

Commerce Commission  
P O Box 2351  
Wellington 6140

For the Attention of: Dr Simon Todd

31 October 2016

Dear Simon

## Report on First Gas distribution BAU variance checks and AMP evidence assessment

1. I am pleased to provide this report setting out Strata Energy Consulting Limited's (Strata) BAU variance checks, materiality check and AMP evidence assessment of First Gas Investments Limited's (First Gas) 2016 gas distribution 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<sup>1</sup>, Strata has built an assessment framework and completed a business as usual (BAU) variance checks at aggregate and ID category levels and asset management plan (AMP) evidence assessment of Vector's operating (opex) and capital (capex) expenditure performance (actual and forecast).

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<sup>1</sup> 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>

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

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) confirmed and agreed with the Commission the applicable materiality variance and materiality settings for BAU checks of forecasts compared to baseline BAU expenditure;
  - 2) conducted the BAU checks of forecasts compared to the materiality boundaries, taking into account the contextual metrics; and
  - 3) assessed 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. The base year for First Gas distribution has been set at the 3-year straight line average of the 'backcast' historical expenditure data provided by the Commission. This was applied for opex and network capex. The Commission did not provide backcast values for non-network capex. For non-network capex we used 2016 as the base year because this was the only year for which we had post asset separation values.
8. For total opex, a BAU variance 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 BAU variance 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 variance check and AMP evidence assessment

#### a) Summary on opex

10. BAU variance check and AMP evidence assessment identified that First Gas's opex forecast can be considered to meet BAU criteria. The forecast opex for 2018-2022 has three key features:

- 1) opex is forecast to have a very flat trajectory over the period;
  - 2) opex levels are consistent with base year opex and track materiality levels for all years except 2017. However, the 2017 over-forecast is not considered materially relevant;
  - 3) non-network opex appears to have been re-categorised between business support and system operations and network support. Over the period, non-network opex is forecast to drop slightly.
11. The flat forecasts suggest First Gas has not considered the full potential for efficiency gains to be achieved in opex over the period. Given its recent acquisition of the assets this is not surprising, however, it is recommended that the Commission signals to First Gas that this is likely to require explanation should opex forecasts persists at similar levels for the next DPP reset.

Opex materiality assessment	Forecast (\$000)	Amount above the BAU materiality boundary, applying 'back cast' methodology for 2013-2015 to establish a proportionate base (\$000)	% of total opex
Service interruptions, incidents and emergencies	\$11,353	\$1,416	4.0%
Routine and corrective maintenance and inspection	\$9,227	\$1,364	3.9%
Asset replacement and renewal	\$0	\$0	0.0%
<b>Total non Network opex</b>	<b>\$14,687</b>	<b>\$868</b>	<b>2.5%</b>
<b>Total</b>		<b>\$3,647</b>	<b>10.3%</b>

12. Given the above materiality assessment, we have concluded that forecast opex is consistent with BAU levels and should therefore be accepted without the need for further AMP and/or supplier evidence assessment.

## b) Summary on capex

13. At an aggregate capex level, the forecast period between 2018 and 2022 exceeds capex BAU variance margins. From a total capex perspective, capex forecasts have been considered against the 3-year historical average base- as this is the first year following the sale and purchase of the distribution assets by Vector to First Gas.
14. The BAU check identified a stepped change between 3-year historical average base-capex forecasts and the capex forecasts for 2017. This was most significant in the network capex categories of systems growth and consumer connections. Network capex is forecast to total \$55m over the 5-year planning period, which is a 42.6% increase on the 3-year historical average.
15. The BAU materiality check is provided below:

Capex materiality assessment	Forecast (\$000)	Amount above the BAU materiality boundary, applying 'back cast' methodology for 2013-2015 to establish a proportionate base (\$000)	% of total Capex
Consumer connection	\$19,205	\$8,508	15.2%
System growth	\$16,410	\$13,363	23.9%
Asset replacement and renewal	\$18,030	-\$4,262	-7.6%
Asset relocations	\$1,328	-\$1,173	-2.1%
Total reliability, safety and environment	\$0	\$0	0.0%
Expenditure on Non-Network Assets	\$2,053	\$2,053	3.7%
<b>Total</b>	<b>\$57,026</b>	<b>\$9,981</b>	<b>17.8%</b>

nb: The expenditure for non-network assets is based on 2016 and not the 2013-2015 average.

