DAMPIER TO BUNBURY NATURAL GAS PIPELINE
PROPOSED REVISED ACCESS ARRANGEMENT

SUBMISSION # 28

GAS QUALITY SPECIFICATION

PUBLIC VERSION

MAY 2005

DBNGP (WA) Transmission Pty Limited
ABN 69 081 609 190
Level 7, 239 Adelaide Terrace
PERTH WA 6000
Contact: Anthony Cribb
Telephone: 08 9492 3803
Facsimile: 08 9492 3881

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1. EXECUTIVE SUMMARY

1.1. This is one of a series of submissions being made by Operator in response to the Draft Decision ("Draft Decision") released by the Regulator on 11 May 2005 in connection with the proposed revised Access Arrangement submitted by Operator in January 2005. These submissions deal with the following topics:

(a) **[deleted – confidential]**

(b) A response to the Draft Decision Amendments (Submission#27)

(c) Gas Quality Specification issues (Submission#28)

(d) Further explanation and justification of the forecast non capital costs for the Access Arrangement Period (Submission#29)

1.2. In the Draft Decision an amendment is required to the proposed revised Access Arrangement that the gas quality specification be amended to a broader specification than was proposed by Operator (see amendment #15)

1.3. Operator submits that this amendment is unreasonable and does not reflect a proper application of the factors required to be taken into account by the Regulator under the Code when assessing an Access Arrangement.

1.4. This is so for the following reasons:

(a) **[deleted – confidential]**

(b) **[deleted – confidential]**

(c) **[deleted – confidential]**.

(d) **[deleted – confidential]**.

(e) While a review was undertaken in 1995 of the Gas Quality Specification for the DBNGP, there does not appear to have been any recent assessment of the implications of broadening the specification. In particular there has been no meaningful cost/benefit analysis undertaken to determine whether the proposed amendment has net economic advantage to industry and to the State. Until such an analysis is undertaken, given the conflicting views that have been presented to the Regulator as to the impact of the amendment would have on various elements of the gas supply chain, Operator submits that it would be unreasonable and not in the interests of good public policy to impose such an amendment.

(f) The provisions relating to gas quality that were included in the proposed revised Access Arrangement submitted by Operator in January 2005 were based on the provisions of contracts that were negotiated with shippers (who in some cases were also producers) on a voluntary basis in 2004. The fact that the proposed provisions were the result of a mutual willingness of parties to negotiate and the fact that these parties were fully aware of their rights underlines the reasonableness of the arrangements negotiated at that time with respect to gas quality. This is supported by the fact that the Regulator has itself concluded that the other provisions of the renegotiated contract are reasonable terms and conditions for inclusion in the Access Arrangement.

(g) **[deleted – confidential]**.

1.5. In light of the above issues, Operator is unable to comply with amendment 15 at this stage or to propose an alternative provision to the one included in its proposed revised Access Arrangement. Moreover, Operator considers that the Regulator's amendment 15 does not reflect a proper application of the Code.

2. DRAFT DECISION AMENDMENT

2.1. In the Draft Decision, the Regulator required the proposed revised access arrangement to be amended so that the terms and conditions for Reference Service include an Operating Specification for gas quality as follows and to apply from the time that the Proposed Access Arrangement comes into effect

Component		Receipt Points and Delivery Points
Maximum carbon dioxide (mol %)		4.0
Maximum inert gases (mol %)		7.0
Minimum higher heating value (MJ/m^3)		37.0
Maximum higher heating value (MJ/m^3)		42.3
Minimum Wobbe Index		46.5
Maximum Wobbe Index		51.0
Maximum total sulphur (mg/m^3)	Unodorised	10
	Odorised	20
Maximum Hydrogen Sulphide (mg/m^3)		2
Maximum Oxygen (mol %)		0.2
Maximum Water (mg/m^3)		48
Hydrocarbon dewpoint over the pressure range 2.5 to 8.72 MPa absolute		Below 0 °C
Maximum radioactive components (Bq/m^3)		600
Minimum extractable LPGs (t/TJ)		0

2.2. Having purportedly considered the matters set out section 2.24 of the Code, the Regulator concluded that:

(a) the persistence of the current gas quality specification for the DBNGP and the potential for substantial further delay in adoption of a wider gas quality specification would be unreasonably contrary to the interests of most pipeline users and gas producers and would be contrary to a public interest in expanding the potential sources of supply to the DBNGP;

(b) it would be unreasonable if the terms and conditions included a mechanism for a change to a wider gas quality specification that is not able to be readily implemented; and

(c) terms and conditions for a Reference Service that do not incorporate a wider gas quality specification than the current Operating Specification beyond 30 June 2005 would be unreasonable

2.3. A summary of the reasoning given for these conclusions is as follows:

(a) The introduction of a wider gas quality specification has been anticipated since 1995, and has been expected by gas producers, Users of the DBNGP and end-users of gas to occur on 1 July 2005 with the falling away of the requirement for a minimum concentration of LPGs in gas delivered to the DBNGP. Regulations had been implemented which foreshadowed a widening of the specification, and set out the Broadest Specification, for the purpose of making it clear to the pipeline owner and to Users that the renegotiation of existing contracts or entry into new contracts with a gas quality specification narrower than the Broadest Specification would be at the commercial risk of the parties to these contracts ("**government policy reason"**).

