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GPU GasNet's Proposal to Roll-in the Southwest Pipeline

An Independent Review

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Executive summary

GPU GasNet has proposed that the costs of the Southwest Pipeline be rolled into the regulatory asset base of the Principal Transmission System (PTS) and recovered from all users. GPU GasNet has justified its proposal almost entirely on the basis that it provides 'system-wide benefits' through:

- increased system security in the event of a system failure; and
- increased competition in the gas market.

This is a watershed decision for the ACCC. The outcome of the Commission's decision will be a good indicator of its attitude, more broadly, to who is going to perform the role of 'system planner' into the future. There is a clear choice:

- to allow the market the maximum scope to determine the right solution; or
- to allow a return to central planning of investment decisions.

The Allen Consulting Group has been commissioned by ExxonMobil to undertake an independent review of GPU GasNet's proposal. The Group has developed a framework for the analysis and applied this framework in analysing GPU GasNet's proposal and in developing an alternative proposal. The results are summarised below.

The framework for analysis

Two main questions are raised by GPU GasNet's proposal:

- Should the regulator allow the new assets be rolled-in?
- If so, how should the costs be recovered from users through tariffs?

These two issues are, in fact, strongly interrelated. Whether a new asset passes the roll-in test will depend upon how the provider intends to price its use. If it is intended to recover the costs only from the parties that use it – which, for any firm in a competitive market, is the only party who can be charged for the services provided – then the asset will pass the test. If the regulated entity wants to install an asset and subsidise its use by raising prices to parties who do not want to use it, then it must demonstrate 'system-wide benefits' (ie external benefits).

In the absence of external benefits, it is imperative that only the users of the new asset bear its cost. This signals the cost of the project to market participants. Faced with this price signal, market participants will select the most efficient option for providing the services. They will use, or make commitments to use, an investment proposed by the operator if it is the most efficient option for providing a particular service. If it is not the most efficient option, then they will select another competing option – such as the right to interrupt large and strategically placed customers. If there is insufficient demand from users to justify the investment in the project, then the operator will not proceed with the investment. This is an efficient outcome.

Such decisions are disciplined by the competition that exists between retailers and by the ability of large customers to obtain their supply directly. There is no necessity for a regulated utility or an economic regulator to be a 'central planner'. The responsibility for generating a viable return from new investment lies with the owner of the assets, not with the regulator or the users.

However, if there is *persuasive* evidence that a particular project would provide significant external benefits and that the project would not go ahead in the absence of a subsidy, then it may be appropriate for that project to be subsidised. The mechanism for providing this subsidy under the Code is to permit part of the cost associated with the project to be rolled-in on the basis of 'system wide benefits', which in turn would permit prices to be raised to users who do not use the asset.

Such a course of action usurps the role of the market in effectively driving the investment decision and replaces it with the operator and the regulator as central planners of the system's future needs. This is at odds with the thrust of pro-competitive reforms by governments. As such, before embarking on this course, the regulator should demand *clear and quantifiable evidence* of the existence of *significant* external benefits from the project.

Moreover, if there is to be a subsidy provided to encourage a particular type of external benefit, then efficiency demands that a process be used to ensure that customers derive maximum value from the subsidy. Either the external benefit should be maximised for a given subsidy, or the subsidy minimised for a particular external benefit. It is essential that this process permit non-network solutions, such as interruptible customers, to compete on a competitively neutral basis to ensure that network options are only adopted if they are the most efficient.

The most practicable mechanism for achieving this end is to require the operator to specify precisely the 'external benefit' that it is buying on behalf of participants, and to seek competitive tenders for the provision of an equivalent benefit. It is only by requiring such a process to be undertaken that the regulator could have any confidence that the option presented for roll-in was the most efficient means of providing the desired ends.

If a subsidy has been fully justified and is to be recovered from other users, then the regulator should ensure that revisions to tariffs are designed such that the 'smeared' costs are recovered in such a way as to provide the least distortion of upstream and downstream consumption and investment decisions.

Analysis of GPU GasNet's proposal

GPU GasNet's proposal to roll-in the costs of the Southwest Pipeline and recover them more broadly from PTS users on the basis of system-wide benefits is inconsistent with the principles underpinning the Code and should be rejected:

- The proposal fails to clearly identify and quantify the external system security benefits to PTS Users. It is not clear that these benefits are material. It is not clear that these benefits are not available from a number of other sources at a potentially lower cost and no competitive process has been used to determine the best value alternative.

- The proposal includes no hard evidence that significant external benefits from competition will be generated. In fact, the proposal may well provide dis-benefits by potentially distorting upstream and downstream consumption and investment decisions.

- The actual users of the Southwest Pipeline will bear only a small proportion of the incremental cost of the pipeline, yet there appears to be a reasonable prospect of significant incremental revenue from a range of users for the Southwest Pipeline over the life of the pipeline.

- The costs are not recovered from users in a way that least distorts consumption decisions. In fact, by recovering most of the cost from the Longford injection charge it potentially distorts upstream investment decisions by an artificial bias in favour of Otway producers.

- Under the proposal, interruptible customers who pay for firm service would bear their full share of the costs of the project. However, such users clearly do not benefit from the potentially enhanced system security that the project provides.

An alternative approach

An alternative approach that is consistent with the Code is as follows:

- The Western Link provides little if any benefits to PTS users. If it is to be included in the PTS then there is no reason why the users of the Western Link should not bear its entire cost. Alternatively, the Western link could be separated from the Southwest Link and the issue reconsidered at the same time as the foreshadowed proposal to incorporate the WTS into the PTS.

- The Southwest Link should be established as a separate zone and specific injection charges (from WUGS or Otways gas), withdrawal charges and matching adjustments (for towns along the route) should be designed to ensure that the maximum revenue is gained from the users of the service while maximising usage of the pipeline.

- Subject to the point immediately below, to the extent the revenue from these participants is expected to be insufficient to recover the cost of the project, the residual should be placed in GPU GasNet's 'speculative investment fund'. This will permit GPU GasNet to recover the value of some or all of this residual in the future if usage of the facility improves against the currently projected demand.

