Before the Australian Competition and Consumer Commission

Application for Revision to Access Arrangement

by GPU GasNet Pty Ltd

for the Principal Transmission System

Southwest Pipeline

Date: 11 September 2000

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1 Executive Summary

1.1 Application

GPU GasNet, in accordance with its Extensions/Expansions Policy, is applying to roll the investment associated with the Southwest Pipeline into the Capital Base of the Principal Transmission System, and amend the Reference Tariffs. The basis for this Application is that the Southwest Pipeline passes the System-Wide Benefits Test.

1.2 New facilities

The Southwest Pipeline connects the Principal Transmission System at Lara with the Western Transmission System at North Paaratte. It consists of the Lara-Iona Pipeline (henceforth referred to as the "*Southwest Link*"), the Iona-North Paaratte Pipeline (henceforth referred to as the "*Western System Link*"), and the associated facilities.

The Southwest Link was commissioned in June 1999. It is a 500 mm diameter gas transmission pipeline with a length of approximately 144 km. It connects Lara (on the Principal Transmission System) with Iona (near Port Campbell), the site of the Western Underground Storage facility. Associated pressure and flow control regulators at Lara and Brooklyn are necessary for the operation of the Southwest Link. The Brooklyn regulator, although not connected to the pipeline, is essential to the functionality of the Southwest Link.

The Western System Link was also commissioned in June 1999. It is a 150 mm diameter gas transmission pipeline with a length of approximately 8 km. It connects the Southwest Link at Iona with the Western Transmission System at North Paaratte. It is associated with a regulator and a small compressor station, both located at Iona.

The capital cost of the Southwest Pipeline is approximately $82.8m.

1.3 Roll-in test

The Economic Feasibility Test is difficult to apply in relation to the Southwest Pipeline because, in the absence of a new zonal Reference Tariff, there is no additional revenue available from the existing Reference Tariffs to recover its capital cost.

However, GPU GasNet considers that the Southwest Pipeline passes the System-Wide Benefits Test, and hence that it satisfies the exception allowed in clause 5.7.2(c) of the Extensions/Expansions Policy. Consequently, GPU GasNet seeks to expand the Capital Base and amend the existing Reference Tariffs appropriately to reflect the actual costs of the Southwest Pipeline.

1.4 System-Wide Benefits Test

The Southwest Pipeline has distinct characteristics which distinguish it from a conventional pipeline extension, and which confer system-wide benefits to the gas market. Specifically, the Southwest Pipeline provides the following benefits.

(a) System security benefits

The Southwest Pipeline provided (and continues to provide) enhanced system security to all users of the GPU GasNet system by connecting additional sources of gas from the Otway basin (including the Western Underground Storage) to all natural gas users in Victoria.

The Southwest Pipeline formed a key element in Victoria's planning for dealing with a potential supply shortage in winter 1999 in the event that Gas Plant No. 1 at Longford did not get reinstated to full production. As such, it was vital to Victoria's supply security.

On-going security to the Victorian market is enhanced, because the Southwest Pipeline is independent of the existing supply chain from Bass Strait to Longford to Melbourne. Access to an independent source of supply will mitigate the impact of future gas supply emergencies which may occur within any link of this chain.

Additionally, the Southwest Pipeline secures supply to the Western Transmission System. Without the Southwest Pipeline the users of the Western Transmission System would be at risk of a gas supply failure at North Paaratte.

(b) Competition benefits

The Southwest Pipeline will have a significant impact on the market power of the incumbent gas supplier Esso-BHP. It does this in two ways. Firstly, it enables the gas reserves from the Otway basin to compete with Bass Strait production in the Victorian market. Secondly, it facilitates significant competition for peaking and seasonal gas supply between Esso-BHP at Longford and the Western Underground Storage at Iona. In both cases the enhanced competition will assist to diminish the market power of the incumbent gas supplier.

Whilst the Southwest Pipeline creates the threat of competition, it does not follow that the pipeline will necessarily carry significant flows. The actual utilisation of the pipeline will be dependent on the dynamics of the competitive process. This does not detract from the reality of the system-wide benefits of the Southwest Pipeline, which are sufficient to justify both the roll-in of the asset to the Capital Base and a measured but appropriate increase in the existing Reference Tariffs.

