Strata ENERGY CONSULTING

Simon Todd
Principal Adviser
Commerce Commission
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For the Attention of: Simon Todd

16 November 2016

Dear Simon

Report on First Gas transmission BAU variance checks and AMP evidence assessment

1. I am pleased to provide this report setting out Strata Energy Consulting Limited's (Strata) BAU variation check and AMP evidence assessment of First Gas Investments Limited's (First Gas) 2016 gas transmission Asset Management Plan (AMP) expenditure forecast.

Background and approach

2. Strata Energy Consulting has been retained by the Commerce Commission to assist in developing the Commerce Commission's framework and approach for re-setting regulated gas pipelines businesses' (GPBs) default price and quality paths (DPP) for the period effective 1 October 2017.

3. In accordance with the Commerce Commission's consultation paper - policy for setting price paths and quality standards for gas pipeline services from 1 October 2017[1], Strata has built an assessment framework and completed a business as usual (BAU) assessment and asset management plan (AMP) assessment of First Gas's operating and capital expenditure performance (actual and forecast).

4. Strata has conducted its initial independent assessment against the following expenditure objective:

[1] Commerce Commission (August 2016); *Default price-quality paths for gas pipeline services from 1 October 2017. Policy for setting price paths and quality standards*. http://www.comcom.govt.nz/dmsdocument/14656

capital and operating expenditure should reflect the efficient costs that a prudent non-exempt business would require to meet demand in a regulatory period and over the longer term and comply with applicable regulatory obligations.

5. Through the application of the BAU checks and AMP evidence assessment, we have identified expenditure components that should be subjected to supplier evidence assessment. Our recommendations have been developed through our review in which we:

    1) agreed with the Commission the applicable materiality variance and materiality settings for BAU checks of forecasts compared to base year BAU assessment;
    2) conducted the BAU checks of forecasts compared to the BAU materiality boundaries, taking into account the contextual metrics; and
    3) assessed the First Gas AMP to ascertain whether material variances to BAU are reasonably explained and justified.

6. For expenditure components that have been identified as requiring supplier evidence assessment, we have provided guidance on the additional documented information that we consider would be needed to support the identified expenditure components.

Variance settings for opex and capex

7. Choice of base year for First Gas transmission is challenging due to its acquisition of Vector's gas transmission assets on 20 April 2016. We have used historical opex and capex data from Vector's previous year's information disclosures for the years 2013 to 2015 and combined that data with the Maui Development Limited transmission information disclosure opex and capex data. We have then applied the straight-line average of the 3-year's actual expenditure for opex and capex to establish the base year from which to assess First Gas's forecast expenditure for its gas transmission business for the assessment period 2017 to 2022.

8. For total opex, a boundary margin of +/-5% was used for the five-year period 2017-2022. BAU opex for gas pipeline businesses is expected to be reasonably consistent and the margin setting used was considered to provide for some year-to-year variation in opex. The +/- 5% setting aligns with the step and trend values for First Gas provided to us by the Commission. The 5-year period is chosen to coincide with the next regulatory period, to take effect 1 October 2017.

9. For total capex, a boundary margin of +/-10% was used because capex for gas pipeline businesses is expected to have some year-to-year variation. The 20% range was considered to provide a reasonable allowance for variation outside of which, an AMP explanation would be required.

Summary of the results of applying BAU variation check and AMP evidence assessment

a) Summary on opex

10. In summary, the BAU variance check identified that First Gas's total opex forecast exceeded the BAU variation boundaries. Total opex forecasts are driven by the following opex categories that require AMP evidence assessment:

1) routine and corrective maintenance and inspections opex is forecast to remain above base year opex for the assessment period and to do so by a stepped increase in forecast for 2017. It remains significantly above base year materiality during the period 2018 to 2022;

2) compressor fuel forecasts increase by 84% per annum from 2016 to 2017 and remain above materiality levels for the assessment period; and

3) Land management and other activities opex is forecast to increase 178% from 2016 to 2017 and to remain at similarly higher levels over the assessment period.