- If significant external benefits from this project can be clearly identified and quantified, and if the Southwest Link is demonstrated to be the least-cost means of providing these benefits, then the lesser of the external benefit and any residual (referred to in the point immediately above) should be rolled-in to the regulatory asset base.

These costs (if any) should be recovered in a way that least distorts upstream or downstream decisions. Given the current tariff structure, the least distorting option appears to be to allocate the cost of the Southwest Link to all Zones and recover it through a small increase in the maximum demand component of the withdrawal charges. Such an approach would have a lesser impact on interruptible customers that pay full charges but that clearly do not benefit from the potential system security benefits of the project.

Section 1

Introduction

1.1 The issue

On 12 September 2000, GPU GasNet Pty Limited (GPU GasNet) submitted to the Australian Competition and Consumer Commission (ACCC) revisions to the Access Arrangement for the Victorian Principal Transmission System (PTS). In particular, GPU GasNet has proposed rolling-in the net cost of the Southwest Pipeline project (a value of $75.5 million). It has proposed recovering part of the cost of the project by introducing new charges for participants who choose to use the new asset, but to recover the majority of the project costs by raising the existing charge for injecting gas at Longford (this is the charge for transporting gas from the Longford injection point to the market 'hub'). The new charge, and the revision to the existing Longford injection charge, have been set so that the cost of transporting gas from the Longford injection point to the market hub, and from the new Port Campbell injection point to the market hub, are equated.

GPU GasNet has claimed that rolling-in the cost of this project, and charging participants as a result of the project regardless of whether they choose to use it, is justified on the basis of the 'system-wide benefits' created, as referred to in section 8.16(b)(ii) of the National Third Party Access Code for Natural Gas Pipelines Systems (the 'Code').

The ACCC is required to assess the proposed revisions to the Access Arrangement for the PTS and the supplementary Access Arrangement Information against the principles in the Code and the provisions of the Access Arrangement. Pursuant to section 2.46 of the Code, the Commission may approve the proposed revisions only if it is satisfied the Access Arrangement as revised would contain the elements and satisfy the principles set out in sections 3.1 to 3.20 of the Code (the mandatory elements) and in assessing the proposed revisions the Commission must take into account the factors described in section 2.24 and the provisions of the Access Arrangement.

1.2 Purpose of this paper

The Allen Consulting Group has been engaged by ExxonMobil to provide an independent analysis of GPU GasNet's proposal.

The remainder of this paper:

- outlines some key points on the proposal (section 2);
- provides a framework for the analysis of the proposal (section 3);
- assesses whether the GPU GasNet's tariff proposal is consistent with the relevant provisions of the Code and the Access Arrangement (section 4); and
- suggests an alternative tariff structure that better meets the objectives of the Code (section 5).

Section 2

The GPU GasNet Proposal

GPU GasNet has applied to the ACCC to have the capital cost of the Southwest Pipeline rolled into the capital base of the PTS, to establish new Reference Tariffs to apply to the use of this asset, and to raise other existing Reference Tariffs to reflect these additional costs. This section outlines the costing assumptions and methodology behind the proposal, and GPU GasNet's justification for the revised tariff structure they propose.

2.1 Description of the proposal

The cost/revenue base

GPU GasNet has stated that the gross capital cost of the Southwest Pipeline was approximately $82.8m. However, GPU GasNet proposes to increase the capital base by only $75.5m to reflect a payment of $7.3m from the Victorian Government to compensate for the cost of accelerating the project's construction as part of the Winter '99 Project. GPU GasNet's anticipated incremental operating cost in relation to the Southwest Pipeline is approximately $0.35m per annum.[1]

Revised Reference Tariffs

GPU GasNet has proposed setting tariffs for the use of the Southwest Pipeline that are expected to recover only about $30 million of the project cost in NPV terms. It has proposed recovering the remaining $45 million by raising the Longford injection charge.[2] The roll-in of this asset is projected to raise GPU GasNet's total transmission revenue by 12.8 per cent (in NPV terms over the life of the project).[3]

2.2 GPU GasNet's justification for the revisions

GPU GasNet claims that the proposed increase in the Longford injection charge is justified by the system-wide benefits provided by the Southwest Pipeline. GPU GasNet submits that these system-wide benefits are two-fold:

- Enhanced system security to all users of the GPU GasNet system from additional sources of gas supply from the Otway basin (including the Western Underground Storage) to all natural gas users in Victoria; and

[1] The annual allowances for incremental operation and maintenance costs includes: pipelines (including valves) - $0.14m; facilities (regulators and compressors) - $0.11m; and compressor and heater fuel - $0.10m.

[2] These figures have been calculated as 40 per cent and 60 per cent respectively of the total project cost, as noted by: GPU GasNet, *Application for Revision to Access Arrangement for the Principal Transmission System Southwest Pipeline*, page 25.

[3] GPU has stated in its proposal that it has revised its depreciation methodology in relation to these assets in order to create a more appropriate time-profile of tariffs. As the choice of depreciation methodology affects the timing of GPU GasNet's revenue receipts, but not their value, this report refers only to net present values rather than to the projected tariffs at a particular point in time.

- Increased competition by enabling the gas reserves from the Otway basin to compete with Bass Strait production, and by facilitating significant competition for peaking and seasonal gas supply between Esso-BHP at Longford and the Western Underground Storage at Iona.[4]

GPU GasNet also claims that equating the injection charges (at Longford and the Southwest zone) is justified on the grounds that users become indifferent to the source of their gas (at least with respect to transmission charges). Further, GPU GasNet argues that the two pipelines have almost the same length and supply the same market (they claim that under the commonly accepted volume-distance pricing model, it is argued the same tariff would apply to both pipelines despite the different vintage of each pipeline). GPU GasNet believes that equating the injection charges will facilitate competition between the two gas sources and encourage downward pressure on gas prices.