(b) the Regulator took the view that no party can reasonably oppose the broadening of the gas quality specification for reason of an erosion of current contractual rights ("**preservation of contractual rights reason**").

(c) the widening of the gas quality specification of the DBNGP would allow alignment with the gas quality specifications for the Goldfields Gas Pipeline, Parmelia Pipeline and AlintaGas Distribution Systems, thus:

(i) improving prospects for gas trading and use of the Mondarra gas storage facility;

(ii) allowing manufacturers of gas-using appliances to produce appliances suitable for a known and widely applied gas standard; and

(iii) allowing the interchange of gas between the DBNGP and Parmelia pipeline ("**specification alignment reason**").

(d) the widening of the gas quality specification would alter the specification to be close to a national gas quality standard ("**national standard reason**").

(e) there are no technical or safety issues preventing adoption of a wider gas quality specification that is the same as the Broadest Specification ("**safety and technical reason**")

(f) a broadening of the gas quality specification from that proposed by DBNGPT is not likely to have a substantial affect on the Capacity of the DBNGPT. This was because, in the Regulator's eyes, the effect of the change in gas quality specification on the Capacity of the DBNGP is primarily determined by the change, if any, on the specification for minimum higher heating value, which change is substantially affected by the required LPG content for gas received into the DBNGP. The Regulator concluded that, as a minimum LPG content will not be required after 1 July 2005, the remaining difference in minimum higher heating value between the Operator's proposed Operating Specification and either the Broadest Specification of the Dampier to Bunbury Pipeline Regulations 1998 or the broader specification proposed by Operator is relatively small ("**capacity impact reason**").

(g) Blending of gas from multiple sources in order to ensure that gas in the pipeline, in aggregate, meets the specification is only possible if another gas producer supplier provides "better-than-specification" gas in order that parties with a "lower-than-specification" gas can blend the two gas streams. But this can not be relied upon for two main reasons:

(i) the availability of better-than-specification gas into the future is not assured.

(ii) blending of gas streams introduces a number of commercial issues insofar as a provider of better-than-specification gas may object to blending arrangements with suppliers of lower-that-specification without commercial consideration ("**blending reason**").

(h) A widening of the gas quality specification would potentially be of substantial benefit to many Users and Prospective Users through increasing the number of sources of gas for supply to the DBNGP, increasing competition in the upstream market for gas and reducing costs of gas treatment prior to supply of the DBNGP. To the extent that introduction of a wider gas quality specification would increase competition in upstream markets for gas and potentially reduce gas prices, there is a public interest in the implementation of a wider specification ("**promoting upstream competition reason**").

(i) any resultant reduction in the cost of gas as an energy source would promote the use of gas over other fuels with corresponding reductions in greenhouse gas emissions ("**reduces greenhouse gas emissions reason**").

2.4. Operator responds to each of these reasons in turn in the following section of this Submission.

3. RESPONSE TO REGULATOR'S REASONS FOR AMENDMENT

3.1. This section of the Submission:

(a) Outlines some preliminary issues which are relevant to the balance of this submission; and

(b) sets out Operator's response to each of the Regulator's reasons for this amendment that were identified in the immediately preceding section of this Submission.

Preliminary Issue #1

3.2. In requiring this amendment, the Regulator has rejected the specification and mechanism allowing the move to a broader specification that was included in the SSCs.

3.3. These contracts were the result of detailed and protracted negotiations with shippers (including shippers who are also producers) and the current owners and, as the Regulator concludes, are representative of mutual agreement between shippers and the Operator.

3.4. The approach of the Regulator, if it is to be reflected in the revised access arrangement, would result in a change to one of the key bases for the arrangements agreed willingly by the parties – it would reflect a selective assessment of the terms and conditions of the contract.

3.5. **[deleted – confidential]**

Preliminary Issue #2

3.6. The Regulator appears to have given unreasonable weight to the claims made by the most significant users of the pipeline, despite acknowledging in the Draft Decision that a wider gas specification is opposed by some end users of gas as an energy source and end users of gas as a production feedstock.

3.7. It should be noted that in percentage terms, gas transported on the DBNGP, is utilised for the following purposes (based on 2004 throughput data):

- Alumina production 45%
- Industrial uses other than alumina production, including direct use of gas as a feedstock 28%
- Electricity generation 17%
- Retail use 10%

3.8. From the submissions made to the Regulator prior to the Draft Decision, it is evident that users representing about 90% of gas delivered through the pipeline did not support moving to the broadest specification.

3.9. Given the economic significance of these users to the DBNGP and also the State, Operator submits that significant weight needs to be given to submissions made by these

parties or at least a thorough cost benefit analysis should be undertaken before such an important decision as to the gas specification for the DBNGP is made.