11. The BAU materiality check for opex is set out below:

Opex materiality assessment	Forecast ($000)	Amount above base year average 2013-2015 ($000)	% of total opex
Service interruptions, incidents and emergencies	$3,262	$176	0.1%
Routine and corrective maintenance and inspection	$85,138	$16,001	7.5%
asset replacement and renewal	$0	-$3,026	-1.4%
compressor fuel	$24,755	$5,524	2.6%
land management and other activities	$3,751	$2,012	0.9%
Total non Network opex	$96,767	$546	0.3%
Total		**$21,231**	**9.9%**

12. Following application of a materiality assessment against total opex a single item was passed to AMP evidence assessment were:

1) Routine and corrective maintenance and inspection opex; and

13. Land management and other activities was considered comparatively to be below material BAU assessment levels and therefore was not required to be part of AMP evidence assessment.

14. While the compressor fuel forecast is below the materiality boundary we consider that the Commission should note that compressor fuel is forecast to increase 84% between 2016 and 2017. The forecast is attributable to expected operational costs following commissioning of two new 100% duty electrically-driven, gas compressors at the Henderson compressor station. The AMP does not explain the magnitude of the forecast increases for compressor fuel.

15. Through AMP assessment, we have found that the 2016 AMP has satisfactorily explained the routine and corrective maintenance and inspections opex attributed to increase in 2017 and 2018 by $6.1m due to:

1) removal of dangerous asbestos from transmission-related buildings;

2) a full maintenance strategic review; and

3) a full geo-hazard risk assessment.

However, the forecasts for opex from 2019 to 2022 reflect a similar level of magnitude and are not well explained in the AMP.

16. Supplier evidence assessment is required to:

- explain the significant variance above materiality for routine and corrective maintenance and inspections opex particularly the forecasts relating to each of 2019 to 2022 years.

b) Summary on capex

17. At a total capex level, forecasts are above BAU variance boundaries for the first 3 years (2017 to 2019) of the assessment period (2017 to 2022). Total capex is within materiality boundaries in 2020.

18. The BAU check identified that the material contributors to capex being above BAU variance boundaries were:

1) forecast asset replacement and renewal (ARR) capex, forecasts to be above BAU variance boundaries for every year of the assessment period;

2) system growth capex, which is forecast above materiality levels for the assessment period;

3) consumer connection capex which spikes significantly between 2016 and 2017; and

4) non-network capex which is above materiality levels for all years except 2020 and 2022.

19. The BAU materiality check is provided below:

Capex materiality assessment	Forecast ($000)	Amount above base year average 2013-2015 ($000)	% of total Capex
Consumer connection	$6,000	-$394	-0.2%
System growth	$16,898	$6,476	3.9%
Asset replacement and renewal	$121,962	$69,632	42.3%
Asset relocations	$1,780	-$24,313	-14.8%
Total reliability, safety and environment	$0	-$5,946	-3.6%
Expenditure on Non-Network Assets	$18,032	$2,842	1.7%
Total		**$48,298**	**29.3%**

20. Variances in forecast ARR capex were assessed as being material and required BAU variances to be checked through AMP evidence assessment.

21. Consumer connection capex was forecast to be considerably above BAU variance levels in 2017 only. Consumer connection capex is forecast to be only slightly below the materiality boundary for all other years of the assessment period, however, the resultant exceedance of the BAU variance boundary was accumulatively material and results in forecast capex of $9.6m exceeding the BAU variance boundary over the assessment period. AMP evidence assessment was considered necessary for

this capex category also.