Other than the revised tariffs outlined above, GPU GasNet does not believe it is appropriate to increase the Interconnect injection charge. Along with the liquefied natural gas (LNG) facility, the Interconnect is the remaining source of gas supply in Victoria. Injections through the Interconnect are not likely to significantly exceed the current 20 TJ/day. The LNG facility is of limited capacity, and in practice most of this capacity will be reserved for severe winter scenarios. GPU GasNet submits that an increase in the Interconnect injection charge would detract from the economics of this competitive source of supply.

In summary, GPU GasNet argue for an increased in the Longford injection charge to reflect its belief that all gas users benefit from the Southwest Pipeline via increased system security in the event of a system failure at Longford or elsewhere, and via increased competition in the gas market (which applies downward pressure on prices).

[4] Section 4 discusses the system-wide benefits as part of a broader analysis of the GPU GasNet proposal.

Section 3

The framework for analysis

3.1 Introduction

In considering whether to approve GPU GasNet's proposal, the ACCC must apply the relevant provisions of the Code and the Access Arrangement as identified by the ACCC in their Issues Paper. This section outlines the provisions against which GPU GasNet's proposal must be assessed, and explains the insights that may be drawn from economic principles as to how these provisions should be interpreted and administered by the regulator. This discussion establishes a conceptual framework for analysis of the GPU GasNet proposal.

There are two seemingly separate issues that are raised by GPU's proposal, which are:

- whether the new assets should be rolled-in, and
- what is the most efficient charging structure for the use of the new assets.

These two issues are in fact strongly interrelated. Whether a new asset is expected to pass the roll-in test (which is discussed is more detail below) will depend upon how the provider intends to charge for its use. For example:

- If the provider commits to recovering charge only the users of the asset, then the asset will pass the roll-in test automatically.
- However, to the extent that the provider intends to charge other participants for the use of an asset that they do not choose to use – that is, the cost associated with the asset is (at least partly) smeared across all users – then the provider would need to rely upon the system-wide benefits criterion to justify rolling in the asset.

It follows that in order to understand when a roll-in using the system-wide benefits criterion is appropriate and when it is inappropriate, it is necessary to understand the role that the price charged for use of new transmission assets plays in encouraging economic efficiency, both in the transmission system, as well as in upstream and downstream industries.

Accordingly, a discussion of the role of pricing for the use of new transmission assets is provided below, followed by a discussion as to how the Commission's administration of the 'roll-in' test will assist in encouraging efficient price signals to develop.

3.2 The role of prices in encouraging efficiency

General Principles

Economic efficiency is typically defined as a condition from which it is impossible to make one group of agents better off without making another group worse off: that is, the sum of the benefits to society is maximised. In practical exercises, economic efficiency (or, more particularly, a change in efficiency) is often taken as the condition that maximises the sum of the benefits to consumers and producers, so that an increase in total benefit to society would follow where there was a rise in the sum of the producer and consumer surplus.[5]

Pricing can play an important role in promoting economic efficiency in relation to the use of regulated assets (such as gas pipelines):

- If the costs associated with a new pipeline can only be recovered from the users of that asset, then projects should only be viable to undertake if the benefits derived from the asset exceed its cost, and where the users of the asset (ie the customers) – and not a central planner, such as GPU GasNet or the ACCC – effectively determine the benefits associated with the project.[6]

- Users will only choose to use the relevant asset if the price for its use is less than the price of a substitute service. Thus, the new project should only be viable to undertake if it is a lower cost option than potential alternatives – and where the relative cost of the relevant project is determined by the users of the asset, rather than by a central planner such as GPU GasNet or the ACCC.

The key point is that if the price for the use of the new project reflects its cost, then market participants – who have more information about the value they would derive from a particular project – in effect, decide whether new pipeline projects proceed. Similarly, new pipeline projects would be required to compete with other potential substitutes for the same service (whether these be network or non-network options): if the prices reflect cost, then by selecting the lowest price option, market participants would also select the lowest cost option.

[5] There is an issue in the economic literature as to whether social benefit should be taken as the sum of consumer benefit, or as the sum of consumer and producer benefit. In general, the different definitions of social benefit are identical where there are homogenous producers; however, the latter definition provides a more robust measure of social benefit where there are infra-marginal producers earning economic rents in competitive equilibrium. The latter definition is particularly relevant for network industries where an advantageous geographic location could provide a particular producers with higher returns than required to attract capital into the industry, but where limits on the availability or use of land prevents more producers establishing in the same location (even in the long term). It is noted that the ACCC has adopted the sum of consumer and producer surplus as its measure of social benefit for the purpose of its regulatory test for new interconnectors and augmentations in the electricity industry: Australian Competition and Consumer Commission, *Regulatory Test for New Interconnectors and Network Augmentations*, 15 December 1999.

[6] Technically, GPU GasNet is free to construct whatever pipelines it likes. However, as discussed below, unless the regulator approves the subsidisation of a particular project (through permitting a roll-in on system-wide benefits grounds), it would be constrained only to recover its costs from the users of that facility. Thus, it would not be expected that GPU GasNet would construct pipelines in the absence of a commitment from participants to use the facility, or a reasonable expectation that the necessary market will be present or emerge over time.

Impact of Economic Externalities

Economic externalities occur where production or consumption of a particular item creates costs or benefits to parties *other than those to the particular transaction*. The particular type of externality that is relevant to the GPU GasNet application is a positive consumption externality, that is, where the 'consumption' of the new pipeline will create benefits beyond those participants who choose to use the asset. The two examples of potential provided in GPU GasNet's proposal are that the existence of the new pipeline will enhance competition in the market generally (and so benefit non-users of the pipeline), and that it will also reduce the threat of market suspension and so provide benefits to participants that cannot be purchased in the gas spot market.

