Review of application of the New Facilities Investment Test by Goldfields Gas Transmission

A REPORT PREPARED FOR THE ECONOMIC REGULATORY AUTHORITY

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1 Introduction

1.1 Scope of this report

Frontier Economics (Frontier) has prepared this Final Report for the Economic Regulatory Authority (the Authority) in relation to proposed revisions to the Goldfields Gas Pipeline (GGP) Access Arrangement submitted by the operators of the GGP, Goldfields Gas Transmission Pty Ltd (GGT).

This Report provides Frontier's final views on GGT's submission in respect of the application of sections 8.16(a)(ii)(A) and (B) of the *National Third Party Access Code for Natural Gas Pipeline Systems* (the Gas Code). This section applies to both:

- Capital expenditure that <u>has been incurred or will be incurred</u> on the pipeline and associated infrastructure over the period of the previous access arrangement, from 1 January 2000 to 31 December 2009; and
- Capital expenditure that <u>is forecast to be undertaken</u> on the pipeline and associated infrastructure over the period of the new access arrangement, from 1 January 2010 to 31 December 2014 (through section 8.20 of the Gas Code).

1.2 Structure of this report

This Report is structured as follows:

- Section 2 outlines the relevant requirements of the Gas Code;
- Section 3 describes the information provided by GGT in relation to relevant investment;
- Section 4 provides our assessment of GGT's submission; and
- An appendix sets out a detailed discussion of confidential material provided to the Authority by GGT.

2 Requirements of the Gas Code

The aspects of the Gas Code relevant to this Report are those dealing with the criteria that capital expenditure on a regulated pipeline needs to satisfy before being added to the regulated asset base of that pipeline.

Section 8.15 of the Gas Code provides that the Capital Base for a Covered Pipeline may be increased to reflect New Facilities Investment. Section 8.16(a) provides that actual New Facilities Investment in the preceding Access Arrangement Period may be added to the Capital Base if certain criteria are met.

These criteria are set out as follows:

> (i) that [the] amount does not exceed the amount that would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest sustainable cost of providing Services; and
>
> (ii) one or more of the following conditions is satisfied:
>
> (A) the Anticipated Incremental Revenue generated by the New Facility exceeds the New Facilities Investment; or
>
> (B) the Service Provider and/or Users satisfy the Relevant Regulator that the New Facility has system-wide benefits that, in the Relevant Regulator's opinion, justify the approval of a higher Reference Tariff for all Users; or
>
> (C) the New Facility is necessary to maintain the safety, integrity or Contracted Capacity of Services.

Under the Gas Code, "Anticipated Incremental Revenue" means:

> the present value (calculated at the Rate of Return) of the reasonably anticipated future revenue from the sale of Services at the Prevailing Tariffs which would not have been generated without the Incremental Capacity, minus the present value (calculated at the Rate of Return) of the best reasonable forecast of the increase in Non Capital Costs directly attributable to the sale of those Services.

Section 8.16(b) combined with sections 8.20-8.22 together provide for the Regulator to agree to the Service Provider's Reference Tariffs being determined to reflect forecast New Facilities Investment so long as that forecast investment is expected to satisfy the requirements in section 8.16(a).

Finally, Frontier has not been asked to assess:

- whether the amount of capital expenditure satisfies the prudency requirements of section 8.16(a)(i); and
- expenditure justified on the basis that it is necessary to maintain "the safety, integrity or Contracted Capacity of Services" (section 8.16(a)(ii)(C)).

3 Information provided by GGT

GGT initially provided the following information in relation to the assessment of actual and forecast capital expenditure under section 8.16(a) of the Gas Code:

- *GGP Approved Access Arrangement*, as revised, 17 December 2008;
- *GGP Proposed Revisions to Access Arrangement*, 23 March 2009 (tracked changes version);
- *GGP Access Arrangement Information*, 23 March 2009, sections 3 and 4;
- *GGP Supporting Information to Proposed Revisions to Access Arrangement*, Confidential, 7 April 2009;
- *GGP Supporting Information to Proposed Revisions to Access Arrangement*, Public Submission, 21 April 2009.

Following a request from the Authority for further information, GGT provided the following confidential documents:

- A written response to the Authority's Section 41 notice dated 26 May 2009[1]; and
- Two Excel spreadsheets in relation to the following investments:
  - Wiluna compressor, which was approved to be undertaken in February 2000[2];
  - Paraburdoo compressor, which was approved to be undertaken in June 2002[3].

Frontier notes apart from these two compressor investments, no other actual or forecast capital expenditure was included in the proposed revisions to the Access Arrangement that was justified under section 8.16(b)(ii)(A) or (B) of the Gas Code.[4] Other capital expenditures were justified on either of the following bases:

- As necessary to maintain the safety, integrity or Contracted Capacity of Services under section 8.16(a)(ii)(C); or

[1] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009.