Preliminary Reason #3

3.10. This is an attempt by Regulator to develop and modify government policy in respect of environmental, economic and supply reliability issues. The role of a regulator is to apply the law (which is expected to reflect government policy), not develop government policy.

Government Policy Reason

3.11. Turning now to the reasons the Regulator has given in support of a move to the broadest specification, it is misleading to suggest that government policy has created an expectation on producers and users that the specification would move without further detailed consideration, to a broader specification than the Operating Specification following 1 July 2005.

3.12. Arguments put forward to and relied on by the Regulator include:

(a) The government has already undertaken a consultative process in 1995 which resulted in the support for a move to the Broadest Specification

(b) The government introduced the Dampier to Bunbury Pipeline Regulations ("DBP Regs") which included a Broadest Specification.

3.13. Operator submits that the above points, on their own, clearly show that there was never a government policy that the gas quality for the DBNGP would move to the Broadest Specification by 1 July 2005. In fact, the Access Manual which formed the basis for contracts entered into under the DBP Regs contained a "Broadest Specification" for contractual purposes which was different from the Broadest Specification under the DBP Regs themselves, indicating that there was not a definitive position on gas specification going forward. Furthermore, the most recent evidence of the Government's position on gas specification reinforces this point.

3.14. In a submission made to the Regulator as part of its assessment of the current access arrangement, the Coordinator of Energy presented the government's position as follows[1]:

(a) It supported the broadening of a gas specification but was equivocal as to whether it should be broadened to the Broadest Specification contained in the DBP Regs or the Access Manual.

(b) It is in the public interest to have specifications which do not impede the entry of new sources of gas into the DBNGP

(c) It is acknowledged that certain stakeholders have stringent requirements for the use of gas in their downstream processes.

(d) The move to a broadening of the gas specification would need to require careful consideration and a detailed public consultation process before that could occur

(e) It is not the case that the Regulator has sole control over the gas quality on the DBNGP as consideration was being given to the Government maintaining regulatory control over the gas specification for the DBNGP.

[1] Submission by the Coordinator of Energy to the Independent Gas Pipelines Access Regulator, 2 April 2003.

3.15. **[deleted – confidential]**.

Preservation of contractual rights reason

3.16. Operator submits that this reason reflects a failure to take into account the requirements of section 2.47 of the Code or section 2.24(a) of the Code. This is so for the following reasons.

3.17. It would be inconsistent with section 2.47 of the Code because the Draft decision requires the inclusion of 3 services as Reference Services under the Access Arrangement.

3.18. There is currently spare capacity to make available at least 2 of these 3 reference services, although it is accepted that Operator is not forecasting a large volume of these services to be sought during the access arrangement period.

3.19. **[deleted – confidential]**

3.20. Under the Standard Shipper Contract, Operator is required under clause 7.1 to deliver gas that complies with the relevant gas specifications defined in the contract. If a decision by the Regulator to broaden the gas quality specification leads to Operator delivering (or only being able to deliver) Out-Of-Specification Gas to a shipper, one of three situations may arise:

1. The shipper may agree (at its own risk) to receive the Out-Of-Specification Gas from Operator on whatever terms and conditions (including as to pricing) that the shipper and Operator may agree (clause 7.9(a)). In these circumstances, the impact on Operator would depend upon the agreement reached with the shipper. Importantly, Operator cannot control whether the shipper will agree to accept gas on this basis.

2. The shipper may refuse (at any time and without penalty) to receive the Out-Of-Specification Gas from Operator and, as a result, the shipper will be entitled to a refund of Capacity Reservation Charges for any capacity it is unable to use on the gas day (clause 7.6). In these circumstances, Operator will be faced with a loss of potential revenue.

3. Operator may (for some reason) deliver the Out-Of-Specification Gas to the shipper without the shipper's agreement and, as a result, Operator will be liable to the shipper for Direct Damage (clause 7.9(b)). "Direct Damage" is defined as "loss or damage which is not Indirect Damage".

3.21. **[deleted – confidential]**.

3.22. **[deleted – confidential]**

3.23. **[deleted – confidential]**.

3.24. **[deleted – confidential]**.

3.25. **[deleted – confidential]**.

Specification alignment reason

3.26. Operator submits that the Regulator has given undue weight to this reason. Given the level of utilisation of gas by the domestic market relative to the total utilisation of the

pipeline's capacity, there may well be more efficient ways of enabling gas to be delivered safely to domestic users.

3.27. In addition, if appliances are already manufactured to meet a broader specification than that which is proposed by Operator, there is no question about appliance safety if the Operating Specification remains.

