

NATURAL GAS SUPPLY

TO

MURRUMBIDGEE SHIRE

**(Darlington Point and
Coleambally)**

Commercial In Confidence

A Feasibility Study, Financial
Model and System Design
Prepared by Infrapro Pty Limited
P.O. Box 112, Bowral NSW 2576
Ph: 02 4862 4141
March 2003

TABLE OF CONTENTS

	<u>Page No.</u>
1. Executive Summary & Current Situation	3.
2. Project Background	5.
3. System Design Loads	7.
4. Natural Gas Supply from NSW	8.
• Preliminary Design	
• Capital Cost (See Model in Addenda)	
• Assumptions (See Model in Addenda)	
• Financial Model (See Model in Addenda)	
5. Natural Gas Supply from Victoria	9.
• Preliminary Design	
• Capital Cost (See Model in Addenda)	
• Assumptions (See Model In Addenda)	
• Financial Model (See Model in Addenda)	
ADDENDA	10.
PricewaterhouseCoopers	
• Assumptions	
• Financial Model	
• Statement	
Capital Project Services	
• Conceptual Drawings	
• Statement	
AGL Quotation	
APT Email	

1. EXECUTIVE SUMMARY

A comprehensive financial model containing details of revenues from each market segment applicable to the corresponding capital cost of the required infrastructure has been constructed by PricewaterhouseCoopers. This model, due to its numerous options allows for almost unlimited scenarios to be created.

Negotiations have been conducted with those utilities and energy suppliers responsible for the haulage and provision of natural gas from both New South Wales and Victoria. From these discussions key assumptions have been included in the model so as to produce an early result. (Due to the complexity of supply options, these negotiations will continue, only being completed when a supply agreement is signed with the proposed ethanol plant).

Capital costs have been estimated following a site visit to the region and having regard to recent pipe laying costs. Items such as crossing the Murray River and Environmental Impact Statements have been provided with allowances without site inspections.

Delivery charges for each of the market segments have been set at levels similar to those paid for transmission and network charges in other regions.

This project is dominated by the relatively very large energy requirement of the proposed ethanol plant when compared to the other loads. Therefore the delivery charges for Australian Bio Fuels have been estimated so as to be similar to those being proposed for other such plants in other regions.

Sensitivities have been included in the model for:-

- Capital (due to route selection)
- Growth Rate
- Delivery Charges
- Operating Costs
- Discount Rate
- Residual Value

The model concludes that the supply from NSW is far superior to supply from Victoria (due to twice the distance to Victoria, lower available pipeline pressures and the Murray River crossing).

Supply from NSW can produce internal rates of return of greater than 12% for the project provided Australian Pipeline Trust does not require a capital contribution for the Riverina pipeline augmentation.

Negotiations with APT will take some time to conclude as they are conducting detailed investigations. Early discussions indicate that the additional load for the Riverina pipeline may pay for the additional compression at the Burnt Creek offtake (6 km from Juneee).

However in the model an allowance of \$4 million for additional compression has been included in route option 4. This additional capital requirement had the effect of reducing the IRR from an acceptable 12.46% to and unacceptable 6.82%.

The conclusions from this modeling include:-

- NSW is a more viable supply option.
- Capital costs of more than \$10 million begin to adversely effect the project viability
- The ethanol plant would produce more than 85% of the pipeline revenue at \$0.70 per GJ and therefore the supply agreement for that plant is critical to the project.

The modeling shows that under certain assumptions the project could be viable.

To further progress the possibility of constructing the project the following needs to be undertaken:-

- Talk to potential infrastructure owners including:-
 - APT
 - AGL
 - Origin Energy
 - Murrumbidgee Shire Council (stand alone)
- Hold preliminary negotiations with Australian Bio Fuels regarding delivery charges
- Decide whether the project will be stand alone or offered as an incremental business to an existing energy organization.
- Continue the negotiations with APT

Current Situation (May 2003)

The Federal Government has decided to extend its subsidy of ethanol as a fuel additive for the next five years, before the subsidy is gradually reduced from 2008 to 2012.

Discussions with ethanol plant proponents in other areas of Australia advise this decision should give them the surety to continue with their projects and it could be expected the same situation would apply to the Coleambally project.

AGL Energy Sales and Marketing have provided a quotation to supply natural gas ex the Yoogali take off (copy attached) at a price of \$3.277 per GJ variable and \$73,368 per month fixed for year 1 ranging to \$84,433 per month fixed for year 3.

Depending on the MDQ and ACQ this should translate to a price of approximately \$4.219 over the period. With a total delivery charge of \$0.90 per GJ for the new proposed pipeline and network, the new ethanol plant could expect to purchase gas in the \$5.20 to \$5.50 per GJ range depending on their negotiations with a gas supply agreement.

The price quoted by AGL does not allow for any Riverina pipeline upgrade or additional operating and maintenance costs associated with the increased load which APT may charge them.

Advice from APT (copy attached) indicates an additional \$4 million in capital costs and \$175,000 per annum in operating and maintenance cost will be incurred in supplying the additional load.

APT are yet to set a new haulage tariff due to these costs, however the final price for gas delivered to Coleambally for the ethanol plant should be similar to gas price quotations being obtained by other plants in NSW.

2. PROJECT BACKGROUND

Natural gas arrived in September 1993 via the new Riverina Pipeline to the City of Griffith, the pipeline also supplied the towns of Junee, Coolamon, Narrandera and Leeton.

Investigations into extending the supply to Darlington Point at this stage were completed and this work was intended to co-incide with the development of agricultural product processing in the area.

Unfortunately the construction of new plant did not occur in Darlington Point but tended to develop close to Griffith where a natural gas supply existed. Due to the lack of industrial load the natural gas network supplying Griffith failed to extend further south than Willbriggie.

With the load increasing particularly from industrial customers around Griffith the secondary main running to Willbriggie is now approaching its delivery potential, and would have difficulty in supplying any meaningful load at Darlington Point and be completely inadequate to supply Coleambally.

Even if it were physically possible to supply further to the south from Willbriggie the capital cost associated with the existing network upgrade and extension when compared to the relatively small load makes the project uneconomic.

Since 1993 there also have been major changes to natural gas transmission and distribution regulations that has tended to restrict the development of new greenfields projects.