In principle, the presence of externalities *may* imply that the decisions made by market participants are not consistent with economic efficiency. In particular, the decisions made by market participants will reflect only their *private* benefits from the particular good or service. Hence, projects will proceed if:

$$\textit{Private Benefits} > \textit{Costs} \qquad (1)$$

However, the project will increase social benefit whenever:

$$\textit{Private Benefits} + \textit{External Benefits} > \textit{Costs} \qquad (2)$$

Accordingly, if a project were to fail to satisfy condition (1), but does satisfy condition (2), then a project that would provide net benefits to society would not proceed if decision making were left to the market participants. Note, however, that if the project satisfied condition (1), then a project that provided net benefits to society would proceed, regardless of the presence of economic externalities. That is, just because a project has some degree of externalities, this does not mean that it won't be commercially viable to undertake.

One response to a concern that some efficient projects may not proceed in the presence of positive consumption externalities is to provide a subsidy for the construction of the relevant project. From condition (2) above, the maximum subsidy that should be provided to the project is:

$$\textit{Maximum Subsidy} = \textit{External Benefits}$$

With such a subsidy (and with the residual costs recovered from the users of the project), efficient projects will always proceed. Note, however, that the provision of a greater subsidy than the sum of the external benefits may result in inefficient projects proceeding. Moreover, in many cases, the relevant projects may have proceeded with a lower subsidy, or without a subsidy at all.

The recognition of such externalities, and the provision of subsidies to particular projects, raises a number of important practical issues.

First, opinions as to *whether externalities exist in any material sense*, let alone the valuation of any potential external benefit, are extremely subjective. However, the precise value of the external benefit is extremely important if the objective is to ensure that inefficient projects are not induced.

Second, once the presence of material externalities is recognised, and subsidisation of particular projects is contemplated, then *significant and potentially undesirable changes to the responsibilities for decision-making* come into play. In particular, market participants would no longer decide (through their decisions as to whether or not to commit to use a particular pipeline) whether projects should proceed. Rather, the utility, and the regulator through its decision on how much of a subsidy should be provided to a new pipeline, have the role of determining whether a particular project will deliver net benefits. That is, the market discipline that arises from the provider having to find a market for its new project in order to recover its costs is removed, and instead the economic regulator is faced with the difficult task of trying how much benefit would be derived from a particular project.

Third, just because a project can be justified it doesn't mean that it is the least-cost option. A subsidy should not be provided to a particular project without considering *whether competition and choice can be being used to determine the least-cost source* of the particular good (in this case, more competition and security of supply).

Fourth, there is a range of *other practical considerations* that need to temper any theoretical position. Measurement difficulties mean the quantification of externalities is often highly subjective and extremely sensitive to the assumptions used. Policy makers and regulators world-wide do not have a good track record in attempting to estimate externalities. In the past, subsidies have often resulted in further distortions rather than more efficient outcomes, often favouring concentrated interests over dispersed interests.

For the reasons above, it is considered that, when faced with a request to permit the subsidisation of a particular project, an economic regulator should require clear and readily quantifiable evidence of the presence of significant external benefits before permitting a particular project to be subsidised. Moreover, where the evidence of some form of external benefit is found to be convincing, to the extent practicable, competitive bids for the provision of an equivalent service should be sought to ensure that there is pressure for the level of subsidy be minimised, or the external benefits gained for a quantum of subsidy maximised.

3.3 The roll-in tests in the Code

The regulator's administration of the roll-in tests in the Code, in effect, determine the extent to which new projects are able to be subsidised (in this case, from the general customer base).

Section 8.16(b) of the Code specifies three conditions under which the cost of a new project may be rolled-in to a provider's regulatory asset base and reflected in regulated charges. These are as follows:

> (i) the Anticipated Incremental Revenue generated by the New Facility exceeds the New Facilities Investment; or
>
> (ii) the Service Provider and/or Users satisfy the Relevant Regulator that the New Facility has system-wide benefits that, in the Relevant Regulator's opinion, justify the approval of a higher Reference Tariff for all Users; or
>
> (iii) the New Facility is necessary to maintain the safety, integrity or Contracted Capacity of Services.

'Anticipated Incremental Revenue', in turn, is defined (in section 10.8) as:

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

The first condition allows the cost of a new project to be rolled-in if the incremental revenue generated by the project is expected to recover at least the incremental costs. This can be interpreted as implying that if the regulator is satisfied that the provider will only seek to recover the costs associated with a new asset from the users of that asset, and so no subsidisation is proposed, there is no barrier to those costs being reflected in the entity's regulated charges.

The second condition allows the regulator to permit the cost of an asset to be included in the entity's regulatory asset base even though it is not expected to generate incremental revenue in excess of cost. The effect of which would be to permit general regulated charges to rise. Accordingly, this provision permits the new project to be subsidised, with the subsidy is funded through a rise in regulated charges generally.

Any expenditure that does not meet these tests is required to be excluded from the regulatory asset base, with the effect that the regulated entity would not be able to recover those costs through regulated charges.[7]

It is reasonable to assume that regulated entities are only likely to undertake projects for which they expect to recover the cost. Thus, the approach that is taken by the regulator when administering the roll-in tests will influence, significantly, whether efficient price signals are generated, and whether only efficient projects proceed.

The relevant principles for the regulator regarding the roll-in of new assets should be:

- If the regulator considers there are no external benefits to other users from a new asset, then the operator would be constrained only to recover the costs of the new asset from the users of that new asset. To the extent that sufficient demand is not expected at the price that is required to recover these costs, then the project should not proceed.

- If the regulator considers there are system-wide benefits, then the magnitude of uneconomic investment that is rolled-in determines the size of the subsidy provided to the new asset.

- The regulator should require clear and quantifiable evidence of the existence of significant external benefits before permitting a new asset to be subsidised.

- The regulator should, to the extent practicable, encourage competitive bidding for the provision of a subsidised service to ensure that there is pressure for the level of subsidy to be minimised, or for the external benefits gained for a given subsidy to be maximised.

[7] The third condition deals with the replacement of existing assets, and so is not relevant to GPU GasNet's proposal.