Capacity Impact Reason

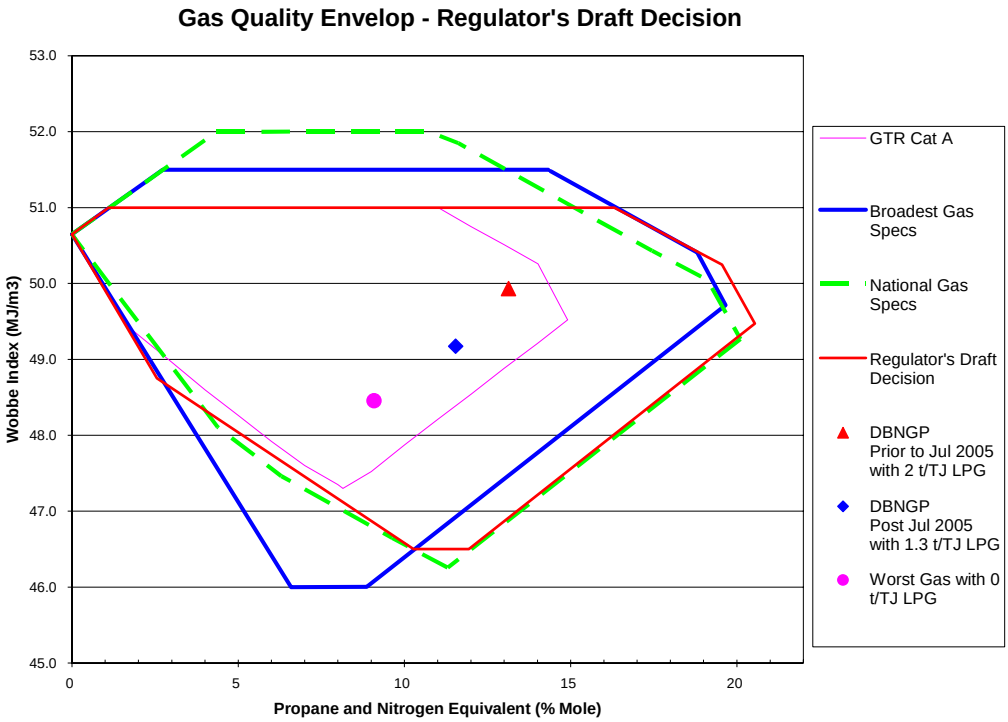
3.28. As Operator outlined in its earlier submissions, there is a real and significant impact on capacity, for reasons other than the removal of the minimum LPG content requirement from the specification. The impact on capacity is not driven by LPGs, rather it is driven by Heating Values and the Wobbe Index, both of which vary with the hydrocarbon composition and the levels of inerts in the gas.

3.29. The following graph shows the Dutton Gas Quality Envelop for the gas specification recommended by the Regulator's Draft Decision plotted against the original GTR Category A gas, as well as the Broadest Gas Specification and the National Gas Specification.

3.30. Plotted on the same graph are the Design Gas Specifications for the DBNGP for the periods before and after July 2005.

3.31. The graph shows that the Wobbe Index for the "worst case scenario" of zero LPG gas is still significantly above the minimum Wobbe Index level as recommended by the Regulator's Draft Decision. This implies that broadening of gas specification limits to allow gas receipts at much lower Wobbe Index will result in significant lowering of Heating Value compared to even the worst case "no LPG" gas specification. It will therefore result in a substantial reduction in pipeline capacity.

3.32. Additional capacity enhancement will be required to firstly recover the capacity loss due to the reduction in heating value and secondly recover the capacity loss due to the lower Wobbe Index if the Regulator's Draft Decision gas specification is adopted. The graph shows an approximate reduction of 1.5MJ/m3 Wobbe Index for zero LPG gas plus a further reduction of 2.5MJ/m3 for the Regulator's Draft Decision gas specification. Therefore adoption of the Regulator's Draft Decision on gas specification would result in significantly increases in enhancement cost.



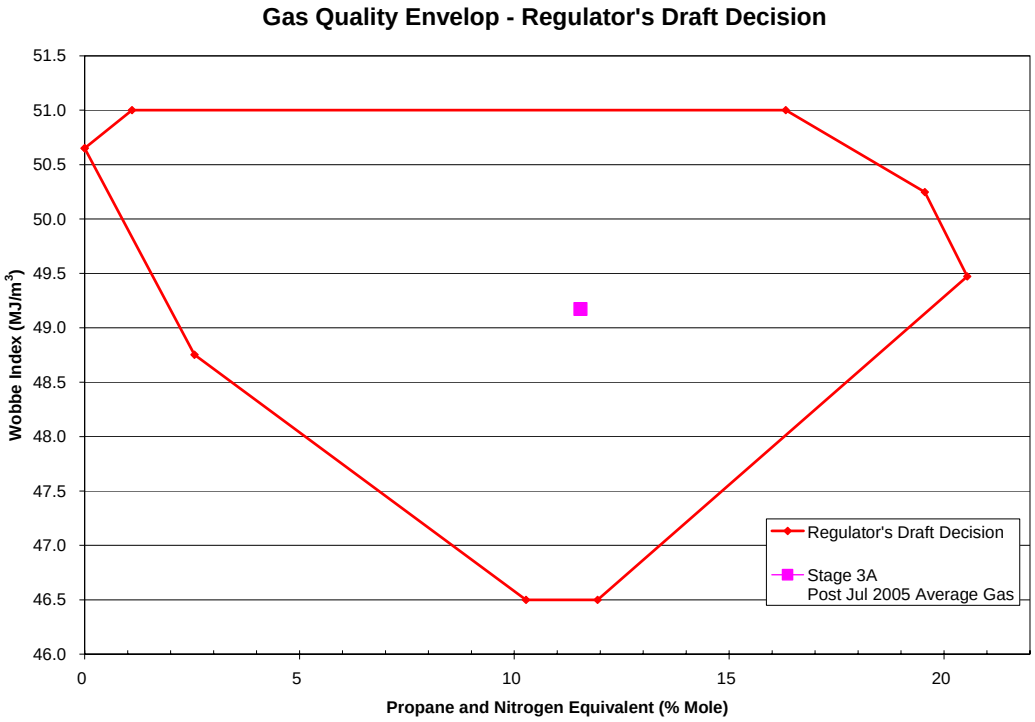
Impact on Current (Stage 3A) DBNGP Capacity