Recently in 2002 Australian Bio Fuels Pty Ltd. Contacted Murrumbidgee Shire Council seeking details for the supply of a considerable volume of natural gas to a proposed ethanol plant to be constructed at Coleambally approximately 67 kilometers south of Griffith.

This plant combined with the existing domestic, commercial and industrial load at Darlington Point and Coleambally could now make this project viable.

Provided a certain gas price delivered to the new ethanol plant was low enough to make the plant viable but high enough to provide revenue to a new delivery system running from Coleambally to Griffith also to be viable, then the supply of natural gas to Darlington Point and Coleambally, sought since 1993 could now prove to be an economic reality.

Because of its high volume requirements the ethanol plant is directly linked to the new delivery system and the success of one is dependent on the other, the advantage of this to a potential owner, operator of the delivery system is that a suitable natural gas contract to this foundation customer can provide volume surety to underwrite the pipeline network project.

Although the ethanol plant is very large compared to the other loads, all existing loads have been included in the delivery system design and in the financial modeling carried out by PricewaterhouseCoopers.

3. SYSTEM DESIGN LOADS

SYSTEM DESIGN LOADS

Location	Market	ACQ Tj/A	Load Factor	M3/hr
Darlington Point	Domestic	8.4	7	176.6
	I & C Tariff	1.2	4	14.4
	Contract	17	2	102.1
	<u>Total</u>	<u>26.6</u>		<u>293.1</u>
Coleambally	Domestic	5.9	7	124
	I & C Tariff	3.9	4	46.86
	Contract	1026	2	6164.38
	Total	1037		6335.24
<u>Murrumbidgee</u>	<u>Total</u>	<u>1063.4</u>		<u>6628.34</u>

4. NATURAL GAS SUPPLY FROM NSW

Preliminary Transmission Design

The closest existing natural gas supply to Darlington Point and Coleambally is the Australian Pipeline Trust's Riverina pipeline terminating at the Yoogali trunk receiving station, approximately 4 kilometers east of Griffith. An exact route to Darlington Point and Coleambally is yet to be determined and an environmental impact statement will be required as part of the proposed Murrumbidgee pipeline licencing process. However early site assessment indicates very good laying conditions with an expected run of approximately 67 kilometers.

Discussions with Australian Pipeline Trust indicate that they would be able to supply the required 1,063 TJ.

Australian Pipeline Trust also advises that their current contract minimum pressure at Yoogali is 1750 kpa however 2750 kpa may be available. The higher supply pressure would be of great assistance in reducing the capital cost of the pipeline (Yoogali to Darlington Point could see the pipeline diameter reduced from 200 NB to 150 NB).

Both these options will be used in the financial models but will need to be confirmed in the final gas supply contract with Bio Fuels together with their proposed ACQ, MDQ and MHQ (Annual Contract Quantity, Maximum Daily Quantity and Maximum Hourly Quantity.)

Preliminary Network Design

Darlington Point and Coleambally townships will be reticulated with a 500 kpa PE distribution system laid on one side of all developed streets. A backbone main of 75mm and 50 mm PE will run through each town with 40mm PE mains forming a matrix over the remainder. Customers will be connected via short and long services.

Approximately length of mains.

5000 M	75mm PE	500 kpa
5000 M	50 mm PE	500 kpa
15,000 M	40 mm PE	500 kpa

5. NATURAL GAS SUPPLY FROM VICTORIA

Preliminary Transmission Design

In Victoria the closest natural gas pipeline is Gasnet's Chiltern Valley pipeline terminating at Koonoomoo approximately 151 kilometers from Darlington Point and approximately 118 kilometers from Coleambally. To supply both these towns would require a pipeline from Coleambally to Koonoomoo and a PE lateral from Darlington Point to Coleambally. Envestra do have a secondary main running 31 kilometers from Koonoomoo to Finley this may be able to be upgraded to save some of the distance, but investigations at this stage suggest this may be too expensive.

Gasnet's principal engineer advises that the Koonoomoo offtake is capable of delivering 6.4 Tj/day with 3.9 Tj/day uncommitted. While this would appear to be sufficient for the Murrumbidgee needs the minimum supply pressure is only 1400 kpa.

This lower supply pressure means the steel pipeline from Koonoomoo to Coleambally would need to be a combination of 250 NB and 200 NB over a 118 kilometer length this pipeline would be more than double the cost of the NSW pipeline, plus the requirement for the 33 kilometer PE lateral.

Preliminary Network Design

Darlington Point and Coleambally townships will be reticulated with a 500 kpa PE distribution system laid on one side of all developed streets. A backbone main of 75 mm and 50 mm PE will run through each town with 40 mm PE mains forming a matrix over the remainder. Customers will be connected via short and long services.

The supply from the Coleambally TRS to the Darlington Point DRS will be via a 34 km 1050 kpa 100 mm PE main.

Approximate length of mains:-

34,000 M	110 mm PE	1050 kpa
5,000 M	75 mm PE	500 kpa
5,000 M	50 mm PE	500 kpa
15,000 M	40 mm PE	500 kpa

Recalculation of Natural Gas - Revenue Sheet

Delivery Charge Option Selected (from output sheet)
 Route Option Selected (from output sheet)

- 1 Option 1 - Base Case
- 2 Option 2 - NSW Supply, 1750 MPa, no Riventha Upgrade

Transmission Tariff (\$/GJ)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Base Case	312	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693
Bio Fuels	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Contract	2	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84
Tariff	4	11	18	27	38	50	57	64	69	75	75	76	77	78	78	79	80	81	81	82	82
Total Pipeline Delivery Charges (\$'000)	369	788	795	804	818	827	834	841	848	852	853	854	855	855	855	855	855	857	858	858	859
Network (\$/GJ)																					
Bio Fuels	89	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
Contract	106	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Tariff	7	19	31	46	64	86	98	110	119	128	129	130	132	133	134	136	137	138	138	140	141
Total Network Delivery Charges (\$'000)	202	305	397	442	433	452	462	473	485	488	490	491	492	493	494	495	496	497	498	499	500
Total Delivery Charges (\$'000)	571	1,193	1,192	1,246	1,245	1,280	1,290	1,317	1,331	1,342	1,347	1,349	1,352	1,354	1,356	1,358	1,360	1,362	1,364	1,364	1,367