3.4 Cost allocation and tariff design principles in the Code

The above interpretation of the roll-in test is both consistent with and supported by the provisions of the Code in relation to the allocation of revenue/costs between Services and between Users. Section 8.42 requires that:

> "…to the maximum extent that is technically and commercially reasonable, the portion of the Total Revenue that a Reference Tariff should be designed to recover (which may be based on forecasts) should include:
>
> (a) all of the Total Revenue that reflects costs incurred (including capital costs) that are directly attributable to the Reference Service; and
>
> (b) a share of the total revenue that reflects costs incurred (including capital costs) that are attributable to providing the Reference Service jointly with other Services, with this share to be determined in accordance with a methodology that meets the objectives in section 8.1 and is otherwise fair and reasonable.

Section 8.42 provides that:

> "…a Reference Tariff should, to the maximum extent that is technically and commercially reasonable, be designed so that a particular User's share of the portion of Total Revenue to be recovered from sales of a Reference Service (which may be on the basis of forecasts) is consistent with the principles described in section 8.38."

Joint costs can be recovered across all users consistent with the principles in section 8.1. Section 8.1 is mainly concerned with economic efficiency. As discussed above, in the absence of an externality, economic efficiency requires the revenue recovered from the users of an asset not be less than the incremental cost or greater than the stand-alone cost associated with the services provided by that asset. Within this band, costs should be recovered in such a way that least distorts the consumption decisions of customers.

Where assets meet the economic feasibility test in the Code, the principles for efficient pricing are met – that is, the users of the new asset will be contributing revenue that covers at least the incremental cost associated with providing the service. However, if the regulator is convinced that significant external benefits would be generated by the existence of a particular asset, a subsidy – in violation of the lower bound rule – could be justified where required to ensure that an efficient project would proceed.

In this case the regulator should ensure that the portion of the project that is to be smeared across users more generally is recovered in a way that imparts the least distortion on upstream and downstream consumption and investment decisions.

Section 4

Analysis of GPU GasNet's proposal

This section assesses elements of GPU GasNet's proposal against the framework and principles established in section 3. Clearly, the main issue is whether the external benefits to the Users of the system are considered to be sufficiently clear and large enough to justify a subsidy being provided to the project.

It identifies the main private and external benefits likely to be associated with the Southwest Pipeline, it also identifies the users of the system to whom the purported benefits are likely to accrue. Based on this analysis, an assessment is made of the justification for the roll-in of the assets and the methodology proposed by GPU GasNet to allocate costs and revise tariffs.

4.1 Private benefits to users of the Southwest Pipeline

The private benefits associated with the construction of the Southwest Pipeline can be separately identified according to the services provided by the different assets that comprise the Pipeline. These assets are:

- The Southwest Link, which joins Lara on the PTS with Iona, where it connects to the Western Underground Storage (WUGS) facility and the Western System Link. Included in the Southwest Link are two pressure and flow regulators at Lara and at Brooklyn (which is not physically attached to the Link).
- The Western System Link, which joins the Southwest Link at Iona and the Western Transmission Link at North Paaratte, completing the link between the PTS and the Western Transmission System (WTS)

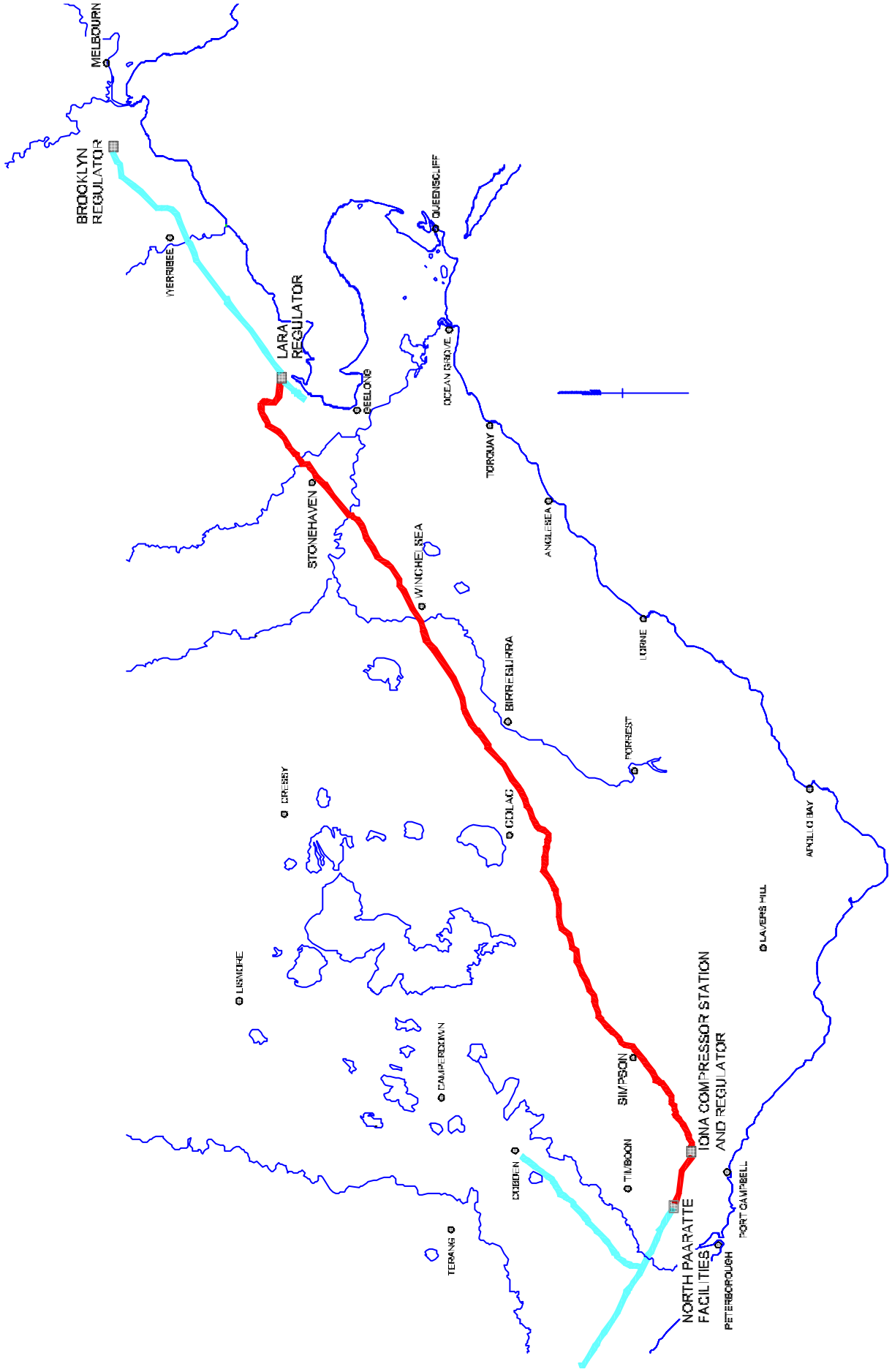
A map of the Southwest Pipeline is provided on the following page.