3.33. The first graph below shows the assumed Stage 3A gas quality (as used to defined the DBNGP capacity tranches) for the period post July 2005, plotted in the same Dutton graph as the gas specification as recommended by the Regulator's Draft Decision. It can be seen that the assumed Stage 3A gas specification is in the middle region of the Dutton Envelop with an average Wobbe Index.

3.34. **[deleted – confidential]**.

3.35. **[deleted – confidential]**.

3.36. **[deleted – confidential]**.



[deleted – confidential]

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3.37. **[deleted – confidential]**.

[deleted – confidential]

[deleted – confidential]

3.38. Details of the additional capacity required to be installed to meet the forecast expansion program are still be calculated and will be provided shortly.

Blending reason

3.39. The proponents of a broader specification (producers) all claim that a broader specification will facilitate the development of more fields and thus encourage competition. While a broader specification may well allow more sources of gas into the market (although there is no evidence to suggest that this will occur), as all producers are making the same claim, the conclusion must be that competition is about the efficiency of their processing services. In a truly competitive market, the price for blending would approach the price for efficient processing, being the alternative service, so the market price will end up the same.

3.40. Better than specification gas is a very subjective concept - if one source is high in say CO2, but has no N2, and another is the reverse, blending can be carried out. If they both have a CO2 problem, blending is not possible. No conclusion can, therefore be drawn about future specifications with any degree of certainty, as it will be driven by producers

decisions about field sequencing. Each field - and potentially each well - has a different specification issue, so the actual specification varies from day to day, depending on which wells are flowing. The pipeline can blend, but only on an interruptible basis and can only offer to make the service available when details are known of the actual specification from each source each day.

Promoting upstream competition

3.41. The Regulator concludes that a widening of the gas quality specification would potentially be of substantial benefit to many Users and Prospective Users through increasing the number of sources of gas for supply to the DBNGP, increasing competition in the upstream market for gas and reducing costs of gas treatment prior to supply of the DBNGP.

3.42. The key benefit of competition surely is reduction of prices. There is no evidence that existing producers would reduce prices if their processing costs were reduced. As the existing producers also have majority interests in prospective gas fields, nor is there any reason to conclude that bringing these new fields into production would see price reductions as all producers are well aware of prevailing market prices.

3.43. No evidence has been provided to suggest that the introduction of a wider gas specification would increase upstream competition to a greater extent than would be the case if either the operating specification remained as the specification or if the provisions of the Tf Service relating to gas specification were retained. For this reason, Operator has proposed a detailed cost benefit analysis which seeks to deal with this issue, among others. This is discussed in more detail in section 4 of this Submission.

4. COST/BENEFIT ANALYSIS

4.1. Operator and several of its shippers remain concerned about the possible negative impacts of the change in gas quality specifications outlined in the Draft Decision (amendment 15).

4.2. Operator submits that in the interests of all stakeholders, a detailed cost-benefit analysis of the changed specification should be undertaken to determine the net impact of the change. Accordingly, Operator has asked ACIL Tasman for a proposal to conduct such a cost-benefit study, with input from a representative range of stakeholders.

4.3. The Draft Decision makes reference to the Office of Energy's November 1995 Review of the Gas Quality Specification for the DBNGP, which recommended a move to a wider standard. Although the consultative process that led to the recommendation took into account the views of the various stakeholders at that time and the recommendations were based on consensus wherever possible, there were a number of issues on which there was no agreement. Cost impacts were considered, but a full analysis of the costs and benefits of a widening of the specification was not undertaken.

4.4. In the ten years that have passed since the 1995 recommendation, there have been many significant new developments throughout the gas production, delivery and utilisation system, including new gas field discoveries, new field developments, major expansions of large gas users' facilities, new gas users, and changes in technology throughout the system. There has also been a considerably greater community focus on the environmental significance of greenhouse emissions.

4.5. The proposed cost benefit analysis would take a fresh look at the issues that were examined in the earlier studies as well as new issues that have been raised since that time, taking recent developments and the current state of the industry into account.