Recalculation of Natural Gas - Operating Expenditure Sheet

Operating Expenses (as % total capital cost)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Option 1																					
Option 2																					
Option 3																					
Option Selected (from output sheet)																					
Total Operating Expenses (\$'000)	600	602	604	606	608	610	612	614	616	618	619	619	619	619	619	619	619	619	619	619	619

Capital Expenses for selected route	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Option 1 - Supply from Victoria	20,010	63	33	63	63	63	63	52	52	52	52	52	52	52	52	52	52	52	52	52	52
Option 1 - Base Case	20,010	63	63	63	63	63	63	52	52	52	52	52	52	52	52	52	52	52	52	52	52
Cumulative Capital Expenses for selected route and cost option	20,010	20,072	20,135	20,198	20,261	20,323	20,376	20,428	20,481	20,533	20,585	20,637	20,689	20,741	20,793	20,845	20,897	20,949	20,999	21,051	21,103
Cumulative Capital Expenses for selected route and cost option excluding capital cost of flowline Upgrade	20,010	20,072	20,135	20,198	20,261	20,323	20,376	20,428	20,481	20,533	20,585	20,637	20,689	20,741	20,793	20,845	20,897	20,949	20,999	21,051	21,103

Reconciliation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

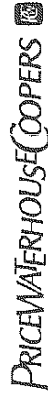
Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Summary Output

Key Assumptions Adopted

Route 3
 Growth Rate in Premises 1
 Operating Expenditure % Capital 1
 Delivery Charge Variations 1
 Real Discount Rate for NPV 8%
 Residual Value Yes
 Capital Cost Benefitters 1

Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 0% Growth in Premises
 1% of Capital
 Option 1 - Base Case
 Option 1 - Base Case



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	9,485	33	33	33	33	33	28	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0
Operating Costs	95	95	96	96	96	97	97	97	97	98	98	98	98	98	98	98	98	98	98	98	98	98
Total Costs	9,580	128	129	129	129	130	125	125	125	116	98	98	98	98	98	98	98	98	98	98	98	98
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,214	1,241	1,273	1,289	1,306	1,317	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328
Total Capital Cost Revenue	-9,485	-33	-33	-33	-33	-33	-28	-28	-28	-28	0	0	0	0	0	0	0	0	0	0	0	0
NPV (\$'000)	3.7%																					
IRR	13.17%																					

Recalculation of Natural Gas - Output Sheet

Route Options

- Option 1 - Supply from Victoria
- Option 2 - NSW Supply, 1750 kPa, no Rivernina Upgrade
- Option 3 - NSW Supply, 2750 kPa, no Rivernina Upgrade
- Option 4 - NSW Supply, 1750 kPa, with Rivernina Upgrade

Delivery Charge Options

- Option 1 - Base Case
- Option 2 - Base +10%
- Option 3 - Base +20%
- Option 4 - Base -10%
- Option 5 - Base -20%

Operating Cost Options

- 5% of Capital
- 3% of Capital
- 1% of Capital

Residual Value Options

- Yes
- No

Capital Cost Options

- Option 1 - Base Case
- Option 2 - Base +10%
- Option 3 - Base +20%
- Option 4 - Base -10%
- Option 5 - Base -20%

Growth in Premises Options

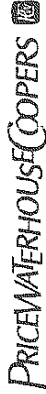
- 0% Growth in Premises
- 1% Growth in Premises
- 2% Growth in Premises

Summary Output

Key Assumptions Adopted

Route	2
Growth Rate in Premises	1
Operating Expenditure % Capital	3
Delivery Charge Variations	1
Real Discount Rate for NPV	8%
Residual Value	Yes
Capital Cost Sensitivities	3

Option 2 - NSW Supply, 1750 kPa, no Rivernina Upgrade
 0% Growth in Premises
 1% of Capital
 Option 1 - Base Case
 Option 1 - Base Case



Costs and Revenues (real \$'000)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	9,825	33	33	33	33	33	33	28	28	28	28	0	0	0	0	0	0	0	0	0	0	0
Operating Costs	98	99	99	99	99	100	100	100	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Total Costs	9,923	132	132	132	133	133	128	128	129	129	129	101	101	101	101	101	101	101	101	101	101	101
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,214	1,241	1,273	1,289	1,305	1,317	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328
Total Costs less Revenue	-9,352	1,140	1,059	1,061	1,018	1,148	1,181	1,177	1,188	1,199	1,217	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227
NPV (\$'000)	3,397																					
IRR	12.65%																					

Recalculation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

Route 3
 Growth Rate in Premises 1
 Operating Expenditure % Capital 2
 Delivery Charge Variations 1
 Real Discount Rate for NPV 3%
 Residual Value Yes
 Capital Cost Sensitivities 1

Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 0% Growth in Premises
 3% of Capital
 Option 1 - Base Case
 Option 1 - Base Case



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	9,485	33	33	33	33	33	33	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
Operating Costs	285	286	287	288	289	290	290	291	292	293	293	293	293	293	293	293	293	293	293	293	293	293
Total Costs	9,770	319	320	321	322	323	323	318	319	320	320	320	320	320	320	320	320	320	320	320	320	293
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	386	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,181	1,224	1,241	1,273	1,289	1,305	1,317	1,324	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328
Total Cashless Revenue	3,399	851	871	893	919	950	971	986	997	1,007	1,015	1,025	1,035	1,045	1,055	1,065	1,075	1,085	1,095	1,105	1,115	1,120
NPV (\$'000)	1,469																					
IRR	10.65%																					

Rectification of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Rivernia Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Rivernia Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Rivernia Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

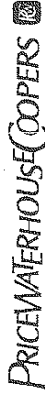
Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

Route 3
 Growth Rate in Premises 2%
 Operating Expenditure % Capital 2%
 Delivery Charge Variations 1%
 Real Discount Rate for NPV 9%
 Residual Value Year 1
 Capital Cost Sensibilities

Option 3 - NSW Supply, 2750 kPa, no Rivernia Upgrade
 1% Growth in Premises
 3% of Capital
 Option 1 - Base Case
 Option 1 - Base Case