[2] 20090528_s.41_Notice_s._8.16(a)(ii)(A)_Code_Test_WCS.xlsx.

[3] 20090528_s._41_Notice_s._8.16(a)(ii)(A)_Code_Test_PCS.xlsx.

[4] See Appendix 2 and 3 of *GGP Supporting Information to Proposed Revisions to Access Arrangement*, (either the Confidential version of 7 April 2009 or the Public Submission version of 21 April 2009).

- As 'stay in business' costs.

As requested by the Authority, any discussion of confidential material (including the Excel spreadsheets) is contained in the Appendix to this Report.

4 Review of GGT submission

The GGP Access Arrangement Information dated 23 March 2009 provided figures in relation to the pipeline's initial Capital Base and changes to the Capital Base from 2000 to 2009.[5] It also provided figures for forecast capital expenditure. More details were provided in the Supporting Information documents (both the Confidential document of 7 April 2009 and the Public Submission of 21 April 2009).[6]

Both of the Supporting Information documents demonstrated that the only capital expenditures justified on the basis of section 8.16(b)(ii)(A) or (B) of the Gas Code were, as noted above, the:

- Wiluna compressor; and
- Paraburdoo compressor.

In both cases, the Supporting Information documents stated that GGT submitted the expenditure satisfied the New Facilities Investment Test on the grounds that:

- The construction tender process was sound and demonstrated that the amount of expenditure was prudent and in accordance with good industry practice; and
- Given that the investment was driven by requests for increased capacity from Users, it was reasonable to expect that the Anticipated Incremental Revenue generated by the New Facility would exceed the New Facilities Investment.[7]

Frontier considered that the second of these reasons provided insufficient evidence to satisfy the requirements of section 8.16(a)(ii)(A). In response to the Authority's request for further information, as noted above, GGT provided both a written response and two Excel spreadsheets, one for each compressor investment. As these documents were all provided on a confidential basis, they have been discussed only in the Appendix.

Nevertheless, having reviewed the additional confidential material from GGT, Frontier considers that both compressor expenditures satisfy the requirements of section 8.16(a)(ii)(A) of the Gas Code within the constraints of our analysis.

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5 Sections 3 and 4, pp.3-5.

6 See Appendix 2 and 3 (of both Supporting Information documents).

7 See section A2.3.2.7 on p.53 (of both documents) for the Wiluna compressor station and section A2.3.2.7 on p.57(of both documents) for the Paraburdoo compressor station.

Finally, we note that none of the stakeholder submissions to the Authority on the proposed revisions to the GGP Access Arrangement commented on the application of sections 8.16(a)(ii)(A) or (B) of the Gas Code.

Appendix – Methodology & Analysis (Confidential information has been blacked out)

Background

This Appendix discusses the following confidential material provided to the Authority by GGT in relation to the section 8.16(a)(ii)(A) assessments of the Wiluna compressor and Paraburdoo compressor investments undertaken in the early years of this decade:

- A written response to the Authority's Section 41 notice dated 26 May 2009[8]; and
- Separate Excel spreadsheets in relation to both the Wiluna compressor[9] and the Paraburdoo compressor[10].

Agreed form of analysis

In the written response, GGT notes that the assessment of both compressor investments has been undertaken on the basis of commercial principles consistent with a discussion between GGT and officers of the Authority on 14 May 2009.[11] This implies that:

- Simple one-worksheet discount cash flow analysis was only required and not to the detail of the DBP incremental revenue model;
- The tariff used was the Prevailing Tariff being the Reference Tariff from the Approved Access Arrangement;
- The calculation of Anticipated Incremental Revenues would be carried out by discounting revenue and non capital costs by a pre-tax nominal WACC of 10.6% being the approved Rate of Return under the current Access Arrangement; and

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[8] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009.

[9] 20090528_s.41_Notice_s._8.16(a)(ii)(A)_Code_Test_WCS.xlsx.

[10] 20090528_s._41_Notice_s._8.16(a)(ii)(A)_Code_Test_PCS.xlsx.

[11] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, p.4.

- Accordingly, GGT did not provide a range of forecasts.[12]

As a consequence, Frontier has taken these assumptions and attributes of the analysis as given.

Modelling approach

In both cases, GGT undertook its assessment under section 8.16(a)(ii)(A) using a (quarterly) cash flow model incorporating:

- Actual CPI data up to 31 March 2005 and forecast CPI of 2.69% per annum thereafter (consistent with the current Access Arrangement);
- Actual capital expenditure and estimates of additional operating and maintenance expenditure attributable to each New Facility;
- Estimates of capacity reservation and customer distances specific to each New Facility investment;
- Transportation revenues in respect of each New Facility investment based on the methodology in the Approved Access Arrangement.[13]

The next section discusses the modelling assumptions specific to each compressor investment.