16. Variances in Consumer connection, system growth and asset replacement and renewal were assessed as being material and required BAU variances to be checked through AMP evidence assessment.
17. Out of the questions on capex addressed in AMP evidence assessment, the following two remain unanswered and are recommended for supplier evidence assessment:
  1. The reasonableness of the step change in 2017 of system growth and consumer connection forecast capex.
  2. The reasonableness of the exceedance of system growth and consumer connection capex above the 3-year historical average base- capex for the entire assessment period 2018-2022.
18. Non-network capex was also forecast to be above BAU variance levels for every year except 2020. However, as non-network assets forecast increases contribute less than 5% to total forecast capex the forecast for this ID category has been assessed as BAU.

### Other matters

19. The network capex forecasts, especially the system growth and consumer connection forecasts, appear to be attributable to the adoption by First Gas of a different commercial strategy to that of the previous owner. This is indicated in the AMP but is not clearly articulated and is likely to be commercially confidential. Because the forecast growth in gas conveyed and ICPs connected to the network do not support the capex forecasts during the assessment period, it is recommended that more information be sought from First Gas regarding the drivers of the expenditure and the forecasting methodology. We expect that this would include consideration of commercial strategy, the nature of the information applied to develop the demand and consumer connection forecasting and how this supports the capex forecasts.
20. It is noted that the North Island gas businesses of First Gas, and those disclosed by Vector as previous owner, appear to have changed. Differences in the total system length and ICP's connected were also identified. System length differs by approx. 400km less than Vector disclosed for the year ended 30 June 2015 and consumer connections are 4,500 ICPs less. An explicit explanation of how the boundaries change post sale was not identified in the AMP and is required to establish if the changes are appropriate and reasonable.
21. Unlike other businesses, First Gas has not forecast any reliability, safety and environment capex during the period and yet commentary suggests that reliability and safety aspects are uppermost in First Gas's asset planning. An explanation for the absence of costs in this capex category could not be found in the AMP. Supplier evidence assessment is needed to identify a reasonable explanation for the apparent non-use of this capex category. The explanation should also assess if and to the extent that investments for reliability, safety and environment have been forecast in other capex categories.

## Concluding comments

22. Through use of the dashboard, the BAU variance check and AMP evidence assessment First Gas's forecast opex has been confirmed as suitable for consideration as BAU.
23. The BAU variance check and AMP evidence assessment have not satisfactorily identified the reasonableness of the capex forecasts stepping up in 2017 or remaining above the 2016 capex variance margin for the assessment period 2018-2022.
24. Two capex questions are recommended to be addressed through supplier evidence assessment. In addition, three other matters are identified that should be raised with First Gas as components of supplier evidence assessment. We consider that these questions should be easily addressed by First Gas providing additional supporting information.
25. Thank you for the opportunity to undertake this assessment of First Gas's forecast expenditure. Please contact me if you require any additional information.

Regards



Bill Heaps  
Managing Director  
Strata Energy Consulting Limited

## Appendix 1: BAU check and AMP assessment findings

### a) Opex

26. Opex was found to be within 2016 base opex BAU variance levels for the assessment period 2018-2022 in all years except 2017, but was not considered to be materially over the base year in 2017. The use of 2016 as base year was determined to be reasonable through assessment of the proportionality with the pre and post-split opex of Vector and First Gas.
27. We consider that the First Gas opex can be accepted as BAU.