Costs and Revenues (resh. \$'000)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	9,662	35	35	36	37	37	37	32	33	34	34	4	4	4	4	4	4	4	4	4	4	5
Operating Costs	290	291	292	293	294	295	296	297	298	299	299	299	299	300	300	300	300	300	300	300	300	301
Total Costs	9,952	325	327	333	331	333	329	334	332	333	333	304	304	304	304	304	304	305	305	305	305	305
Transmission Revenue	369	788	795	804	815	827	834	841	846	852	852	852	853	854	855	855	856	857	858	859	859	859
Network Revenue	202	385	397	412	430	452	464	476	485	494	495	496	496	498	499	500	502	503	504	506	507	507
Total Revenue	571	1,173	1,192	1,216	1,243	1,280	1,308	1,317	1,331	1,345	1,347	1,349	1,351	1,354	1,356	1,358	1,364	1,364	1,364	1,364	1,364	1,367
Total Costless Revenue	9,381	847	865	887	914	941	970	982	998	1,012	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014

NPV (\$'000) **1,369**
 IRR **10.50%**

Reficultation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 5% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

Route 2
 Growth Rate in Premises 2
 Operating Expenditure % Capital 2
 Delivery Charge Variations 1
 Real Discount Rate for NPV 9%
 Residual Value Yes
 Capital Cost Sensitivities 1

Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade

1% Growth in Premises

3% of Capital

Option 1 - Base Case

0% Growth in Premises

Option 1 - Base Case



Costs and Revenues (real \$'000)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	10,002	35	35	36	37	37	37	32	33	34	34	4	4	4	4	4	4	4	4	4	5	
Operating Costs	300	301	302	303	304	305	306	307	308	309	310	310	310	310	310	310	310	310	310	311	311	
Total Costs	10,302	336	337	339	341	343	339	340	342	344	344	344	344	344	344	344	344	344	344	345	345	
Transmission Revenue	369	788	795	804	815	827	834	841	846	852	852	852	853	854	855	855	856	857	858	859	859	
Network Revenue	202	385	397	412	430	452	464	476	485	494	495	496	496	498	499	500	502	503	504	506	507	
Total Revenue	571	1,173	1,192	1,216	1,245	1,279	1,298	1,317	1,323	1,345	1,347	1,348	1,349	1,352	1,354	1,356	1,358	1,360	1,362	1,364	1,367	11,631
Total Cash (less Revenue)	-9,731	837	854	877	898	927	958	977	999	1,022	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	11,631

NPV (\$'000) **906**

IRR **9.97%**

Refuelling of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

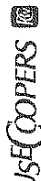
Option 1 - Base Case

Key Assumptions Adopted

- Route 2
- Growth Rate in Premises 1
- Operating Expenditure % Capital 1
- Delivery Charge Variations 1
- Real Discount Rate for NPV 5%
- Residual Value Yes
- Capital Cost Sensitivities 1

Costs and Revenue (cash \$'000)

Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 0% Growth in Premises
 5% of Capital
 Option 1 - Base Case



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value		
Capital Costs	9,825	33	33	33	33	33	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0	
Operating Costs	491	493	495	496	498	500	501	502	504	505	505	505	505	505	505	505	505	505	505	505	505	505	0
Total Costs	10,316	526	528	533	537	543	549	550	551	553	556	558	560	562	564	566	568	570	572	574	576	578	580
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,214	1,241	1,270	1,289	1,305	1,317	1,328	1,336	1,343	1,348	1,352	1,356	1,359	1,362	1,364	1,366	1,368	1,370	1,372	1,374
Total Costless Revenue	-9,745	646	663	684	710	741	768	785	795	801	805	808	811	813	815	817	819	821	823	825	827	829	831
NPV (\$'000)	-1,382																						
IRR	7.448%																						

Reduction of Natural Gas - Output Sheet

Route Options

- Option 1 - Supply from Victoria
- Option 2 - NSW Supply, 1750 kPa, no Riverrina Upgrade
- Option 3 - NSW Supply, 2750 kPa, no Riverrina Upgrade
- Option 4 - NSW Supply, 1750 kPa, with Riverrina Upgrade

Operating Cost Options

- 5% of Capital
- 3% of Capital
- 1% of Capital

Residual Value Options

- Yes
- No

Growth in Premises Options

- 0% Growth in Premises
- 1% Growth in Premises
- 2% Growth in Premises

Delivery Charge Options

- Option 1 - Base Case
- Option 2 - Base +10%
- Option 3 - Base +20%
- Option 4 - Base -10%
- Option 5 - Base -20%

Capital Cost Options

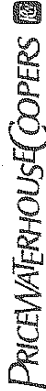
- Option 1 - Base Case
- Option 2 - Base +10%
- Option 3 - Base +20%
- Option 4 - Base -10%
- Option 5 - Base -20%

Summary Output

Key Assumptions Adopted

Route	4
Growth Rate in Premises	1
Operating Expenditure % Capital	2
Delivery Charge Variations	1
Real Discount Rate for NPV	3%
Residual Value	Yes
Capital Cost Sensitivities	1

Option 4 - NSW Supply, 1750 kPa, with Riverrina Upgrade
 0% Growth in Premises
 3% of Capital
 Option 1 - Base Case
 Option 1 - Base Case



Costs and Revenues (real \$'000)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	13,485	33	33	33	33	33	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0	0
Operating Costs	285	286	287	288	289	290	290	291	292	293	293	293	293	293	293	293	293	293	293	293	293	293
Total Costs	13,770	319	320	321	321	323	318	319	320	321	321	323	323	323	323	323	323	323	323	323	293	293
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,234	1,241	1,273	1,289	1,305	1,317	1,324	1,328	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
Total Contribution Revenue	23,950	853	871	893	919	950	971	986	997	1,007	1,015	1,025	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035	11,502

NPV (\$'m) **2,631**
 IRR **6.84%**

Reticulation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

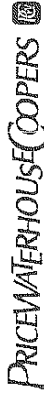
Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

- Route Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade
- Growth Rate in Premises 0% Growth in Premises
- Operating Expenditure % Capital 5% of Capital
- Delivery Charge Variations Option 1 - Base Case
- Real Discount Rate for NPV 5%
- Residual Value Yes
- Capital Cost Scaled/ies Yes



