OFFICE OF GAS ACCESS REGULATION

WESTERN AUSTRALIA

ACCESS ARRANGEMENT FOR THE

ALINTAGAS

GAS DISTRIBUTION NETWORK

PROPOSED BY ALINTAGAS CORPORATION

JULY 1999

SUBMISSION MADE BY

AUSTRALIAN ENERGY ADVISORS

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1. INTRODUCTION

Australian Energy Advisors provides strategic advisory services, project evaluation and asset management services to the upstream oil and gas industry, and to gas buyers in Australia. The work frequently involves a combination of technical and commercial analysis, and is undertaken by staff with extensive line management experience in the Australian oil and gas industry.

Staff from the company have provided expert witness testimony in each of the major gas arbitrations undertaken in Australia in the past five years:

- Gas and Fuel Corporation of Victoria vs Esso and BHP
- ETSA and Sagasco vs SWQ Cooper Basin Producers
- Western Power vs North West Shelf Producers

In addition, the company has:

- provided advice and analysis to gas buyers in Western Australia, South Australia, Victoria and New South Wales about the opportunities to purchase gas from alternative suppliers, and the possible prices and terms for such supplies.
- prepared submissions on behalf of clients in regard to the open access regime on gas pipelines and access to upstream oil and gas facilities
- undertaken assessments of the opportunities for third party trading in gas, having regard for open access provisions and the position regarding currently contracted gas reserves
- modelled the effect on gas price and delivery of the formation of a pipeline grid in Eastern and Central Australia, and the entry of gas from the Timor Sea and from Papua New Guinea
- advised on the convergence of gas and electricity utilities in Victoria, the level of savings available and the likely price for Victorian gas assets.

We have not in the following paper undertaken a detailed analysis of the Access provisions proposed by AlintaGas. Rather, we have identified a few key areas which we consider Offgar should review closely before reaching its decision. Those areas are:

1. The derivation of the high WACC figure
2. The use of Deprival Value for asset valuation, and the proposed cross-subsidy
3. The high Unaccounted For Gas figure

2. The Derivation of the High WACC Figure

The derivation of the suggested Weighted Average Cost of Capital (WACC) is undertaken with little discussion, and results in a very high requested figure of 8.0% pre-tax real. We wish to review the derivation of the figure and identify the reasons for the high result.

The analysis is probably best undertaken by comparing the figures used by AlintaGas with the figures adopted by the ORG when approving the access provisions for the Victorian Gas Distributors, because the reasons behind the ORG decision were provided in detail, and the issues had been debated at great length in public prior to the decision being handed down.

In considering the AlintaGas application, it is worth recognising that the WACC awarded in the Victorian decision was adjusted upward from the original draft ORG figure of 7.0% to 7.75% pre-tax real, to meet the concerns of some stakeholders about anticipated additional risks arising from:

1. An untested regulatory regime

2. The immaturity of gas market reforms and the industry structural arrangements

3. Diversifiable risks which cannot be readily quantified and included in cash flows

For AlintaGas to justify a return of 8.0% real, it would be necessary for it to demonstrate that these same factors apply in the Western Australian market, but to a greater degree, or that there were other unquantified risks, or else AlintaGas would need to adopt a different methodology to developing the WACC values. In our opinion, AlintaGas has made none of these arguments; it has simply pushed the limits on each of the parameters, with the cumulative effect of exceeding the reasonable boundaries.

There is no evidence in the AlintaGas submission to demonstrate that it faces the additional risks listed above, or any other risks not measured in the Capital Asset Pricing Model (CAPM), and therefore there is no justification for it obtaining a return any higher than the draft decision by the Victorian ORG of 7.0% pre-tax real. On the contrary, in one crucial area, the risk free rate of return, it can be demonstrated that the rate has declined since the Victorian decisions, which would have the effect of reducing the required rate of return to close to 6.0%.

A comparison of the parameters proposed by AlintaGas and those used by the Victorian ORG in its draft and final decisions is shown in the following table:

FIGURE 1: PARAMETERS USED IN CALCULATING WACC

COMPARISON OF ALINTAGAS AND VICTORIAN ORG

Parameter	AlintaGas proposed Value	ORG Victoria Final Decision	ORG Victoria Draft Decision
1. Risk free rate of return	5.65%	6.0%	6.0%
2. Market Risk premium	6.5%	6.0%	6.0%
3. Equity Beta	0.85	1.20	0.85
4. Debt Beta	0.235	0.12	0.06
5. Effective tax rate	36%	36%	25%
6.Imputation credit value	0.30	0.50	0.50
7. Debt to assets ratio	55%	60%	60%
8. Debt Premium	1.53%	1.2%	0.8%