Modelling assumptions and discussion

Wiluna compressor station

GGT noted that it used the following key inputs in its Anticipated Incremental Revenue Model for the Wiluna compressor station:

- MDQ of 6 TJ/day being the increase in GGP's capacity;
- Current throughput for each of the Relevant Customers;
- Capacity required by each of the Relevant Customers;
- Contractual distance for each of the Relevant Customers, as set out in customer contracts or the GGP Joint Venue Agreement;

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12 As above.

13 See both spreadsheets.

- Estimated operating and maintenance costs of $0.37 million per annum as at February 2000;

- Actual construction capital costs $11.1 million over a time profile.[14]

GGT went on to calculate:

- A weighted-average load factor (WALF) of 0.87 by dividing the current throughput (of 69 TJ/day) by the total required/requested capacity (of 79.5 TJ/day); and

- A weighted average customer distance (WAD) across seven customers of 1,139 km.[15]

While the derivation of the WAD is logical, the derivation of the WALF is somewhat confusing. In particular, it is not clear how the ratio of the current throughput (in TJ/d) to the required capacity (in TJ/d) is relevant to the expected utilisation of the 6 TJ/d capacity expansion. If anything, the WALF could be estimated to be 0.81, on the basis that 'current throughput' was only 69 TJ/d while the pre-existing capacity was 85 TJ/d (so 69/85 = 0.81). However, such a change would only reduce the present value of revenues by $0.3 million and as such would not alter the overall findings of the analysis.

GGT's model then calculated quarterly (over a 17 year period – not 16 as stated):

- Revenues;

- Incremental non capital costs;

- Operating cash flows;

- New Facilities Investment outlays;

- Net cash flows before tax; and

- Discounted net cash flows before tax.[16]

The application of GGT's model culminated in a:

- Net Present Value before tax of the Wiluna compressor of $11.6 million as at Q1 1997 (discounted using the agreed pre-tax nominal WACC); and

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[14] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, pp.5-6.

[15] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, p.5.

[16] See 20090528_s.41_Notice_s._8.16(a)(ii)(A)_Code_Test_WCS.xlsx.

- Satisfaction of section 8.16(a)(ii)(A) of the Gas Code based on Anticipated Incremental Revenue exceeding the New Facilities Investment by $15.2 million.[17]

This outcome was surprising, as the NPV calculation should have yielded a higher positive figure than the excess of the Anticipated Incremental Revenue over the New Facilities Investment. This is because the only difference between the two calculations should be that the NPV calculation discounts <u>all</u> expenditures, whereas the 8.16(a)(ii)(A) calculation compares discounted net operating cash flows to nominal New Facilities Investment costs. Therefore, to the extent that New Facilities Investment expenditure occurs later than the first period of the analysis, the NPV of the investment should always be higher than the excess of Anticipated Incremental Revenue over the New Facilities Investment.

On closer examination, it appeared that GGT's spreadsheet contained an error, which led to the present value of revenues (cell G122) being overstated by $7.4 million.[18] The correct excess of the Anticipated Incremental Revenue over the New Facilities Investment was actually $7.9 million instead of $15.2 million. But despite this, the Wiluna compressor station investment still satisfied section 8.16(a)(ii)(A) of the Gas Code.

Paraburdoo compressor station

As with the Wiluna compressor station, GGT noted that it used the following key inputs in its Anticipated Incremental Revenue Model for the Paraburdoo compressor station (over a 19.5 assessment period):

- MDQ of [redacted]
- Load factor of [redacted]
- Contractual distance of [redacted]
- Estimated operating and maintenance costs of $0.7 million per annum as at June 2002;
- Actual construction capital costs $12.3 million over a time profile.[19]

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[17] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, p.6; 20090528_s.41_Notice_s._8.16(a)(ii)(A)_Code_Test_WCS.xlsx.

[18] The error was caused by cells J74 to U74 inclusive being blank instead of being entered with zero values. The result was that Excel discounted the quarterly revenues only back to Q1 2000 instead of back to Q1 1997, as was done for the discounting of costs.

[19] *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, p.7.

GGT's model then calculated quarterly:

- Revenues;
- Incremental non capital costs;
- Operating cash flows;
- New Facilities Investment outlays;
- Net cash flows before tax; and
- Discounted net cash flows before tax.[20]

The application of GGT's model culminated in a:

- Net Present Value before tax of the Paraburdoo compressor of $3.5 million as at Q3 2002 (discounted using the agreed pre-tax nominal WACC); and
- Satisfaction of section 8.16(a)(ii)(A) of the Gas Code based on Anticipated Incremental Revenue exceeding the New Facilities Investment by $1.8 million.[21]

In our view, the results of this modelling appear reasonable.

20 *GGT Response to ERA Section 42 Notice dated 26 May 2009*, 8 June 2009, p.7; 20090528_s._41_Notice_s._8.16(a)(ii)(A)_Code_Test_PCS.xlsx.

21 As above.

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