28 June, 2001

Mr Gary Banks,
Chairman,
Productivity Commission,
PO Box 80,
BELCONNEN ACT 2616.

Dear Mr Banks,

Review of The National Access Regime

Professor Johnstone has provided the Commission with written and oral submissions which deal principally with the issue of asset valuation. In the attached document we comment on a number of the statements and arguments made in those submissions.

Yours sincerely,

B A Connery
General Manager, Regulatory Affairs

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PRODUCTIVITY COMMISSION REVIEW OF THE NATIONAL ACCESS REGIME

COMMENTS ON SUBMISSIONS MADE BY PROFESSOR DAVID JOHNSTONE

Professor Johnstone, has provided the Commission with written[1] and oral[2] submissions which deal principally with the issue of asset valuation. A number of statements have been made in those submissions which we believe warrant a response. These points fall into two categories: those relating to the establishment of an Initial Capital Base (ICB) for pre-existing assets, and those relating to the treatment of assets (pre-existing and new) after the ICB has been established.

The ICB Provisions of the National Third Party Access Code for Gas Pipelines in Context

Professor Johnstone argues, against the background of the Gas Code, that any value above book value provides the facility owner with a "free lunch" and opposes depreciated optimised replacement cost (DORC) valuation on that ground among others.

The framers of Part IIIA of the Trade Practices Act and Condition 6 of the Competition Principles Agreement were aware that access legislation would confiscate infrastructure owners' property rights, and attempted to restore some balance by requiring that, among other things, regulated terms and conditions of access should take account of "the owner's legitimate business interests and investment in the facility".

In the Gas Code, the shift in rights and the attempt to restore balance is reflected in the derivation of the ICB as a "line in the sand" at the point of transition to the new regime. In particular the Code recognises that past pricing and growth strategies could lead to the true amount of unrecovered investment being more, or less, than the amount in the books (the book value). For this reason the Code (section 8.10) requires that the ICB be set having regard to 11 factors which include the basis on which tariffs have been set in the past, economic depreciation, and the reasonable expectations of persons under the prior regulatory regime, as well as depreciated actual cost (DAC) and DORC.

In this context the assertion that any value of ICB above book value constitutes a "free lunch" shows a lack of understanding of the principles embodied in the framing of the access legislation.

Establishing the ICB

For pre-existing assets, the ICB is one of the most significant matters to be determined at the time the first Access Arrangement is established. However, each pre-existing asset comes to the new regime with a unique regulatory, ownership, and financial history, and it is unreasonable to expect that all such assets could be valued appropriately by applying a single methodology e.g. book value. This is recognised by section 8.10 of the Gas Code where 11 factors must be taken into account in setting an ICB. DORC is one of those factors, and section 8.11 of the Code specifies that the ICB will normally fall within the range bounded by DAC and DORC. There

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1 Submission No. DR74

2 Sydney, June 6, 2001

are, therefore two questions: what is the value of DORC? and then, given the value of DORC and the other 10 factors, what should be the value of the ICB?

The first step in determining the DORC is to establish the optimised replacement cost (ORC) of the asset. We accept Professor Johnstone's observation that there are as many values of ORC as there are consultants. Nevertheless, we believe that appropriately qualified consultants, working independently to a common brief, will generally produce comparable valuations. The fault is not so much with the methodology itself (although there are acknowledged complexities) but with the current process whereby interested parties (including the Regulator) each retain consultants who may be seen to bend to the perceived objectives of their principals.

The second step is the construction of DORC from ORC – the depreciation of ORC to reflect the fact that the assets being valued are not new. In 1998 the Office of the Regulator General, Victoria (ORG) and ACCC (in their Final Decisions on Victorian Gas Assets) adopted a meaning and interpretation of DORC which is expressed in the following terms:

> *"Another justification for DORC setting the upper limit to valuations comes from what a DORC valuation actually is attempting to measure. This is the maximum price that a firm would be prepared to pay for 'second hand' assets with their remaining service potential, higher operating costs, and (old) technology given the alternative of installing new assets which embody the latest technology, generally have lower operating costs, and which will have a greater remaining service potential. Therefore, if prices reflect a value that is in excess of DORC, then users would be better off were the existing system scrapped and replaced by new assets. Similarly, if assets are sold for prices above the DORC valuation, then this implies that scarce investment funds are being inefficiently applied: in this case, it would have been a more efficient use of investment funds for the existing assets to be scrapped and a duplicate system installed."*

This meaning and interpretation has been referred to and discussed on a number of occasions since 1998, including in the ACCC's *Draft Statement of Principles for the Regulation of Transmission Revenues*, 27 May 1999 referred to by Professor Johnstone.

The Agility submission referred to by Professor Johnstone simply proposes a construction of DORC from ORC which is consistent with the ACCC's meaning and interpretation. The hypothetical investor in the replacement (ORC) asset will invest only if the NPV of cash flows over the life of the asset is at least equal to the ORC. Given that users normally expect prices to move steadily over time – say constant real – the price profile that the ORC investor would have to charge can be established. Applying the ACCC's hypothesis, DORC is the maximum price the investor would be prepared to pay for the existing second-hand asset in preference to installing a new one. Thus DORC is the NPV of the cash flow derivable from the existing asset over its remaining life if it were to price services according to the ORC asset revenue profile – the investor's alternative is to generate the same revenue stream by investing in the ORC asset. (Note that this approach also overcomes the issue of circularity inherent in some other valuation methodologies. The only question is whether the revenue profile required to support the ORC asset is sustainable in the market.)