We will not deal in detail with the methodology and rationale behind the calculation of the values for each of the parameters, since it will be well known to Offgar, and has been dissected in previous decisions, including the Victorian one. However, brief comments upon the values chosen by AlintaGas are as follows:

1. Risk-free rate of return

The value of 5.65% is based upon the yield of 10 year Commonwealth Bonds for the 12 months to November 1998. ACCC and ORG have suggested that the Bond yields should be assessed over the period of 2 months prior to a decision. The use of any longer period is inappropriate as it implies that the history of the yields provides information about the future yield values (ie there is no random walk). The use of information derived close to the Offgar decision date would be more appropriate. AlintaGas do not appear to have undertaken an analysis of the yield from Commonwealth capital indexed bonds. This should be included as a useful check.

2. Market Risk Premium

The MRP is normally taken as being between 5% and 7%, with many factors impinging upon the difficulty in providing a more precise historical figure. It is generally accepted that the introduction of dividend imputation is justification for biasing the choice of figure towards the bottom end of the scale. In recent Australian regulatory hearings, an appropriate figure has most usually been taken to be 6.0%. Increasing the figure to 6.5% would take special arguments, in our view, none of which have been put forward by AlintaGas.

3. Equity Beta

The equity beta chosen of 0.85, is said by AlintaGas to be consistent with the "figure used in determining the WACC for the Victorian gas distributors", but the figure used in the Victorian final decision by ORG was actually 1.20. The figure of 0.85 was used in the draft decision, and it was moved upwards to 1.20 to respond to the perceived increased risks in the regulatory, market immaturity and diversifiable risks noted at the beginning of this paper. There is insufficient information in the AlintaGas proposal to ascertain whether their intention is to remove any claim for these additional risks. However, our view is that it would be appropriate to remove this premium, as they appear to have done.

AlintaGas has suggested that the Equity Beta may be understated if the risk of by-pass of the network is higher in Western Australia than in Victoria. In our view, this is unlikely to be the case because:

a) AlintaGas has based its tariffs on volume x distance, specifically to overcome the risk of by-pass.

b) The risk of by-pass in Victoria would have to be considered alongside the risk of movement by a customer from one distributor network to another, which is not possible in Western Australia, where there is only one network provider.

4. Debt Beta

The value chosen of 0.235 is much higher than calculations made in other gas regulatory hearings, which have ranged between 0.06 and 0.12. There is no information provided in the AlintaGas proposal to permit a reconciliation, but the difference is so great that it would suggest a different methodology is being used.

5. Effective tax rate

The full corporate tax rate of 36% has been chosen. This is clearly inconsistent with the levels of debt assumed and the likelihood of further deductions over the life of the network business. However, the approach has been accepted by other regulators owing to the difficulty of assessing future actual effective rates, and we would agree that it be used for consistency. The decision about the appropriate effective corporate tax rate to use needs to be made in conjunction with the choice of value placed upon imputation credits (see (6) below). The combination of a high assumed tax rate and a low value placed upon imputation credits can result in an unfortunately biased view of the effective tax rate, which is probably not justified having regard for the information available.

6. Imputation Credit Value

The figure suggested of 0.30 for the value of imputation credits is considerably lower than the 0.50 adopted in Victoria. No justification is provided for the lower figure adopted, and the final pre-tax WACC result is particularly sensitive to the assumption made. A choice of 0.5 is the mean value, and implies that the credit on half of the dividends will be valued fully in the hands of the shareholders. The figure is likely to

be higher than this if a large proportion of the new shareholders are Australian residents. The choice of 0.30 implies that the future owners will be predominantly overseas based, or otherwise incapable of utilising the franking credits. We do not believe that there is sufficient knowledge about the future to justify such an assumption, and then to write it into the corporation's future income base. Neither do we believe that it is appropriate to set regulated income formulae to suit the needs of possible foreign shareholders. The literature suggests that the calculation of the value of Imputation Credits should be undertaken on a company by company basis. In our view, a figure of 0.50 is probably appropriate when there is no certain knowledge about the company's actual shareholder base. It is consistent with the approach taken by Officer and Hathaway in their 1992 paper.

As noted in (5) above, the combination of a high nominal effective corporate tax rate of 36%, and a low value of 0.30 placed on imputation credits, results in an unjustifiably high value for the effective tax rate, when attempting to set the appropriate pre-tax WACC. It is also inconsistent with the choice of a high 6.5% for the risk free rate of return.

The calculation of the appropriate WACC is very sensitive to the value chosen for the value of the Imputation Credits, as is discussed further below.