22. Asset replacement and renewal capex is a material aspect of the total percentage forecast of capex above the average capex base. Two significant projects are the main contributors to the high levels of capex forecast in this category above the BAU materiality levels. The AMP summarises the projects well and provides explicit linkages between the forecasts and the planned projects and their timing. The most material of these projects is the White cliffs remediation project, which is due to have most expenditure applied in 2022 for completion in 2023. The other project is the Gilbert stream realignment project scheduled for completion in 2018.

23. Supplier evidence assessment is not required. However, due to the materiality of the expenditure, the Commission may wish to consider requesting the relevant business cases for the Gilbert Stream and White Cliffs remediation projects for further assurance.

24. Notwithstanding the above, all questions on capex were satisfactorily addressed in the AMP evidence assessment and no matters require supplier evidence assessment.

Other matters

25. We identified a question concerning the absence of any expenditure in the opex asset Replacement and renewal (ARR) category. There is no explanation for this in the First Gas 2016 AMP. Whilst this is likely to be a categorisation issue, an explanation for not employing this opex category would be useful.

26. We also identified a question concerning the absence of any capex forecast in the capex category of reliability, safety and environment. An explanation for not forecasting in this category could not be found and would be useful in informing the Commission of the relevance of this ID category.

27. Supplier evidence assessment should explain:

    - reasons for not forecasting ARR opex and how costs for replacement and renewal opex are forecast; and

    - The reasons for not using the reliability, safety and environment capex category and how investment for reliability, safety and environment is forecast by First Gas for its transmission business.

Concluding comments

28. Through use of the dashboard, the BAU variation check and AMP evidence assessment First Gas's transmission forecast capex has been confirmed as suitable for BAU assessment.

29. The BAU variance check and AMP evidence assessment however have not satisfactorily identified the reasonableness of the opex forecasts.

30. One opex question is recommended to be addressed through supplier evidence assessment. In addition, two other matters are identified that should be raised with

First Gas as components of supplier evidence assessment. We consider that the questions raised should be easily answered by First Gas providing additional supporting information.

31. Thank you for the opportunity to undertake this assessment of First Gas transmission's forecast expenditure. Please contact me if you require any additional information.

Regards

Bill Heaps
Managing Director
Strata Energy Consulting Limited

Appendix 1: BAU and AMP evidence assessment findings

a) Opex

32. Opex was found to exceed base opex BAU variance levels for every year of the assessment period but opex forecasts particularly spiked in 2017. It is driven particularly by the network opex forecasts categories of routine and corrective maintenance and inspections opex and compressor fuel opex.

33. Opex is forecast to be accumulatively $21m higher over the 2017 to 2022 assessment period compared to the base opex.

34. Routine and corrective maintenance and inspections opex is forecast to step up $6.1m in 2017. Compressor fuel is forecast to increase 84% from 2016 to 2017 and to accumulatively total $5.3m over the BAU variance level during the assessment period.

35. Service interruptions, incidents and emergencies opex and land management and other activities opex were also assessed over the BAU boundary variance levels but it was determined that each category was not a material contributor to the total opex exceedance of the base and AMP evidence assessment was not considered necessary.

36. It was also identified that First Gas chose not to forecast any asset replacement and renewal opex. It was considered useful to assess the AMP to ascertain the reasons for not forecasting this category of opex.

b) Capex

37. At a total capex level, it was assessed on a BAU basis that total capex exceeded the BAU boundary for each year of the assessment period, 2017 to 2022.

38. The drivers of forecast capex were identified to be predominately asset replacement and renewal (ARR) capex; system growth capex; non-network capex and consumer connections capex, which significantly spikes up from 2016 forecasts in 2017.

Summary of AMP evidence assessment findings for opex

39. Our findings from AMP evidence assessment of the two items that were unable to be resolved through BAU variation check are set out below:

40. Routine and corrective maintenance and inspections opex and its stepped change in 2017 were explained in the AMP as being required to:

    1) accelerate the removal of asbestos from transmission-related buildings;

    2) enable a full strategic maintenance review to be carried out during 2017 and 2018;

    3) conduct a thorough geo-hazard risk assessment to ensure a complete picture of the geo-hazard risks potentially facing the gas transmission systems.