The services and users of the Southwest Link appear to be a distinctly different from the services and users of the Western Link. As such it is appropriate under the Code to consider these two assets separately.

The Southwest Link

The Southwest Link provides the basis for the following services:

- The supply of gas from the PTS to and from the WUGS facility at Iona.
- The supply of gas from the PTS (or from the Otways basin) to towns along the Southwest Link between Lara and Iona.
- The supply of Otway gas from the Western System Link into the PTS.
- The supply of gas from the PTS to the WTS.



Western Sytem Link: North Paaratte facilities to Iona Compressor Station and Regulator

Southwest Link: Iona Compressor Station and Regulator to Lara Regulator

The supply from the PTS to and from the WUGS facility is clearly a valuable service. The value of this service to Users is indicated by their willingness to pay to be able to access the WUGS facility, for example, major retailers entered into 5 year take-or-pay contacts covering the entire capacity of the WUGS facility and largely underpinning the decision by GPU GasNet's to invest in the pipeline (although this was when they were still under government ownership). Given the supply-demand balance projected by VENcorp, there is no reason not to expect that there would not be reasonable level of demand for this kind of service in the foreseeable future.

The future supply of gas to towns along the route (including Simpson, Colac, Lara and Winchelsea) would be expected to provide a small but steady demand for use of the pipeline. The benefits to users would be a function of the cost of the alternative energy sources used (eg LPG).

The supply of significant Otway gas to the PTS is not an immediate prospect. However, if there are significant Otway gas reserves that are economic to develop over the life of the pipeline then it would be expected that they would provide additional demand for the pipeline in the future.

It appears more likely that gas may flow from the PTS to the WTS either in the case of a restriction in the supply of Otway gas to the WTS or in competition with Otway gas. This may provide a small but steady level of demand in the medium term.

In section 3, we argued that a strong emphasis should be placed on using the market to assess the quantum of benefits to be derived from the new pipeline. Overall, if the pipeline was provided and priced as a separate service,[8] then there appears to be a reasonable prospect of significant incremental revenue from a range of users for the Southwest Link over the life of the pipeline, in particular in accessing the WUGS facility. There is no evidence from GPU GasNet that users of the pipeline could not pay what amounts to a relatively small increase (in terms of the total delivered price) for the use of the pipeline. However, GPU GasNet has not made a serious attempt to assess or to quantify this demand. This is a major flaw in the proposal.

The Western Link

The Western System Link provides the basis for the following services:

- The supply of gas from the PTS (via the Southwest Link) to the WTS.
- The supply of Otway gas to WUGS and gas from WUGS to the WTS.

The level of demand for the Western Link, in the shorter term, appears relatively modest, other than in the case of a restriction in the supply of Otway gas to the WTS when the entire WTS could be supplied from the PTS via the Western Link. In the longer term there appears to be some prospect for a steady level of demand as gas from the PTS competes with Otway gas.

Again, GPU GasNet has made no attempt to assess the likely demand or the ability of users to pay for the service.

[8] That is, if all the costs of the pipeline were allocated to the users of the pipeline and if tariffs were structured to maximise usage of the pipeline.

4.2 External benefits of the Southwest Pipeline to PTS users

GPU GasNet submits that there are external (system-wide) benefits associated with the construction of the Southwest Pipeline that accrue for two reasons:

- increased security of supply to all users of the GPU GasNet; and
- increased supply competition.

Each of these Issues are dealt with in turn.

External system security benefits claimed by GPU GasNet

GPU GasNet submits that there are two aspects of system security benefits provided by the Southwest Pipeline.

First, there is the issue of the system security benefits provided in the winter of 1999. Following the September 1998 fire and explosion at Longford, the (then) Victorian Government established a number of projects designed to provide additional security of gas supply due to concerns that Longford may not return to full capacity before peak demands were experienced in the following winter period. One of these projects was the Southwest Pipeline.

GPU GasNet claims that, although the Longford plant did return to full capacity for the winter of 1999, the Southwest Pipeline provided a critical element in the planning for system security for that winter in the context of uncertainty associated with supply from Longford. Consequently, GPU GasNet argues that the system security benefits of the Southwest Pipeline were established in the planning for the winter of 1999.

The second aspect of system security benefits identified by GPU GasNet is the on-going system security benefits. These are identified by GPU GasNet on the basis that, in the event of a failure somewhere within the PTS or WTS, the Southwest Pipeline could potentially supply the entire gas requirements of the WTS (either via WUGS or Longford), or deliver at least 200 terajoules of gas per day into the PTS to supply Melbourne and country centres.

Overall, GPU GasNet submits that the Southwest Pipeline supplements the security provided by the Interconnect and the LNG facility, but that it allows a significantly greater quantum of protection.

System security benefits formed the basis of GPU GasNet's successful proposal for rolling its Interconnect assets into the PTS earlier this year. However, GPU GasNet submits that the Southwest Pipeline provides the WTS with a similar base level security as the Interconnect assets provided the PTS. Further, GPU GasNet believes that the Southwest Pipeline supplements the system security to the PTS in excess of the LNG facility and the Interconnect assets.