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	13,485	33	33	33	33	33	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
Operating Costs	474	476	478	479	481	483	484	485	487	488	488	488	488	488	488	488	488	488	488	488	488	488
Total Costs	13,959	510	511	512	514	516	516	513	515	516	516	516	516	516	516	516	516	516	516	516	516	488
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,214	1,241	1,273	1,289	1,306	1,317	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328
Total Costs less Revenue	13,388	663	689	701	727	757	777	792	802	812	816	816	816	816	816	816	816	816	816	816	816	816

NPV (\$'000) **4,339**

IRR **4.71%**

Reticulation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

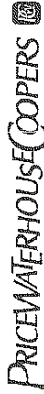
Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base + 20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

- Route Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade
- Growth Rate in Premises 0% Growth in Premises
- Operating Expenditure % Capital 5% of Capital
- Delivery Charge Variations Option 1 - Base Case
- Real Discount Rate for NPV 5%
- Residual Value Yes
- Capital Cost Scaled/ies Yes



Costs and Revenues (repl. \$'000)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	13,485	33	33	33	33	33	33	28	28	28	28	0	0	0	0	0	0	0	0	0	0	0
Operating Costs	474	476	478	479	481	483	484	485	487	488	488	488	488	488	488	488	488	488	488	488	488	488
Total Costs	13,959	510	511	512	514	516	516	513	515	516	488	488	488	488	488	488	488	488	488	488	488	488
Transmission Revenue	369	788	795	803	813	825	831	837	841	845	845	845	845	845	845	845	845	845	845	845	845	845
Network Revenue	202	384	396	411	428	448	458	469	476	483	483	483	483	483	483	483	483	483	483	483	483	483
Total Revenue	571	1,172	1,191	1,214	1,241	1,273	1,289	1,306	1,317	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	1,328	8,313
Total Costs less Revenue	13,388	663	689	701	727	757	777	782	802	812	810	810	810	810	810	810	810	810	810	810	810	8,540

NPV (\$'000) **4,339**

IRR **4.71%**

Recultivation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

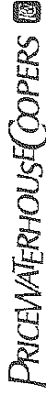
Summary Output

Key Assumptions Adopted

Route 1
 Growth Rate in Premises 1
 Operating Expenditure % Capital 3
 Delivery Charge Variations 1
 Real Discount Rate for NPV 8%
 Residual Value Yes
 Capital Cost Sensitivities 1

Option 1 - Supply from Victoria
 0% Growth in Premises
 1% of Capital
 Option 1 - Base Case

Option 1 - Base Case



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value		
Capital Costs	20,010	200	201	201	202	203	203	204	204	205	205	205	205	205	205	205	205	205	205	205	205	205	0
Operating Costs	268	268	268	265	265	266	266	266	267	267	268	268	268	268	268	268	268	268	268	268	268	268	205
Total Costs	20,278	468	469	466	466	472	472	472	474	474	476	476	476	476	476	476	476	476	476	476	476	476	205
Transmission Revenue	373	797	810	826	845	868	879	890	898	906	906	906	906	906	906	906	906	906	906	906	906	906	906
Network Revenue	209	401	423	451	483	522	541	560	574	587	587	587	587	587	587	587	587	587	587	587	587	587	587
Total Revenue	582	1,198	1,233	1,277	1,328	1,390	1,420	1,450	1,472	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493
Total Post-tax Revenue	19,809	703	969	1,012	1,064	1,123	1,164	1,194	1,216	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,431
NPV (\$'000)	-6,805																						
IRR	4.96%																						

Refuelling of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

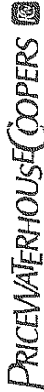
Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

- 1 Route
- 2 Growth Rate in Premises
- 3 Operating Expenditure % Capital
- 4 Delivery Charge Variations
- 5 Real Discount Rate for NPV
- 6 Residual Value
- 7 Capital Cost Sensitivities

- 8 Option 1 - Supply from Victoria
- 9 1% Growth in Premises
- 10 3% of Capital
- 11 Option 1 - Base Case
- 12 Option 1 - Base Case



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	20,344	65	67	68	69	70	61	62	63	63	65	8	8	8	8	8	8	8	8	8	8	9
Operating Costs	610	612	614	616	618	620	622	624	626	628	628	628	628	629	629	629	629	630	630	630	630	630
Total Costs	20,954	678	681	684	688	691	683	686	689	693	736	636	637	637	638	638	638	638	638	639	639	639
Transmission Revenue	373	798	811	828	848	872	885	899	908	918	920	921	922	924	925	927	928	930	931	931	933	933
Network Revenue	209	401	424	453	488	529	552	574	591	608	610	613	615	618	620	623	625	628	631	633	633	633
Total Revenue	581	1,199	1,235	1,281	1,336	1,402	1,437	1,473	1,499	1,526	1,536	1,534	1,538	1,542	1,546	1,550	1,554	1,558	1,563	1,566	1,566	1,566
Total Costless Revenue	28,373	827	855	897	949	1,011	1,054	1,097	1,139	1,181	1,223	1,265	1,307	1,349	1,391	1,433	1,475	1,517	1,559	1,601	1,643	1,685
NPV (\$'000)	-11,854																					
IRR	1.63%																					

Reticulation of Natural Gas - Output Sheet

Route Options
 1 Option 1 - Supply from Victoria
 2 Option 2 - NSW Supply, 1750 kPa, no Riverina Upgrade
 3 Option 3 - NSW Supply, 2750 kPa, no Riverina Upgrade
 4 Option 4 - NSW Supply, 1750 kPa, with Riverina Upgrade

Operating Cost Options
 1 5% of Capital
 2 3% of Capital
 3 1% of Capital

Residual Value Options
 1 Yes
 2 No

Growth in Premises Options
 1 0% Growth in Premises
 2 1% Growth in Premises

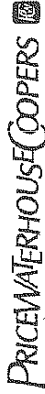
Delivery Charge Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Capital Cost Options
 1 Option 1 - Base Case
 2 Option 2 Base +10%
 3 Option 3 Base +20%
 4 Option 4 Base -10%
 5 Option 5 Base -20%