7. Debt Ratio

The ratio of 55% has been suggested as the mid-point of the "defacto standard" said to be emerging in the electricity and gas industries in Australia. In our view, the defacto standard adopted by regulators is 60%, and a claim for 55% is pushing the envelope somewhat. However, the more important point, in our view, is that the debt standards set by all the regulators appear to have been very conservative compared to the levels of debt which new owners of these assets appear to be willing to take on, which provide the new owners with windfall gains in the regulated entity. Accordingly, we see 60% as the lower end of the range which should be accepted by regulators.

8. Debt Premium

The pre-tax premium on AlintaGas debt is calculated as being the chosen value of 7.18% less the risk free rate of 5.65%, which equals 1.53%. This is much higher than the premium levels used in other hearings, which have been between 0.8 and 1.2%, and arises, presumably, because of AlintaGas' unexplained use of a very high Debt Beta, as noted above. The use of a higher than normal premium is also inconsistent with the lower level of debt which AlintaGas has proposed. We would expect that a network operator in AlintaGas' position would not have to pay a premium much above 1.0%.

It is possible that the higher figure comes from confusing the role of AlintaGas as a gas distributor/retailer, with the operations of a regulated network, which is what should be assessed here.

In summary, we consider that AlintaGas has overstated the appropriate values of a number of parameters involved in calculating WACC, and as a result has ended up with a target pre-tax real WACC of 8.0%, rather than a figure closer to 6% which, in view of the reduction in the Risk Free rate, would in our opinion be more appropriate.

To check the reality of the figure that we are suggesting, it is necessary only to review the sensitivity of AlintaGas's proposed WACC figure to changes in a few of their key assumptions:

FIGURE 2: ALINTAGAS'S PRE-TAX REAL WACC CALCULATION

SENSITIVITY TO CHANGED ASSUMPTIONS

Change in Assumptions	**WACC**
Base case as presented	7.97% (**8.0%**)
1. Change gearing from 55:45 to 60:40	7.59%
2. Change value of imputation credits from 0.30 to 0.50	7.40%
3. Reduce debt premium from 1.53% to 1.0%	7.69%
4. Implement all changes 1 – 3 above	**6.77%**

This list excludes the effect of a reduction in the estimated Risk Free rate, which at 5.65% is probably overstated, and should be amended by Offgar closer to the decision time.

The question of the extent to which the future, unknown shareholders of AlintaGas might be able to utilise the value of imputation credits, and the extent to which the shareholders ought to be compensated if they are unable to utilise them in full, may appear particularly arcane. However, it is clear from the above table that the answer to this question is the single most critical assumption in setting the appropriate WACC for AlintaGas. A movement from 0.3 to 0.5 (and it would be possible to go above 0.5) is sufficient to change the WACC by 0.6%, and reduce annual profit substantially.

Furthermore, if the regulator acts to over-compensate the new shareholders by setting a low value, and the new shareholders prove capable of utilising a higher proportion of imputation credits than is assumed, then the difference will be translated into an immediate and unearned gain to the new shareholders, at the expense of the current gas distribution network users. In our view, efforts should be made to avoid this unwarranted redistribution.

3. THE USE OF DEPRIVAL VALUE FOR ASSET VALUATION

AlintaGas has valued its assets on the basis of Depreciated Actual Cost (DAC) at $299.7 million, and on the basis of Depreciated Optimised Replacement Cost (DORC) at $707 million.

AlintaGas has recognised the effect that the adoption of the high DORC value would have on increasing tariffs to its current customers, and has suggested adopting for the purposes of regulation a lower asset valuation of $530.3 million based upon the Deprival Value of the assets.

The method that it has chosen to calculate the deprival value is to adjust the DORC value of the assets downwards until the revenue receivable under the proposed new reference tariffs is equal to the revenue being currently received. However, to ensure that domestic and small business customers do not face large price increases, the assets serving these customers have been devalued to a greater extent, leaving higher asset values to be serviced by the industrial customers. The reduction has been achieved largely by removing two thirds of the value of the meters and service pipes, but also involves a reduction in the value of medium and low pressure mains.

The recognition that a network operator is not necessarily justified in seeking the maximum possible notional asset value and the maximum possible return on assets is admirable, (and a ground-breaking first in Australia).

However, there appear to be a number of problems with the way that the approach has been implemented in this particular case:

1. To reduce the value of the asset base is one thing, but to do it disproportionately will institutionalise a cross subsidy from large customers to smaller ones, which does not permit the efficient allocation of resources in the future. If there are to be subsidies, they are better handled in a more overt fashion, rather than hidden within the detail of an artificial asset revaluation.