The "depreciation" involved in the construction of DORC from ORC is therefore a derived amount i.e. the difference between DORC and ORC. As the ORG has said:

> ***"Depreciation is implied*** *- the value of an asset in a competitive market is the net present value of future income from that asset, which will be lower for an asset that is part of the way through its life. Similarly, assets which have a lower remaining life will need to be replaced earlier than new assets, implying that a buyer would pay less for older assets."*[3]

In the past all interested parties, including Regulators, have simply applied straight line depreciation to the ORC to arrive at DORC. The Agility submission observes that this approach is inconsistent with the meaning and interpretation adopted by the ORG and ACCC. Taking that meaning and interpretation as given, Professor King has confirmed that "the Agility NPV approach … is consistent with the interpretation of DORC presented by the ACCC and the ORG. In fact, it can be argued that the Agility approach is the only form of adjustment of ORC to DORC that is consistent with these interpretations." Professor King goes on to observe that the straight line approach adopted in past regulatory decisions "is arbitrary and appears to lack any economic justification" and "is clearly inconsistent with the Commission's stated economic underpinnings and justification of DORC."

The DORC calculation is necessarily hypothetical because, for so long as there is spare capacity in an existing pipeline, a rational new entrant would be unlikely to duplicate it. In this context, the ACCC has provided a logical, consistent and economically sensible meaning and interpretation for DORC given its position in the Code as the normal maximum value for the ICB. When the ACCC's conceptualisation is applied, Professor Johnstone's concerns that:

- DORC is in fact equal to ORC, because the new entrant would have to install a new pipeline costing ORC; that
- DORC is effectively unconstrained; and that
- the new entrant would not come in at DORC but only at some unknown multiple of ORC;

evaporate.

Professor Johnstone goes on to argue that it is inappropriate to set the ICB at DORC and refers to established US practice as a source of guidance. In the US, returns are provided on the written down historic cost of assets, and have been provided on that basis since most current assets were installed. That being the case, it is reasonable to take that written down value as the assets' value. However US practice cannot be applied directly to the determination of an ICB in the Australian context where pre-existing assets with a variety of regulatory and financial histories are being brought into a common regime for the first time. In particular, DAC cannot be taken as prima facie evidence of an asset's value. This fact is recognised by the Code.

Professor Johnstone also argues that DORC valuation produces tariffs which can result in under-utilisation of assets, implying that demand for network services is price-elastic. Firstly, the "optimisation" element of DORC ensures that the tariffs are based on the cost of assets sized appropriately for actual demand. Secondly, demand is essentially inelastic. Recent history in NSW provides a real life example. Average distribution tariffs for large industrial consumers in

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[3] Office of the Regulator-General, Victoria, Final Decision on Access Arrangements for Victorian Gas Distribution assets; October, 1998

NSW are currently less than 50% of their pre-access (1996/97) levels in real terms, and are on a path to decline to something less than 35% of those levels by 2003/04. Despite this reduction, industrial gas consumption has remained virtually static at 1996/97 levels and no significant change is forecast between now and 2003/04.

Regulators have the difficult task of establishing the ICB taking into account the 11 factors specified in the Code in an overall context which requires that they have regard to inter alia the service provider's legitimate business interests and investment in the covered pipeline, and the interests of Users and Prospective Users (Code 2.24)[4]. So long as the Regulator exercises his judgement reasonably in all the circumstances, the value of ICB finally determined, whether it be at the DAC end of the range or the DORC end of the range (or something greater[5]), cannot be considered to provide the owner with a "free lunch" as Professor Johnstone asserts.

Treatment of the ICB after it has been established, and new investments.

The Gas Code is quite clear that whatever the approach taken to determining the revenue requirement for the pipeline, the assets (the ICB and any subsequent capital expenditure) will be depreciated only once so that the NPV of cash flows is equal to the first cost (or ICB if it is a pre-existing asset). We accept this principle subject to qualifications about asset stranding. There is no situation where assets can be revalued in the manner suggested by Professor Johnstone.

Thus, in terms of value to the investor and cost to the user, there is no distinction between the DORC and DAC approaches once the ICB has been established. However, we would note that the Gas Code quite properly provides for revenue requirements to be determined in a variety of ways which have different outcomes in terms of depreciation under the over-arching principle that NPV equals first cost. For example, under the IRR and NPV approaches regulatory depreciation is determined by difference as "economic depreciation", which could be negative. Professor Johnstone also mentions the provision in the Gas Code for inflation to be taken into account by applying a real cost of capital to an escalating (in nominal terms) asset base. It follows that the regulatory written down value or "residual value" under those schemes will not equal the book/historic DAC.

Agility Management
29 June, 2001

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[4] When these factors are taken into account it is very unlikely that "scrap value", which Professor Johnstone discusses as the lower extreme for value, would ever be sustainable.

[5] There may be circumstances where it is reasonable to set the ICB above DORC. For example a situation can be envisaged where a pre-existing greenfields project becomes covered under the Code. Tariffs/revenues were intentionally set low for the initial years of the project (prior to coverage) to ensure market penetration and growth, with the result that economic depreciation during those years is negative. The investor's and users' expectations are that the "under-recovery" of the early years would be made up for in later years so that NPV is preserved. It would be quite proper in those circumstances to set the ICB above DORC.