4.6. Operator has asked ACIL Tasman to prepare a DBNGP Gas Quality Cost-Benefit Issues Paper outlining the range of issues to be examined in the cost-benefit study, and describing their proposed approach to conducting the study. This paper will be submitted to the ERA no later than 2 June 2005. The Issues Paper will highlight some of the key areas where costs may be incurred or savings realised and provide some initial indicative estimates of the magnitude of costs involved in selected areas.

4.7. The initial data gathering stages of the actual study will commence in parallel with the preparation of the Issues Paper. A preliminary outline of the paper is provided in Attachment 1.

4.8. Given the information contained in this submission, Operator considers that this is a process which the Regulator should support in order to being seen to be properly discharging its functions under the Code. However, Operator believes that for the analysis to be effective, it must be a complete analysis.

4.9. Given the time it will take to undertake a proper analysis and the date by which the Regulator has stipulated it wishes to have the approvals process completed, Operator seeks an assurance from the Regulator that it will either not release its next decision until this matter has been fully considered, or defer consideration of the gas specification issue to another time.

Attachment 1 – ACIL proposal

See attached.

25 May 2005

ACIL Tasman
Economics Policy Strategy

ACIL TASMAN PTY LTD
ABN 68 102 652 148
Incorporated in Victoria

PERTH

EXECUTIVE DIRECTOR
Ian Satchwell

Level 12, 191 St Georges Terrace
Perth WA 6000
PO Box 7035
Cloisters Square
Perth WA 6850

TELEPHONE +61 8 9485 0300
FACSIMILE +61 8 9485 0500

perth@aciltasman.com.au
www.aciltasman.com.au

MELBOURNE (HEAD OFFICE)
Level 6, 224-236 Queen Street
Melbourne VIC 3000
TELEPHONE +61 3 9600 3144
FACSIMILE +61 3 9600 3155

CANBERRA
103-105 Northbourne Avenue
Turner ACT 2612
TELEPHONE +61 2 6249 8055
FACSIMILE +61 2 6249 7455

BRISBANE
Level 15, 127 Creek Street
Brisbane QLD 4000
TELEPHONE +61 7 3236 3966
FACSIMILE +61 7 3236 3499

SYDNEY
PO Box 170
Northbridge NSW 1560
TELEPHONE +61 2 9958 6644
FACSIMILE +61 2 8080 8142

DARWIN
2/23 Paspaley Place
Cullen Bay NT 0820
TELEPHONE +61 8 8981 2101
FACSIMILE +61 8 8981 2702

CHINA
7th/F Block C
East Lake Villas 35
Dongzhimenwaidajie
Beijing 100027
China

MALAYSIA
Suite C-16-6, Tower C
Wisma Goshen, Plaza Pantai
No 5, Jalan 4/83A
Off Jalan Pantai Baru
59200 Kuala Lumpur
TELEPHONE +60 3 2287 0178
FACSIMILE +60 3 2287 1178

Anthony Cribb
DBNGP (WA) Transmission Pty Limited
Manager, Regulatory Legal
Level 7
239 Adelaide Terrace
PERTH WA 6000

Dear Anthony

You have requested ACIL Tasman to undertake a cost-benefit analysis of the proposed change in the DBNGP gas quality specification. As agreed, the first step will be to prepare the *DBNGP Gas Quality Cost-Benefit Issues Paper*, for submission to the ERA next week.

A preliminary outline version of the paper is attached. This includes our current thoughts on the process and methodology for the study, as well as an overview of the key issues. As we envision it, the paper itself will go into greater detail, and will provide some initial indicative estimates of the magnitude of costs in selected areas.

Yours sincerely

Ian Satchwell
Executive Director

DBNGP Gas Quality Cost-Benefit Analysis Issues Paper
Preliminary Outline

1. Public Policy Imperative

The impact of the gas quality specification change has broad economic and commercial implications for both producers and consumers of gas that will significantly impact operating and capital costs throughout the gas production delivery and utilisation system. The change also has potential greenhouse gas and general air quality impacts. The current arrangements have been agreed through extensive negotiations with shippers, and existing operations from wellhead to burner tip are already equipped to deal with the current specification. Previous consultative process and studies have not undertaken a thorough cost-benefit analysis of a move to a broader specification. If a change is to be imposed by the ERA, it should only be done after careful analysis of the overall impact of the change on the total system and on the larger community.

2. Issues Summary

Costs and benefits can be grouped into six categories in terms of the nature of the analysis necessary to evaluate them. Each of the categories is discussed below.

Cost Category 1: Cost impact on the overall gas production, delivery, and utilisation system

The fundamental cost issue to be addressed in the cost-benefit analysis is the net cost or net savings resulting from the proposed changes on the entire gas production, delivery and utilisation system. On the surface it would seem that a change in specifications that results in shipping gas with lower heating value and a significantly higher volume of inert gases through the entire pipeline and distribution system and through every user's gas handling and gas combustion equipment may not deliver the optimal cost outcome for the total system.