Summary Output

Key Assumptions Adopted

Route 1
 Growth Rate in Premises 1
 Operating Expenditure % Capital 1
 Delivery Charge Variations 1
 Real Discount Rate for NPV 9%
 Residual Value Yes
 Capital Cost Sensibilities 1
 Costs and Revenues (crak, \$'000)



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Residual Value	
Capital Costs	20,010	63	63	63	63	63	63	52	52	52	52	0	0	0	0	0	0	0	0	0	0	0
Operating Costs	1,000	1,004	1,037	1,010	1,013	1,016	1,019	1,021	1,024	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Total Costs	21,010	1,066	1,100	1,073	1,076	1,079	1,074	1,074	1,077	1,079	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077
Transmission Revenue	373	797	810	826	845	868	879	890	898	906	906	906	906	906	906	906	906	906	906	906	906	906
Network Revenue	209	401	423	451	483	522	541	560	574	587	587	587	587	587	587	587	587	587	587	587	587	587
Total Revenue	582	1,198	1,233	1,277	1,329	1,390	1,420	1,450	1,472	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493
Total Cashless Revenue	20,439	111	164	216	253	310	349	377	396	414	417	417	417	417	417	417	417	417	417	417	417	417
NPV (\$'000)	-16,523																					
IRR	3.15%																					

24 March 2003

Mr David Adam
Infrapro Pty. Limited
PO Box 112
BOWRAL NSW 2576

PricewaterhouseCoopers
ABN 52 780 433 757

215 Spring Street
MELBOURNE VIC 3000
GPO Box 1331L
MELBOURNE VIC 3001
DX 77 Melbourne
Australia
www.pwcglobal.com/au
Telephone 61 3 8603 1000
Facsimile 61 3 8603 6444

Dear David

Modelling of Gas to Murrumbidgee Shire

As requested PricewaterhouseCoopers (PwC) has prepared the attached model which analyses the cost and revenues associated with the provision of gas to Murrumbidgee Shire from the existing transmission systems. The model allows a number of different scenarios to be reviewed.

Features of the model are:

- information and options may only be entered in the yellow cells. The rest of the model is protected;
- all figures and interest rates are expressed in real terms.

We understand is intended for use by yourself and the Murrumbidgee Shire.

All base data used in the model has been provided by yourself including information relating to unit costs, customer numbers, average usage and pipe diameters and lengths. PricewaterhouseCoopers has not reviewed these assumptions and expresses no opinion on their reasonableness or otherwise.

Data may be entered in the yellow shaded cells to undertake sensitivity analysis however PricewaterhouseCoopers must undertake all model coding changes and data input outside of the yellow shaded cells. This applies unless specific authorisation is given by PricewaterhouseCoopers for other parties to alter the model coding and data input or output.

In using the model, it should be noted that the residual value calculation is based on the value of the cash flows in year 20 occurring in perpetuity. To the extent that this approach will exclude capital expenditure that may be required to replace or repair the system, the residual value may therefore be overstated slightly.



Limitations on Liability

This model has been subject to normal checking procedures but has not been formally audited by PricewaterhouseCoopers. Recipients should therefore carry out their own due diligence. No representation, warranty or undertaking (expressed or implied) is made in relation to the model. No responsibility is taken or accepted by PricewaterhouseCoopers for the adequacy, completeness, mathematical accuracy or consistency of the model, the assumptions on which it is based, or the appropriateness of any outputs of the model, and all liability therefore is expressly excluded. Anyone using the model does so at their own risk and no responsibility is accepted for any losses which might result from such use directly or indirectly.

Please contact Paul Liggins on 03 8603 4172 if you have any queries on this model.