Comments on potential system security benefits

To be relevant to the decision, the system security benefits must accrue to parties other than those who use the proposed project (ie they must be external benefits). However, it is not clear that the system security benefits of the Southwest Pipeline are not predominantly private benefits. System security benefits are only external benefits to the extent that market processes cannot deal with the problem. The WUGS facility is almost fully contracted by the retailers who also have take-or-pay contracts for the use of the Southwest Pipeline. The retailers use this service (along with a range of other services) to meet their supply obligations to customers. The cost of these services is ultimately passed on to the users. The benefits of system security are thus largely traded through the market. External benefits appear to be limited to the situation where the market is suspended, such as in the case of a major supply restriction. Even in this case it is not clear that system security is not traded already as customers can purchase dual fuel capacity to insure themselves against such incidents.

The roll-in test is a forward-looking test and so only future benefits are relevant. The potential benefits in relation to planning for Winter '99 should be seen as the cost of bringing forward the project by a number of years. The Victorian Government has already made a direct payment to GPU GasNet to cover this cost. Consistent with the forward-looking nature of the test, GPU GasNet has deducted this payment from the cost of the project that is proposed to be rolled-in.

In relation to the future benefits of system security, only the additional benefits provided by the project are relevant. That is, what additional system-wide security of supply benefits does the Southwest Pipeline provide above and beyond those provided to users of the PTS, given the existence of the PTS, Longford, the LNG facility, the Interconnect, the Eastern Gas Pipeline, demand management possibilities as well as other possible future sources of system security benefits.

In the case of a supply restriction from Longford, the WUGS facility can only provide a fraction of the total demand of the PTS, a restriction in supply from both Longford and the Interconnect would be required before the PTS would need to rely on the WUGS facility to avoid a complete system failure. The relevant benefit is a function of the value of the lost load on the PTS and the probability that multiple supply interruption events would occur at the same time such that there was no alternative but to use the WUGS facility to avoid complete system failure.

GPU GasNet's calculations simply show that the valuation of the system security benefit is highly subjective and is extremely sensitive to the assumptions made.

It is important to note that some users have self-insured against such costs by investing in dual-fuel capabilities or in being able to reschedule production so that they can be interuptable customers. On the demand side, such interruptible customers could potentially provide a cost-effective alternative to the SW Pipeline. On the supply side, this additional security of supply may also be more cheaply available from other sources such as the Young/Bulla Park compressors.[9] In the longer term, there is a much wider range of potential projects that could provide system security benefits as mentioned above.

[9] In the BHP Petroleum submission to the ACCC, two alternative sources of additional supply security were identified that could be available in the short term at a lower cost to PTS users than the Southwest Pipeline roll-in. They are demand side management (the Winter 99 contingency projects

GPU GasNet has made no attempt to make a detailed assessment or to set up a competitive process to determine whether project is the lowest cost or best value source of additional system security benefits. For example, as a requirement of the approval for the roll-in of costs on the basis of system-wide security of supply benefits the regulator could require a tender process to be conducted to gauge the alternatives.

WTS users clearly benefit from enhanced security of supply as a result of being linked to the PTS. However, PTS Users derive no clear system security benefit from being linked to the WTS as additional Otways production is fairly limited and in any case the Southwest Pipeline would already be fully utilised during a system security event in delivering gas from WUGS. Benefits to users of the WTS system are clearly not relevant when assessing the 'system-wide' benefits to PTS of a proposal to subsidise the cost of a new pipeline. WTS is an entirely separate system.

The beneficiaries of the Western link are the users of the WTS and potentially some Otway producers. Given the modest level of demand it seems likely that rolling-in the Western Link with the Southwest Link would effectively lead to a subsidy from PTS users to WTS users. As such, it seems appropriate for these assets to be priced on an incremental cost basis or to be rolled into the WTS rather than the PTS. GPU GasNet's proposal makes no attempt to consider the Western Link separately to the Southwest Link.

In summary, we argued in section 3 that, if a subsidy is being sought for a new pipeline, there were very good reasons for placing a strong onus on the service provider to clearly identify and quantify that there are material external benefits sufficient to justify the proposed significant additional cost to system users. GPU GasNet have failed to clearly identify and quantify the external system security benefits to PTS users. It is not clear that these benefits would be material. It is also not clear that these benefits are not potentially available from a number of other sources, in particular as competition has not been used to determine whether there are lower cost or better value alternatives and at a lower cost. On this basis, GPU GasNet's proposal to roll-in the costs and recover them from all users on the basis of system security benefits should be rejected.

External competition benefits claimed by GPU GasNet

The second major source of external benefits that GPU GasNet claims the Southwest Pipeline generates is increased competition by enabling the gas reserves from the Otway basin to compete with Bass Strait production, and by facilitating significant competition for peaking and seasonal gas supply between Esso-BHP at Longford and the Western Underground Storage at Iona.

generated over 40 TJ/day of interruptible load) and GPU owned compressors located at Young and Bulla Park on the MSP (an additional 42 TJ/day of capacity via the Interconnect).

First, GPU GasNet claims that the Southwest Pipeline connects the Victorian gas market to the gas fields in the Otway basin, thereby allowing additional gas producers to compete in the market for gas supply against the gas from Bass Strait, where Esso-BHP is the only provider. GPU GasNet claims that further gas field exploration in the Otway basin could not be economically justified in the absence of the Southwest Pipeline connection to the market.

Second, GPU GasNet argues that the main competitive benefit of the Southwest Pipeline is that it enables underground storage to compete on a level playing field with the Longford supplier for seasonal and peak gas, and thereby places pressure on the market power of the incumbent producers in Bass Strait.[10] GPU GasNet claims that the WUGS facility has the potential to contribute up to 200 terajoules of gas per day in the winter of 2001 in direct competition with the peak deliverability provided by the Esso-BHP producers at Longford.