The most immediately obvious cost is the cost of the greater volumetric capacity throughout the system that will be necessary to deliver the same amount of energy. Additional costs may be incurred by some users to modify gas combustion equipment to handle the gas. Costs associated with reduced reliability of delivery in the near term resulting from reduced capacity as well as the higher costs of future expansion and operation of the pipeline system must also be considered. Those costs must be compared with the status quo alternative whereby higher heating value gas with a lower volume of inert gases would continue to be provided at the source. Presumably some producers will realise significant savings in gas treatment costs under the new relaxed specification. However, with the wider specification costs will be imposed on many more entities in many more locations, where under the status quo costs need be incurred only by a relatively small number of producers in a relatively small number of locations where incremental expenditures are needed to meet the existing standards.

It should be recognised that any cost savings realised by producers must be reflected in reduced prices, otherwise the lower cost is offset by a transfer of wealth to the producer shareholders.

If the analysis indicates that there is a net cost increase resulting from the specification change, then the change in specification can only be justified if the benefits are sufficient to outweigh the net cost increase. The cost analysis should consider cost issues addressed in the 1995 Office of Energy *Review*

of the Gas Quality Specification for the DBNGP and other more recent reviews and identify any significant changes.

Specific cost issues identified to date include the following:

- Increased operating costs associated with shipping higher volumes of gas through the entire delivery system, including distribution systems as well as the pipeline;
- Costs incurred by end users as a result of lost capacity at the outset and the consequences of service provider's inability to meet its obligations under contracts;
- Increased future capital costs for expansion of the pipeline and distribution systems to handle the higher gas volumes;
- Increased operating and capital costs for major gas users due requirements to move larger volumes of gas through their facilities;
- Increased capital and operating costs required for any necessary modifications to combustion equipment or other facilities to accept broader specification gas including higher levels of CO_2 and inerts;
- Current and future operating and capital cost savings realised by producers due to relaxed standards for heating value and increased inerts;
- Cost impacts of reduced reliability or curtailment of pipeline deliveries at peak times resulting from reduced capacity until capacity expansion has been completed.

Cost Category 2: Environmental costs

Shipment of more inert gases through the system to every end user will inevitably mean increased emissions of NO_x in the South West region of the state. It could also mean increased CO_2 emissions from the system in total depending on the alternative means of CO_2 disposal if the status quo specification were maintained. These impacts need to be quantified in a way that allows them to be considered in the overall cost-benefit analysis. This would include any quantifiable compliance costs, where emissions reductions are required as well as the impact of higher emissions levels to the extent that compliance measures do not restore the status quo.

The following cost issues in this category should be addressed:

- Environmental compliance costs incurred by gas users due to higher levels of CO_2 and inerts;
- To the extent that compliance measures do not reduce emissions to the same levels as the status quo alternative, other costs and impacts on the larger community resulting from potential degradation of air quality in the South West region of the state;
- To the extent that a changed competitive environment (see Benefit Category 1) and/or other impacts of the change in specification lead to an increase or decrease in gas consumption, the environmental impact should be recognised.

Cost Category 3: Other costs to government and the wider community

This category includes costs outside the gas system itself, either to the government or the wider community other than environmental costs. It is expected that the costs in this category may be very small relative to the costs considered under categories 1 and 2. In aggregate, however they may be significant enough to warrant inclusion in the overall analysis.

Specific issues to be addressed include:

- Costs incurred by government due to lost tax payments or other revenues resulting from lower levels of gas production or of production of any of the products produced by major gas consumers who are negatively impacted by the change;
- Any other impacts on the broader community including secondary cost impacts that can be attributed to changed business circumstance resulting from the increased costs in the downstream sector, lower costs in the upstream sector, competitive impacts, or reduced reliability.

Benefit Category 1: Changed competitive environment

It has been suggested that relaxing the specifications (or equivalently, reducing costs of production by the amount of the incremental cost that would have been incurred to meet the more stringent specification) will lead to more fields becoming economic to develop resulting in more competition amongst producers to sell gas into the system, leading to lower prices. The cost analysis should shed some objective light on the validity of this contention. If it can be shown that certain producers who are not presently competitive under the more stringent specifications will become competitive directly as a result of the relaxed specification then the contention may be valid. If so, the benefits of lower end prices should be recognised, including the potential for reduction of greenhouse gas emissions if the lower prices lead to a preference for the use of gas over more greenhouse intensive fuels.

While the impact of the increased competition may be difficult to assess precisely, evidence of increased competition would at least be an indication that a portion of the producers' cost savings resulting from the relaxed specification would be more likely to be passed on to the gas users in the form of lower prices. However, it should be noted that if no new competitors come into the market as a result of the specification change, then there is no incremental benefit. Prices may be lower due to the existing producers being in a position to offer lower prices as a result of their reduced costs, but this is taken into account under Cost Category 1.

The history of reserves development over the past ten years while the narrower specification has been in place should be considered in assessing the likely impacts on upstream competition.

