the Gas to the West licence holder will be required to recover a proportion of the System Operator costs and not just the marginal cost associated with the Gas to the West high pressure pipeline.

2.29. For all these reasons, having considered the arguments carefully, we conclude that that the Mutual Energy estimate of 'System Operation' and 'Other Costs' does not provide any sound basis for moving away from the figures set out in the consultation paper.

Conclusion

2.30. Having considered the evidence presented by the two respondents we have not found any adequate reason to change our proposal as set out in the consultation paper. BGE (NI) did not provide any evidence in support of their assertion that operating costs would be higher than we predicted. While Mutual Energy provided more analysis this was based on flawed methodologies or on an analysis that was not appropriate for the assessment of system operator costs to be borne by the licence holder. For these reasons we have determined that the correct level of controllable operating expenditure for the calculation of the 'risk adjustment factor' is £1.505m.

Controllable Operating Expenditure Volatility

Mutual Energy

2.31. Much of this evidence supplied by Mutual Energy was considered by ourselves either directly or indirectly through the work of Ofgem and ECA /Imrecon which we cited in our consultation paper. Therefore the overall body of evidence has not been increased to any substantial degree by this response.

2.32. While some of the market evidence could suggest a lower central case for volatility it is important to note that Ofgem did not rely solely on 'historical

performance data' but also considered 'plausible projected values'. While the market data considered in the response is certainly broad in scope both in terms of industry and individual companies it is derived from a relatively short time period of no more than the last ten years. If the argument is that market data alone is sufficient then it would have been assumed that data over a much longer historical period would have been reported.

2.33. The respondent has also not provided any argument as to why past performance alone should be the only means of estimating plausible outcomes. Our objective is to set an upper boundary to the distribution of plausible outcomes such that 90% of outcomes fall within it. This is not the same as estimating average volatility. By definition the boundary is a relatively rare occurrence and in establishing it care must be taken not to give undue weight to the many occurrences which surround the mean outcome.

2.34. The Ofgem assessment of this upper boundary relates to the eight year price control period for RIIO-T1. Our analysis assumes a five year price control period which could, all other things being equal, suggest an upper boundary greater than +/- 10%. This is because the shorter the time period the greater the variation between forecast and actual expenditure. However it is worth noting that the historical market information is based on five year data and not eight years. Setting a variation figure greater than 10% would create a very large gap to market data which would be very difficult to justify.

2.35. In addition we take into account that the more restricted nature of the high pressure licensed activity. As we noted in the consultation paper this licence holder will not be subject to many of the European requirements to facilitate energy trading between Member States.

2.36. We also note that as with other similar conveyance licences in Northern Ireland the licence to be granted will contain provision for a reopener should operating expenditure exceed price control allowances. This clearly demonstrates that both licence holders and the Utility Regulator agree that such an outcome is plausible if rare.

BGE (NI)

2.37. BGE (NI) do not appear to have fully understood the application of the methodology set out in the consultation paper. Within year variations are not the metric used but rather the variation over the price control period. All our calculations consistently assume variation over the price control period. BGE (NI) has adjusted one of the numbers in the calculations without adjusting the others which produces flawed results.

2.38. Regarding the most recent price control review this determination followed the normal review process during which BGE (NI) failed to provide convincing evidence to support their request. We have therefore rejected this argument as not being relevant to the subject of the consultation paper.

Conclusion

2.39. Having considered carefully the submissions and evidence presented by the two respondents, we have not been persuaded that there is any valid reason to change our proposal as set out in the consultation paper. Indeed, on consideration of the conflicting arguments made by the two respondents, we are satisfied that the methodology used and initial conclusions reached in that paper remain sound.

2.40. The evidence presented by BGE (NI) was based on a flawed analysis and while Mutual Energy supplied a great deal of market information it failed to recognise that in assessing the likely level of cost volatility, that short term historic information needs to be augmented by plausible predicted values, and consequently provided no basis for taking an alternative view as to what these plausible outcomes might be.

2.41. The figure of +/- 10% as set by Ofgem represents an upper boundary of plausible outcomes within which 90% of outcomes will occur. This was independently reviewed and verified by ECA /Imrecon and is in line with the licence condition which provides for a price control reopener should operating expenditure deviate from allowances by 15% or more.

2.42. For these reasons, on consideration of all the arguments, we have determined that the correct level of volatility for the calculation of the 'risk adjustment factor' is +/- 10%.

Question 4

Do respondents have views on the application of the 'risk adjustment factor'?

Summary of Responses

2.43. Mutual Energy stated that the proposed application of the risk adjustment factor was sensible. BGE (NI) made no specific comments on the application of the 'risk adjustment factor'.

Utility Regulator Conclusion

2.44. We welcome the support that has been expressed for our proposal to add the 'risk adjustment factor' to the pre-tax WACC of those applicants proposing an 'operating

cost pass through' model. We will do this in the data input workbook so that the Net Present Value of future payments by consumers is calculated using the risk adjusted WACC.

Question 5

Do respondents consider that the proposed range of possible values for the 'risk adjustment factor' is reasonable?

Summary of Responses

2.45. Mutual Energy provided a revised range of values based on the work of their economic consultants with this being at the lower end of the range set out in the consultation paper, this gave a central estimate of the value for the risk adjustment factor of 0.11%.

2.46. BGE (NI) calculated a single point value based on their analysis this having a value of 0.45% which is at the upper end of the range of plausible values set out in the consultation paper.

2.47. Table 2 below sets out the range of plausible values generated in the consultation process.

Table 2 Proposed 'risk factor adjustments'

	Low	Medium	High
Utility Regulator	0.09%	0.22%	0.53%
Mutual Energy	0.04%	0.11%	0.14%
BGE (NI)		0.45%	

Utility Regulator Conclusion

2.48. As set out in our conclusions relating to question three, we have considered carefully the arguments and evidence provided to us by the respondents, but have not found in them any sufficient basis for us to change the position outlined in our consultation paper, either on the predicted level of controllable operating expenditure or on the level of volatility of that expenditure. Indeed, on further consideration in the light of the responses, we are satisfied that the methodology used and conclusions reached remain appropriate.

2.49. It follows logically that the ranges proposed by the respondents, which flow from their own analyses, are not ranges that we can accept as providing a plausible set of values for the 'risk adjustment factor'.

Question 6

Do respondents consider that the final 'risk adjustment figure should fall anywhere other than the medium point on the proposed range?

Summary of Responses

2.50. Mutual Energy stated that in their view the true value of the 'risk adjustment factor' was not equal to the central case value in the consultation but was about half this value at between 0.09% and 0.11%. BGE (NI) on the other hand argued that the actual value was twice the central case value at 0.45%

Utility Regulator Conclusion

2.51. Neither respondent has suggested an alternative methodology and one specifically endorsed our approach. In addition, in the light of our own analysis of both responses and the conclusions reached above on the parameters to be input into this methodology we determine that the correct value of the risk adjustment factor (on a pre tax basis) is 0.22% for the reasons given in our consultation paper.