Comments on potential competition benefits

The relevant question is, what additional competition benefits does the Southwest Pipeline provide above and beyond those provided to users of the PTS, given the existence of the potential alternative gas supply or deliverability from Longford, other Gippsland suppliers, the LNG facility, via the Interconnect, the Eastern Gas pipeline, and demand management possibilities as well as other possible future sources of gas and/or pipeline interconnections? If, as claimed by GPU GasNet, the incumbent producers have market power, and if the link does encourage some marginal new producer to enter the market, there is nothing to suggest that this producer would not follow the lead of the incumbent producers in its pricing.

While the identification the external benefits from increased competition remains elusive, the proposal may well provide dis-benefits by potentially distorting upstream competition. The proposal requires PTS users to cross-subsidise the Southwest Pipeline in order to artificially improve the economics of Otway exploration and the WUGS facility and production. New entrants in the Gippsland Basin seeking to provide peaking or base load gas would be placed at a distinct disadvantage. The lowest cost field would not necessarily be developed, and the end users would ultimately bear the higher costs.

If the cost of a new pipeline is to be rolled-in and recovered from all users, then the external benefits must be clear, quantifiable and significant. However, the impact on competition is very uncertain and the calculation of the benefits from additional competition (if any) is highly subjective and extremely sensitive to the assumptions used. GPU GasNet has provided no hard evidence that significant incremental benefits from competition will be generated. Given the above, GPU GasNet's proposal to roll-in the costs and recover them from all users on the basis of external benefits from increased competition should be rejected.

[10] GPU GasNet Pty Ltd (2000), *Application for Revision to Access Arrangement by GPU GasNet Pty Ltd for the Principal Transmission System: Southwest Pipeline*, p.17.

4.3 Tariff design and cost allocation issues

GPU GasNet's Proposal

Section 2 outlined GPU GasNet's proposed revision to the approved Reference Tariffs. In summary, GPU GasNet proposes that a new Southwest zone tariff and a Port Campbell injection tariff be introduced, with the latter at the same level as an increased Longford injection tariff. GPU GasNet claims that the proposed increase in the Longford injection charge is justified by the system-wide benefits provided by the Southwest Pipeline.

The increased Longford injection charge appears to be based on an argument for internalising the external (system-wide) benefits generated by the Southwest Pipeline — that is, GPU GasNet believes that all gas users benefit from the Southwest Pipeline via increased system security in the event of a system failure at Longford or elsewhere, and via increased competition in the gas market (which applies downward pressure on prices), and thus gas users should meet the costs associated with these system-wide benefits.

Comments on the Proposal

GPU GasNet's proposed cost allocation and tariff structure is clearly inconsistent with the principles identified in section 3 in a number of ways:

- The cost of the Southwest Pipeline is proposed to be rolled in and almost entirely recovered from other PTS users and the claimed external benefits from improved security of supply and enhanced competition have not been clear identified or quantified and may not be material. There should be a strong onus on Service Providers to justify the rolling in costs that are to be smeared across users to avoid the slipperly slope to central planning and to give maximum expression to market driven decision making. This is consistent with the thrust of the Victorian and national gas industry reforms.

- Under the proposal, the users of the Southwest Link do not bear the incremental cost of the pipeline, yet there appears to be a reasonable prospect of significant incremental revenue from a range of users for the Southwest Link over the life of the pipeline, in particular in accessing the WUGS facility. There is no evidence from GPU GasNet that users of the pipeline could not pay the relatively small increase (in terms of the total delivered price) for the use of the pipeline. However, again, GPU GasNet have made no attempt to assess or to quantify this demand. The increment costs of the users of the Western link are clearly not recovered from the users of the Link.

- The costs are not recovered from Users in a way that least distorts upstream investment decisions, in fact, the proposal actively promotes a distortion in favour of supply from WUGS or the Otway Basin through a cross subsidy on the Longford injection charge to the detriment of supply from Longford (including from potential new entrants to the Gippsland Basin). The proposal would not provide a level playing field as claimed by GPU GasNet, in fact it would achieve the opposite by effectively tilting the playing field in favour of Otway producers.

- Under the proposal, interruptible customers who pay for firm service would bear their full share of the costs of the project. However, such users clearly do not benefit from the potentially enhanced system security that the project provides. This could be seen as unreasonable as it effectively forces a user to pay for a service that the user has not requested and does not need.

GPU GasNet proposed cost allocation and tariff structure is clearly inconsistent with the principles underpinning the Code and should be rejected.

Section 5

An alternative approach

The analysis in section 4 suggests that the revised tariff structure proposed by GPU GasNet is inconsistent with the principles underpinning the Code and should be rejected.

This section presents an alternative tariff structure that would be consistent with the Code. The alternative approach is as follows:

- The Western Link provides little if any benefits to PTS users. If it is to be included in the PTS then there is no reason why the users of the Western Link should not bear its entire cost. Alternatively, the Western link could be separated from the Southwest Link and the issue reconsidered at the same time as the foreshadowed proposal to incorporate the WTS into the PTS.

- The Southwest Link should be established as a separate zone and specific injection charges (from WUGS or Otways gas), withdrawal charges and matching adjustments (for towns along the route) should be designed to ensure that the maximum revenue is gained from the users of the service while maximising usage of the pipeline.

- Subject to the point immediately below, to the extent the revenue from these participants is expected to be insufficient to recover the cost of the project, the residual should be placed in GPU GasNet's 'speculative investment fund'. This will permit GPU GasNet to recover the value of some or all of this residual in the future if usage of the facility improves against the currently projected demand.

- If significant external benefits from this project can be clearly identified and quantified, and if the Southwest Link is demonstrated to be the least-cost means of providing these benefits, then the lesser of the external benefit and any residual (referred to in the point immediately above) should be rolled-in to the regulatory asset base.

- These costs (if any) should be recovered in a way that least distorts upstream or downstream decisions. Given the current tariff structure, the least distorting option appears to be to allocate the cost of the Southwest Link to all Zones and recover it through a small increase in the maximum demand component of the withdrawal charges. Such an approach would have a lesser impact on interruptible customers who pay for firm service but who clearly do not benefit from the potential system security benefits of the project.