While the upstream competition issue has been explicitly cited in the Draft Decision and it warrants careful analysis it should be noted that there is also a possibility that the change in gas quality specifications could alter the competitive dynamics in one or more downstream areas as well. If the delivered price of gas is lower some users may become more competitive in their markets potentially increasing their gas purchase volumes. On the other hand, if the downstream cost resulting from the quality specification change is greater than the upstream savings, downstream prices may be higher, and some users' products may become less competitive. In this case there is potential for loss of existing benefits from the current level of competition. In particular, gas could become less competitive relative to coal for power generation, with the result being reduced gas flows, and increased greenhouse emissions.

In summary, specific issues to consider in this category include:

- Potential reduction in upstream price of gas due to increased competition resulting from the relaxed specification;
- Potential corresponding reduction in downstream price of gas;
- Potential changes in the price of gas resulting from changed levels of downstream competition.

Benefit Category 2: Standardisation benefits

One of the possible benefits referred to in the Draft Decision is the value associated with alignment of specifications across the DBNGP, Parmelia and Goldfields pipelines. Potential benefits cited include greater standardisation of gas-using appliances, increased interchange of gas between pipelines, and facilitation of use of the Mondarra storage facility. These benefits need to be closely examined and quantified.

Benefits in this category include:

- Potential benefit of having the same quality specification on the DBNGP as on Parmelia and Goldfields should be considered from a producer cost standpoint. as well as from pipeline operational standpoint;
- Potential impact on availability and utilisation of Mondarra storage facility;
- Any remaining potential for additional benefits resulting from a wider range of gas appliances being available throughout the state.

Benefit Category 3: Other benefits to government and the wider community

This category includes benefits outside the gas system itself, either to the government or the wider community other than environmental costs.

As in the case of the analogous cost category, it is expected that any benefits in this category may be relatively small, but the possibility that the aggregate may be significant enough again warrants inclusion in the overall analysis.

Specific issues to be addressed include.

- Benefits to government resulting from increased taxes or royalties;
- Other benefits to the broader community, including any secondary economic benefits that can be attributed to changed business circumstance resulting from the increased costs in the downstream sector, lower costs in the upstream sector, competitive impacts, or reduced reliability.

3. Proposed cost-benefit analysis methodology

A more thorough understanding of the full range of costs and benefits will be needed before formulating the details of the cost-benefit analysis methodology. To ensure rigor and objectivity, the analysis will follow the framework and principles for cost-benefit analysis outlined in the Department of Treasury and Finance Project Evaluation Guidelines. Cost-benefit analysis is most commonly used to evaluate the total economic impact of major government supported infrastructure projects, which may have significantly greater secondary economic, social and environmental impacts than a change in pipeline specifications. Nevertheless, the principles that guide such evaluations will be carefully applied to ensure that the results are robust and defensible. One of the most important of these will be to ensure that all costs and benefits are properly measured on an incremental basis, that is, costs and benefits are only those that are incurred or realised as a result of the change in specification. The costs and benefits in the status quo alternative, including the projection of the status quo into the future, must always be used as the base line for all estimates.

Other important considerations include:

- Overall objectivity, balance and rigour

- Transparency, within the limits of confidentiality
- Obtaining input covering the full range of interested parties
- Correct attribution of costs and benefits, and avoiding double counting
- Appropriate recognition of risk and uncertainty
- Excluding costs or benefits that result in private sector earnings in excess of the cost of capital

The cost-benefit equation in this case will be along the following lines:

Net Benefit = Be + Bs + Bg + Xb – (Cd - Su) – Ce – Cg – Xc

Where:

Be is the total reduction in gas cost due to any increased competition.

Bs is the benefit resulting from standardisation of specifications across pipelines.

Bg represents any incremental benefits to government such as increased taxes and royalties.

Xb represents any additional external benefits that may accrue to the larger community

Cd is the total "downstream" cost incurred to deliver and utilise the higher volumes of gas (including higher levels of inerts) in order to extract the required quantity of energy, including any reduction in LPG recovery in the Wesfarmers plant.

Su is the total "upstream" savings realised by producers due to the relaxed specification, including any increase in LPG and other associated liquids recovery.

Ce is the total cost of environmental compliance plus residual environmental degradation after compliance

Cg represents any incremental costs to government incurred in the process of changing and enforcing the new specification

Xc represents any additional costs or negative secondary impacts that may be incurred by the larger community

A simple spreadsheet model would be developed to sum up these categories of costs and benefits over time and calculate their net present value. This will allow evaluation of a range of assumptions and estimates of the costs and benefits and facilitate sensitivity analysis.

Stakeholder estimates would be the primary source of the cost estimates. Where appropriate, additional analysis may be undertaken by ACIL Tasman to refine these estimates or develop alternative estimates.

Confidentiality of any proprietary data provided by stakeholders will be protected. ACIL Tasman would enter into confidentiality agreements with DBNGPT and any other stakeholders who provide proprietary data. Such data could add significant rigor to the analysis, but it could be used only in situations where it can be documented in average or aggregate form so that the details of individual stakeholders' data is not disclosed.

Stakeholder input will also be taken into account in developing estimates of the benefits. However, it is anticipated that ACIL Tasman would use its own data base and expertise to a greater degree in developing estimates of the benefits.