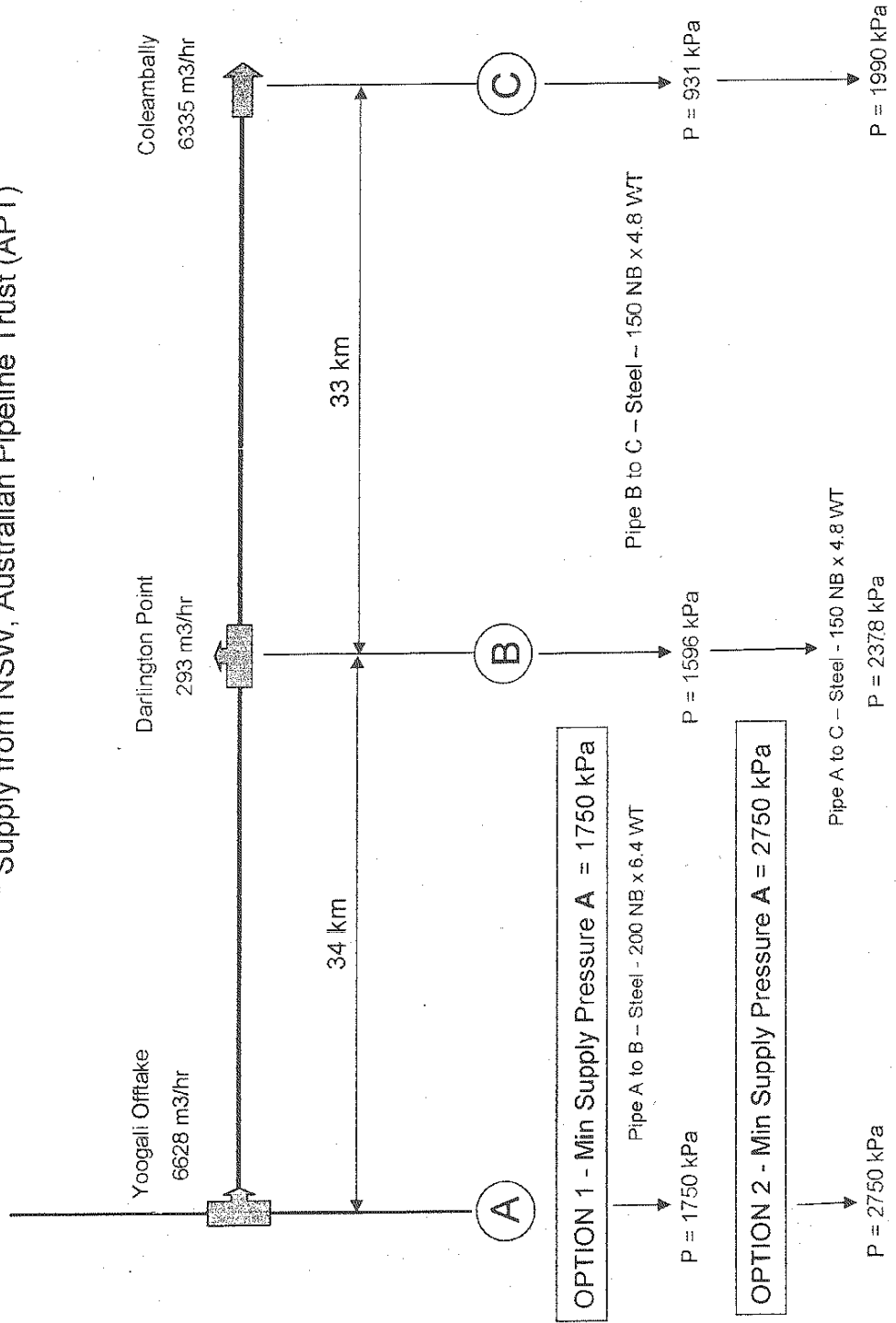
Yours sincerely

A handwritten signature in black ink, appearing to read 'R Southern'.

Robert Southern
Partner
Economic and Regulatory Studies Unit

Natural Gas Supply to Darlington Point and Coleambally:-

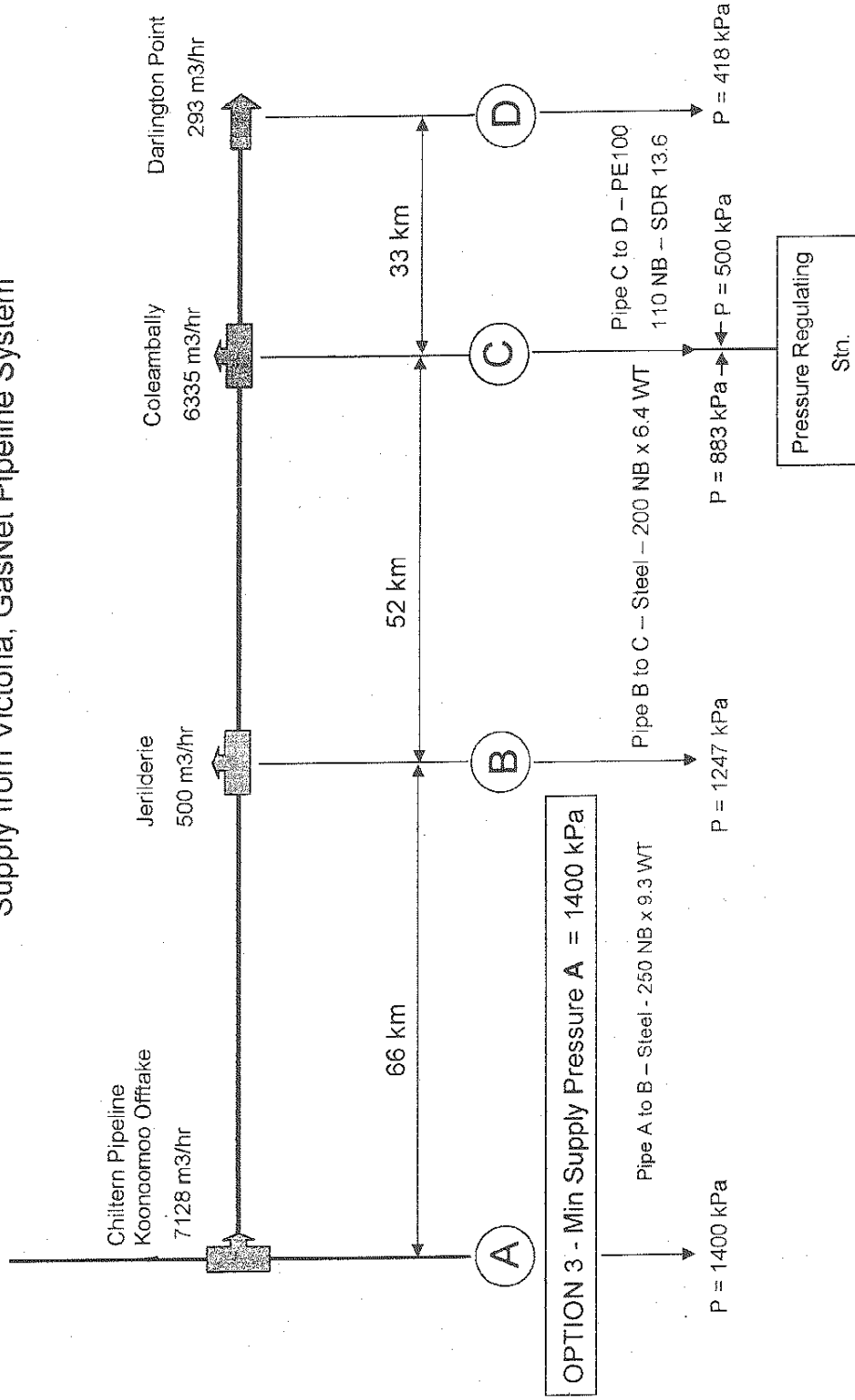
* Supply from NSW, Australian Pipeline Trust (APT)



Note! All steel pipe to be to API 5L -- Grade X42
The design Max Allowable Operating Pressure of pipe A-C
must not be less than that of the APT Disaliner

Natural Gas Supply to Darlington Point and Coleambally:-

* Supply from Victoria, GasNet Pipeline System



Note! All steel pipe to be to API 5L - Grade X42
The design Max Allowable Operating Pressure of pipe A-C
must match that of the Chiltern Pipeline



Capital Project Services Pty Ltd
Investigation, Engineering & Management of Pipeline & Energy Projects.

8 March 2003

Mr David Adam,
Infrapro Pty Limited,
PO Box 112,
Bowral, NSW, 2576

Dear David,

Pipe Sizing for alternate gas supply options-
Murrumbidgee Shire.

I have studied the data and supply options you provided for a natural gas supply to the townships of Darlington Point and Coleambally from both the NSW Australian Pipeline Trust and the Victorian GasNet pipeline systems.