41. However, what was unclear is why routine and corrective maintenance forecasts remained at high levels beyond 2018. Each year opex is forecast to exceed the BAU opex boundary by between $2.6m (2021) and $3.5m (2018). No explanation could be identified in the AMP.

42. Compressor fuel increases 84% from 2016 to 2017. It is forecast to be approximately $1m more than the BAU opex boundary and the forecast is above the BAU opex boundary for 2018 to 2022. The increase in compressor fuel is attributed to the investment in two new remote electrically-driven 100% gas compressor units based at the Henderson compressor station.

43. While it is expected that the forecast for compressor fuel would increase over the period given the augmentation to the fleet the AMP did not explain the magnitude of the increase forecast over the period.

Summary of AMP evidence assessment findings for capex

44. Our findings from the AMP evidence assessment of the item identified as not being resolved through BAU variance checking are set out below:

45. The AMP evidence explained the ARR capex forecasts and the priorities for ARR planning. The Asset fleet section of the AMP was thorough and linked planning to capex forecasts. All variances from asset condition assessment were satisfactorily explained. The projects that significantly contribute to ARR forecasts are well described and have forecasts attributed to them.

46. Whilst not part of the AMP evidence assessment we provide the following positive observations on the content of First Gas' 2016 AMP:

    1) System growth capex forecasts are well described and the spike in 2017 and particularly in 2018 are described effectively in section 5 of the AMP. The forecasts are to accommodate a major customer expansion with tight timelines on the north pipeline. Additional variances to system growth forecasts are also well described.

    2) Customer connection capex forecasts spike in 2017. The project is well described in the AMP and the forecast value is explained. Offsetting capital contributions are also set out in the forecast information disclosures (sch 11a).

    3) Non-network capex is well described in the AMP. Projects and investments are well described in the AMP for the period. The spike in 2021 is also sufficiently described.

47. No supplier evidence assessment is considered necessary for any of the AMP categories identified for AMP evidence assessment.

Supplier evidence assessment

48. It is recommended that supplier evidence assessment be undertaken to seek an explanation for the continuation of the high routine and corrective maintenance and inspections opex forecasts beyond 2018.

49. We also consider that First Gas should be invited to provide an explanation for the increased compressor fuel forecast over the assessment period.

Supplier evidence assessment worksheet – First Gas transmission

Opex

Item requiring assessment	Resolution required	Guidance	Background information
Routine and corrective maintenance and inspections opex	Reasonable explanation for the high forecast levels for 2019 onwards	Supplier evidence is required to explain the high levels of opex beyond 2017 and 2018 which are well described in the AMP, to provide confidence that the forecasts will meet the expenditure objective.	The $6.1m stepped change in opex is well described for the 2017 year. Explanations are provided for the main contributors of opex in 2017 and 2018. However, minimal information was provided to explain the forecasts remaining at similar levels to 2018 for the remainder of the period. The forecasting assumptions should be outlined and the key composition of the forecast particularly for the 2019 to 2022 period should be outlined.
Compressor Fuel opex	A reasonable explanation of the assumptions that support the compressor fuel forecast over the assessment period	Supplier evidence is required to explain the compressor fuel forecast and its magnitude following the commissioning of two new compressors. The explanation will provide confidence that the compressor fuel forecasts will meet the expenditure objective.	An explanation is provided for the compressor fuel increase and the assumptions that establish the level of forecast expenditure anticipated for compressor fuel. We found reference to the commissioning of the two new electric compressors at Henderson and identified an 84% spike in compressor fuel following which then was forecast out across the assessment period but it was not clear why the two new units would carry the compressor fuel forecast up by such a significant amount.

Capex

Item requiring assessment	**Resolution required**	**Guidance**	**Background information**
No supplier evidence assessment is required.			