### b) Capex

28. At a total capex level, the forecast period between 2018 and 2022 falls outside 2016 variance boundaries in all ID categories apart from asset replacement and renewal planning. From a total capex perspective, the capex cannot be considered BAU against the 3-year historical average base.
29. There is a significant increase in capex from the 3-year historical average base- in 2017 driven particularly by network capex forecasts for systems growth and consumer connections. We were unable to identify adequate explanations through assessment of the dashboard metrics to support the increased capex between 2016 and 2017.
30. In addition, network capex forecasts for systems growth and consumer connections capex exceed the base year, over the entire assessment period from 2018 to 2022. Adequate reasons for the forecasts could not be explained by the BAU data.
31. Non-network asset planning capex for the forecast period is above the capex boundary in all years except the 2020 year. However, its contribution to total capex is not material when compared to network capex forecasts.
32. Finally, we could not identify any forward forecasting of reliability, safety and environment capex investment for the assessment period. We consider that this should be explained in the AMP.
33. Two items have been subjected to AMP evidence assessment:
  1. Reasons for the stepped increase in capex between 2016 and 2017 above the BAU 3-year historical average base-:
    - a. reasons for the forecast increase in system growth capex from 2016 to 2017 above the 3-year historical average base-;
    - b. reasons for consumer connection capex stepping up between 2016 and 2017; and
  2. Reasons for total capex remaining above the 3-year historical average base-capex materiality levels for every year of the assessment period 2018-2022:

- a. reasons for system growth capex forecasts remaining above the 2016 BAU base capex for the assessment period;
- b. reasons for consumer connection capex continuing to be above the materiality base on an ascending forecast during the assessment period; and

### Summary of AMP evidence assessment findings for capex

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

#### 1. Reasons to support the stepped increase in capex between 2016 and 2017 forecast increases in system growth

##### a. System growth planning

35. In the Executive summary of the 2016 AMP, First Gas states that the purchase of Vector's gas distribution assets and a sole focus on gas, will better align commercial incentives to increase gas penetration in NZ. This suggests that a commercial strategy which is not articulated in the AMP may be driving system growth forecasting.
36. Section 5 of the AMP explains the approach to system development and system growth investment planning. System growth is explained by First Gas as focusing on increases in the capacity, size and functionality of the network.
37. Section 5.1.2 describes investment drivers as:
  - quality of supply (minimum levels of network pressure);
  - network parameters (acceptable operating pressure levels, pipe size, flow rates and so on);
  - service levels (set with retailers and customers); and
  - technical standards (meeting technical requirements while delivering optimum asset life and performance to achieve lowest overall cost).
38. The AMP adequately explains the planning methodology used, the options analysis, and how uncertainty is managed. The demand forecasting and the use of an internal model to forecast gas demand to project annual peak (winter) forecasts at each gate station are also adequately described. However, the resultant demand forecast itself is not well explained, nor the conclusion that there will be consistent growth across the network of approximately 5% over 10 years.
39. Section 5.6 of the AMP describes the network growth forecast as:

*Reflecting the project-base nature of this expenditure, the profile for the period is impacted by a number of large one-off projects. In addition to these large projects we*

*expect underlying` baseline` level of works.*

40. Section 5.8 of the AMP describes a number of high-level plans for the larger systems and systems with significant identified growth. Appendix F supplements this information by providing a description of all systems and where works are anticipated.<sup>2</sup>
41. The descriptions at section 5.8 set out the reasons for the planned growth projects identified and planned commencement dates but provides no insights into the forecast capex ramp up between 2016 and 2017.
42. Section 8.3 provides a summary of expenditure for network growth. For 2017 the summary reads: *Multiple reinforcement projects planned for 2017*
43. Section 5.8, Appendix F and section 8.3 do not sufficiently describe the 2016-2017 ramp up in forecast capex above the 2016 BAU base.