The results are tabulated on the attachments (2) to this letter and will be self explanatory.

Unfortunately it would appear, because of the low inlet pressure available in combination with a much greater pipeline length, that a supply from Victoria would be prohibitively expensive compared with that from NSW.

I trust that this data is sufficient for you at this time. If you have any further queries I would be pleased to carry out detailed analysis and provide further advice as necessary.

Yours faithfully,

E. T. Davis
FIE (Aust). CPE

Attached:-
Gas load and pipelines sizing tabulations.

COMMERCIAL IN CONFIDENCE

Yoogali Takeoff

Yoogali

AGL Energy Sales & Marketing Limited Indicative Gas Supply Price

ACQ	990 TJ		
MDQ	3550 GJ		
MHQ	252 GJ		
Commencement Date	1/08/2004		
Termination Date	31/07/2006		
Term	24 months plus extension, if any, in accordance with clause 11		
Gas Supply Price			
Variable Charge	\$3.277 /GJ		
Fixed Charge and Network Charge (\$/mth)			
<u>Period Starting</u>		<u>Fixed Charge</u>	<u>Network Charge</u>
1/08/2004		\$72,368 /mth	'At Cost on the above MDQ and ACQ'
1/01/2005		\$77,739 /mth	'At Cost on the above MDQ and ACQ'
1/01/2006		\$83,433 /mth	'At Cost on the above MDQ and ACQ'

Parties

Customer: Yoogali Takeoff ABN 0
of: Yoogali

Supplier: AGL Energy Sales & Marketing Limited ABN 18 076 092 067
of: 181-187 First Avenue, Five Dock NSW 2046

Offer

Supplier offers to supply gas to the Customer on the terms and conditions set out below.

Offer Terms and Conditions

1. The offer price is based on the MDQ, MHQ and ACQ set out above and the Customer must not take Gas in excess of the MDQ, MHQ and ACQ.
2. The Customer may request a variation to the MDQ, MHQ and/or the ACQ. The Supplier will advise the Customer in writing of any change in the Gas Supply Price or other terms and conditions. If the Customer accepts the proposed variation, the relevant quantity(s) shall be varied as requested and the variation in the Gas Supply Price as notified by the Supplier shall apply.
3. Decreases in MDQ must be notified at least two months prior to the commencement of the Contract Year.
4. Variable Charges are escalated at 100% of CPI at 1 January of each year. CPI is defined in clause 12.
5. Overrun charges will apply according to the Supplier's overrun procedure as notified to the Customer in Schedule 2.
6. The Customer must pay a minimum bill of 80% of ACQ each Contract Year.
7. Prices are exclusive of Goods and Services Tax (GST). GST will be in addition to the prices quoted. Any new or varied fees, taxes, imposts or levies will be passed on at cost. Such new fees and taxes include but are not restricted to Goods and Services Tax, Greenhouse or Carbon tax.
8. The offer reference date is: 1/01/2003
9. The offer is open until 5 pm on: - 25/04/03.

.David Adam

From: <psydney@pipelinetrust.com.au>
To: <dadamburradoo@bigpond.com>
Sent: Monday, 12 May 2003 9:38 AM
Subject: Coleambally Project

Agility Management are proceeding with their assessment of the capital and operating costs for the Coleambally project. While there are no firm details of the costs at this stage, my understanding is that the capital costs required will be in the order of \$4m with operating and maintenance costs of the order of \$175,000 pa.

You will appreciate that these are still considered provisional estimates at this stage and we will not be able to obtain firmer figures from Agility until a work and revenue agreement has been completed.

I will be using this order of costs to assess likely tariff costs based on gas receipts from Moomba and Culcairn. I look forward to maintaining close contact with you on this project.

Regards

Peter Sydney
Marketing and Financial Analyst
Australian Pipeline Trust
Level 5, Airport Central Tower 241, O'Riordan St., Mascot NSW 2020
Ph: 02 969 30003
fax: 02 8339 0005
email: psydney@pipelinetrust.com.au

12/05/03

Ethanol prop extended to 2008

Cosima Marriner

The Government has decided to extend its subsidy of the controversial fuel additive ethanol for the next five years, before gradually reducing the production grant.

As part of a wider reform of the fuel tax system, it will continue the existing ethanol subsidy when it expires on September 18. The 38 cents a litre production grant will be extended until June 30, 2008. Extending the subsidy will cost taxpayers \$195 million over the next four years.

The production grant will be gradually reduced in five equal annual instalments between 2008 and 2012. These new arrangements will apply to both domestic and imported ethanol.

The Government will set a new excise rate that will apply to ethanol on July 1, 2012. To simplify the fuel tax system, it will also introduce taxes for liquefied petroleum gas, liquefied natural gas and compressed natural gas on July 1, 2008. The final excise rates will be determined later this year, based on the energy content of the fuels.

The excise will be introduced in five

"The tax reductions will assist families working hard on their own budgets. The reforms . . . in education, in health, in energy and tax will make Australia stronger . . . a further step on the journey to secure Australia's future."

Full text of Treasurer Peter Costello's speech at smh.com.au



equal annual stages between 2008 and 2012.

Environmentally friendly diesel, or biodiesel, will be taxed at 38 cents a litre from September 18 this year, but as with ethanol, the excise will be offset by a subsidy until 2008. This will cost taxpayers \$234 million over the next four years. Like ethanol, the biodiesel grant will be phased out be-

tween 2008 and July 1, 2012, when a new excise rate is introduced. To encourage the adoption of ultra-low sulphur diesel, the Government will reduce the tax on regular diesel by a cent a litre on July 1, and the same again in January.

The Government said the higher fuel prices created by the new taxes would be offset for consumers by the cost of cleaner fuel. Acknowledging the plight of drought-affected farmers, the Government will increase the offset grant rate by \$18 million under the Energy Grants (Credits) Scheme.

"The reforms will establish a fair and more transparent fuel excise system with improved competitiveness between fuels," Mr Costello said.

"They will provide the opportunity for currently untaxed fuels to establish their commercial credentials in the marketplace."

To boost consumer confidence in ethanol-blended petrol, the Government capped the level of ethanol allowed in petrol at 10 per cent from July 1. It is developing an ethanol standard and made labelling of ethanol content at the bowser mandatory