2. The introduction of a concept of cross-subsidies in this way has forced AlintaGas to consider the end price of a bundled package of gas, transportation and services to customers. How have the costs and effects of the proposed subsidy been allocated between the Network arm of AlintaGas and the Retail/Distributor arm, and how will they continue to be ring-fenced in the future?

3. The actual tariff setting does not appear to be based upon the chosen deprival asset values at all. For example, the deprival value of the Meters and service pipes in Table 3.3 is $60.8 million, which is 11.4% of the total deprival value of $530.3 million, but Allocator 2 in Table 2.2 shows an allocation of 18.4% of capital-related costs to meters. Where, then, is the logical relationship between the defined valuation of assets, the return required on those assets, and the allocation of those costs to the Users of the particular assets in an equitable fashion? How is the cross-subsidy actually being implemented?

4. If, to establish the reference tariffs, the values of the assets have been adjusted downward to an extent "just sufficient to achieve estimates of prices in the retail market consistent with the level of prices expected to prevail in that market during the period of the *Access Arrangement*", (Section 3.1.3), then, the tariff setting process would seem to have been isolated from the WACC calculation.

   Presumably, if the WACC figure is reduced to close to 6%, as we have suggested above, and therefore the revenue accruing from capital charges is reduced, then AlintaGas would wish to recalculate the Deprival Values to retain the same target revenue. The significance of any assessment of required return on assets has been lost as soon as revenue targets derived by another means are accepted.

   Nonetheless, the circularity lies not in the choice of Deprival Value (though an arbitrary percentage of DORC would have served as well), but in the desire to implement a non-economic cross-subsidy between categories of customers.

We do not consider it appropriate for Offgar to be called upon to authorise a cross-subsidy between two groups of Network customers; neither do we consider it appropriate for a Network Operator to institute such a pricing schedule. The purpose of open access regulation for gas pipeline and distribution infrastructure is to enable the gas markets to function more efficiently by allowing an increased number of producers to interact with an increased number of retailers and direct customers. It is inappropriate to have the gas market distorted by the imposition of a non-neutral distribution tariff.

If AlintaGas proposes to provide a subsidy to smaller customers, the question arises as to how much of that subsidy is to be provided by AlintaGas Retail, and how much by AlintaGas Network Operator. In reviewing the revenue targets available from each customer group, AlintaGas had information only on the total revenue from a bundle of services comprising the purchase of gas in the field, transportation by pipeline, delivery through the distribution network, metering, provision of retail services and specific other services, and profit mark-up. How was the anticipated subsidy split across all those functions, or was it all picked up by the distribution Network? If so, why? Was the cost of the pipeline delivered gas supplies streamed between customers, before the distribution costs were considered? What margin was set as being appropriate for the actual retail sale of the gas, before the cost and profit margin of the Network Distribution was calculated. Was the margin equal across all customer groups?

Our view is that any subsidy of consumer groups is a matter for Governments, not for Gas Retailers, or Gas Network Operators or Gas Regulators. If the Government of Western Australia wants a subsidy of gas prices to small consumers, let it be provided in an overt fashion, independent of any Network regulation. If the Government is concerned about the "shock" of a major redistribution of delivered gas costs from large customers to small customers, let it provide for a "glide path" of price movement over the period of the Access Arrangement.

We would suggest accepting the proposition of a lower valued asset base, but requiring that, if any cross-subsidy is considered necessary by the Government, it be implemented in another fashion.

4. UNACCOUNTED FOR GAS

AlintaGas has suggested that a figure of 3.0% is an appropriate level of Unaccounted For Gas (UAG), for which all network users ought to pay in the tariffs.

The performance of UAG appears to be missing from PA Consulting's assessment of Key Performance Indicators, and ought to be added to the list of KPIs.

In our experience, 3.0% is a high figure which would require separate and detailed explanation. Figures reported for Victoria are 2.1% (averaged over the three networks, because individual figures have not been previously available), for NSW 2.4%, and for South Australia 4.5%, with the Network operator there advising of major problems with corrosion of old cast iron and steel low pressure pipes, and implementing a major capital works programme to ameliorate the problem.

We do not believe that it is appropriate for the operator of a regulated monopoly to simply pass through costs of this nature. There need to be suitable incentives for AlintaGas to manage the gas losses.

In our view, the best approach is to set a challenging, but achievable, target in percentage terms, or in GJ lost per km of mains, and require the operator to meet the cost of replacing all gas in excess of this amount. The targets would require some level of benchmarking against other operations, and analysis of the sources of loss in the current networks. We would expect that a figure of close to 2.0% ought to be achievable, unless there are specific mitigating factors.

Care needs to be taken in setting the target and the incentives, because the operator must be prevented from undertaking uneconomic capital investment to alleviate the problem, for which he would receive a guaranteed capital return.