**b. Consumer connection capex**

44. First Gas (2016 AMP, section 5.7) forecasts customer connections by employing the mid-range (medium growth) forecast provided in 2014 work commissioned from Covec by the previous network owner, Vector.
45. The forecasting, however, is entitled *Auckland Connection Forecasts*<sup>3</sup> and appears to be focused on Auckland network connection forecasts only. Our analysis of First Gas's AMP explanation did not clarify that the Covec forecast is reliable for and applicable to, the North Island distribution network outside Auckland.
46. The AMP simply states that:

*We have utilised the medium growth forecast as a conservative basis for our connection forecasts in the AMP... The ICP connections forecast, combined with known and forecast subdivision, commercial and industrial connections informs our forecast Capex spend on customer connections. (2016 AMP section 5.7.2)*

47. First Gas summarises customer connections capex expenditure by stating that:

*Consistent with historical trends and our ICP connection forecast we are forecasting an increasing trend of customer connection Capex over the period. In addition, there are large subdivision connection projects and some carryover work from FY 16 that leads to the increase in FY17 (2016 AMP, section 8.4).*

48. No other commentary was identified in the AMP to support the stepped forecasting increase of consumer connection capex from 2016 to 2017. We conclude that the information provided in the AMP does not adequately explain the step up in

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<sup>2</sup> The introduction to Appendix F is confusing as it reads identically to the introduction to Appendix G which purports to consider a longer-term planning horizon to 2050. The confusion is not easily resolved as, with the exception of one description across the entirety of the systems, no dates or capex forecasts are provided.

<sup>3</sup> Covec (12 August 2014), *Auckland Connections Forecasts*, <https://www.comcom.govt.nz/dmsdocument/12285>

consumer connection capex expenditure from 2016 to 2017.

## **2. Reasons for total capex remaining above the BAU variance levels for every year of the assessment period 2018-2022.**

### **a. System growth capex**

49. The AMP assessment considered whether the system growth planning and capex forecasts were adequately explained for the assessment period. As identified above, the step change from 2016 to 2017 was not fully clarified despite adequate explanations of the forecasting and growth planning methodologies. We sought reasons for the continuation of capex above the BAU upper boundary throughout the 2018/22 forecast period, our findings are provided in the following subsections.
50. The drivers of system growth are not forecast by First Gas to increase significantly over the 2018 to 2022 assessment period. New customer connections are forecast to increase by only 3.0% over the period and new gas conveyed is forecast to increase by only 2.9% (2016 AMP, Appendix B.5, Forecast information disclosures, Schedule 12c(i) and (ii)).
51. The descriptions in section 5.8 (supplemented by Appendix F) whilst providing some understanding of the nature of the growth and reinforcement projects planned did not provide any understanding of the linkages to the levels of capex forecast across the period; nor did the summary of growth capex at section 8.3.
52. We found that the commentary in the AMP did not enable a satisfactory understanding to be gained on when the capex forecast over the period 2018 to 2022 would be applied to individual large projects. The AMP did not provide information on the forecast cost of the major projects identified.

### **b. Consumer connection planning**

53. Consumer connection capex is forecast to remain above the 2016 materiality boundary for the 2018 to 2022 assessment period.
54. The forecasts for consumer connections are said to be based on the Covec medium growth forecasting which is indicated in the AMP as conservative. However, over the period, the drivers of consumer connection capex are not forecast to grow materially. ICP connections are only forecast to grow by 3.0% over the 2018-2022 period.
55. Sections 5 and 8 did not adequately explain the forecast capex levels or their linkage to growth forecasts. First Gas expresses its view in the AMP that:

*Increased gas availability is good for consumers, providing the power to choose their ideal energy mix at home and work. We believe that having more gas users, with more diverse needs, will make our business more resilient and will ultimately lead to more competitive prices for our customers. (2016 AMP, section 5.7)*

56. This suggests that First Gas may have an underlying commercial strategy, as indicated in the executive summary and introduction in the AMP, but not fully articulated AMP. An explanation for consumer connection forecasts exceeding the 2016 capex base for the 2018-2022 period could not be found in the AMP. Given the significant forecast in system growth capex, we would have expected that the AMP

would have explained linkages with significant growth forecasts in ICP connections or total gas conveyed for the period.

### Supplier evidence assessment

57. It is recommended that supplier evidence assessment be undertaken to seek an explanation for the following capex forecasting matters:
- 1) the stepped change in total forecast capex expenditure between 2016 and 2017, which is significantly above the 2016 BAU capex level and, in particular:
    - i. the 2017 forecast of system growth capex, the key drivers that give rise to the forecast planned investments and the forecast costs of those projects and their commencement dates; and
    - ii. the 2017 forecast consumer connection capex projects and the key drivers for those projects, including an explanation of why the Covec forecasting is considered by First Gas to be a reasonable and prudent forecast to support non-Auckland consumer connection network forecasting.
  - 2) the total capex forecast exceeding the BAU base capex variance levels from 2017 to 2021 and particularly:
    - i. the forecast system growth capex from 2018 to 2022 and the key projects, their commencement dates and cost estimates across the period; and
    - ii. the consumer connection capex forecasts from 2018 to 2022 including an explanation of these projects, their commencement dates and cost estimates for each key project forecast to be carried out over the assessment period.

These two ID categories account for an increase of 38.3% of total capex for the forecasting period (2018/22) above the 3-year historical average base-year level.

- 3) It is noted that First Gas has forecast no reliability, safety and environment capex forecast for the period 2018 to 2022. Also, no expenditure was incurred or forecast in this category for 2016. Despite AMP evidence assessment, no explanation could be found in the AMP for First Gas not forecasting investment for reliability safety and environmental reasons. Indeed, to the contrary, safety and reliability and environmental matters were emphasised as important investment considerations. First Gas should explain how, in the absence of reliability, safety and environment capex forecasts, these forecast investment matters are addressed in its planning.

## Supplier evidence assessment worksheet – First Gas distribution

### Opex

Item requiring assessment	Resolution required	Guidance	Background information
No Opex items require supplier evidence assessment			

### Capex

Item requiring assessment	Resolution required	Guidance	Background information
System Growth capex	The reasonableness of the step change in system growth capex and its continued forecast exceedance compared to the 2016 BAU base capex level for the assessment period	This assessment should include consideration of the business cases for a small selection of the projects in this category. An assessment of the commercial strategy of First Gas will also be important to understand the commercial drivers. More detail relevant to system growth forecasting and the output of the internal demand models would be useful to determine the prudence and reasonableness of the forecasts proposed.	Section 5 sets out the drivers of network system growth. Appendix F sets out a system by system description of key developments foreshadowed over the period. However, the project descriptions do not satisfactorily provide the reasons for the stepped change in forecast system growth expenditure in 2017 or the on-going exceedance of the 2016 BAU base capex level from 2018 to 2022. The AMP sections do not provide comprehensive forecast commencement dates or any forecast project costs to enable assessment of the reasonableness and prudence of the system growth forecasts proposed.

<p>Consumer connection capex</p>	<p>The reasonableness of applying Auckland-focused forecasts to non-Auckland networks and the reasonableness of the step change in consumer connection capex in 2017 and its exceedance of the BAU capex base materiality boundary for the assessment period</p>	<p>This assessment should include consideration of business cases for a small selection of key projects in this category. An assessment of consumer connection forecasting and other growth information relevant to the consumer connection forecasts, including understanding of the subdivision and other growth indicated in the 2016 AMP.</p>	<p>Section 5 of the AMP sets out the system growth and consumer connection discussions. While the planning and methodologies are well described, the use of some forecasts (particularly the Covec forecast) without more explanation, do not provide sufficient or satisfactory explanation of the consumer connection capex forecast. The commentary in section 5 and the summary at section 8 do not assist to clarify whether the forecasts are reasonable and prudent, particularly, when the ICP connections and total gas conveyed forecasts provided in Appendix B.5 do not indicate significant growth during the assessment period.</p>
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