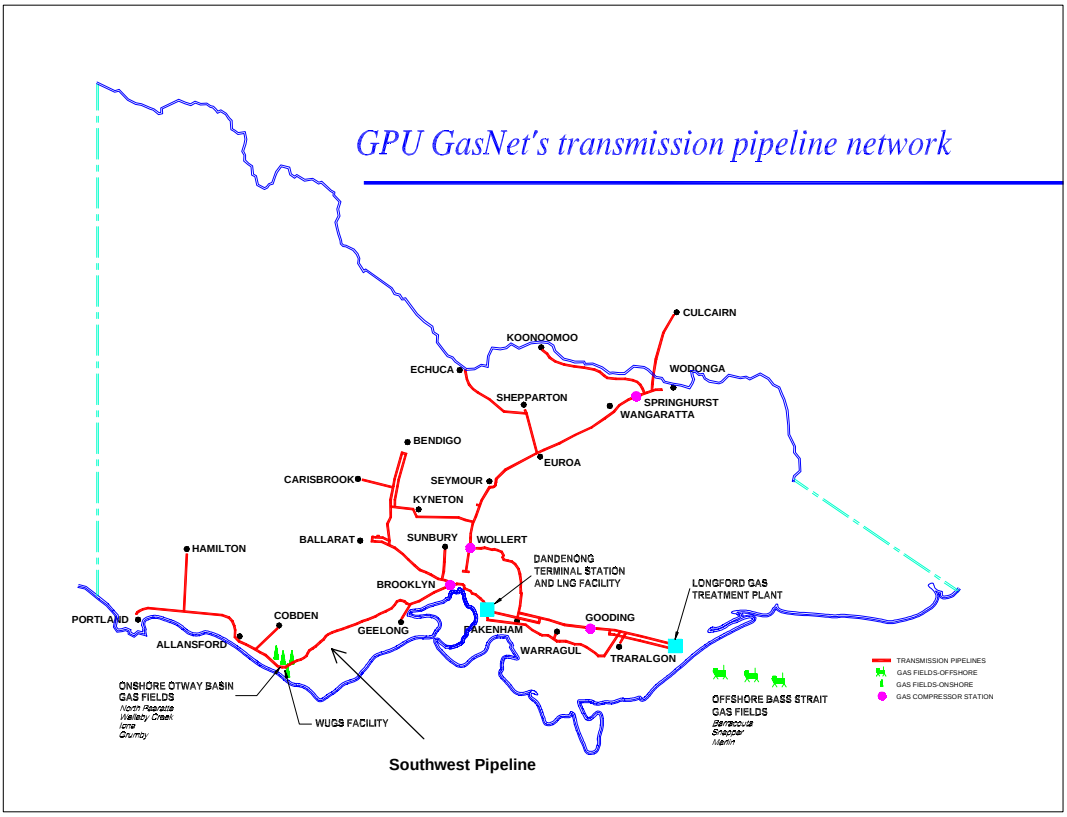
1.5 Tariff structure

The proposed revisions to the Reference Tariffs comprise:

- a new "Southwest" zone, with a new zonal injection tariff at Port Campbell;
- a matched booking rebate for users who withdraw from the Western Transmission System;
- a backhaul tariff for withdrawals from new off-takes on the pipeline, and for refill of the underground storage at Iona; and
- an increase in the Longford injection tariff.

The proposed Southwest Pipeline tariff is structured in the same way as the Longford injection tariff. Injections at Port Campbell will bear an injection charge which is set at the same rate as the tariff on the Longford pipeline. As a consequence, the Longford injection charge must be increased from its current setting. All other tariffs for withdrawals from the existing Principal Transmission System will remain unchanged. This tariffing strategy makes users indifferent (at least as far as transmission charges are concerned) to the source of their peak gas supplies, thereby promoting competition between the two supply sources, and providing a degree of "competitive neutrality" in the supply side of the Victorian gas market.

The revised tariffs are set out in greater detail in ***Annexure 2***.



2 Introduction

2.1 Application

This application is lodged by GPU GasNet, on its own behalf and on behalf of TPAA, for the revision of the Access Arrangement under section 2.28 of the Code and clause 5.7 of the Access Arrangement.

2.2 Original Access Arrangement

On 3 November 1997, the Energy Projects Division of the Victorian Department of Treasury and Finance submitted, on behalf of TPA and TPAA, a proposed access arrangement for the Principal Transmission System in Victoria. Following extensive public consultation and detailed consideration by the Commission, the Commission released its final decision on 6 October 1998 and, following submission of the revised Access Arrangement by TPA and TPAA, the Commission released its final approval on 16 December 1998. The Access Arrangement came into effect on 1 March 1999, being the date on which the Victorian Market and System Operations Rules commenced.

2.3 GPU GasNet acquisition

On 2 June 1999, GPU GasNet acquired the business (including the assets and liabilities) of TPA and the Victorian business (including the assets and liabilities) of TPAA including the Principal Transmission System.

The effect of this arrangement is that:

(i) GPU GasNet is the owner of the portion of the Principal Transmission System that is situated in Victoria; and

(ii) GPU GasNet's subsidiary, TPAA, continues to own that part of the Principal Transmission System situated in New South Wales and continues to lease it to GPU GasNet under what remains of an Operating Lease.

2.4 Covered pipeline

The Principal Transmission System is deemed to be a Covered Pipeline under the Code[1] and therefore:

(a) on 2 June 1999 GPU GasNet became a Service Provider[2] under the Code; and

[1] Code, Schedule A.

[2] Which is defined in the Code as a person who owns (whether legally or equitably) or operates the whole or any part of a Pipeline.

(b) the Access Arrangement continues to apply to the Principal Transmission System despite the change in Service Provider, and binds GPU GasNet in the same way that it bound TPA and TPAA immediately before GPU GasNet acquired the Principal Transmission System[3].

In consideration of the above, GPU GasNet makes this application as the owner of the Southwest Pipeline which is situated in Victoria, and of the Principal Transmission System to which it is connected.

2.5 Effective date

The effective date of the revisions proposed in this application is 1 October 2000.

2.6 Contact details

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3 Description of facilities

3.1 Southwest Pipeline

The Southwest Pipeline connects the Principal Transmission System at Lara with the Western Transmission System at North Paaratte. It consists of the Southwest Link, the Western System Link, and associated facilities.

The capital cost of the Southwest Pipeline is approximately $82.8m. However GPU GasNet proposes to increase the Capital Base by only $75.5m which acknowledges an arrangement under which the Victorian Government provided compensation of $7.3m to GPU GasNet for the estimated additional costs of accelerating the pipeline for the Winter '99 Project.

The anticipated incremental operating cost is approximately $0.35m per annum.

A detailed description of the Southwest Pipeline and its design philosophy is set out in ***Annexure 1***.

[3] Code, section 9.3(b).

3.2 Southwest Link

The Southwest Link is a gas transmission pipeline with a diameter of 500 mm and a length of 143.9 km. It is rated at an MAOP of 10,000 kPa. It joins Lara, on the Principal Transmission System, with Iona (near Port Campbell), where it connects to the underground storage facility and the Western System Link. The Southwest Link was commissioned in June 1999.

Gas can be carried in both directions between Lara and Iona. Easterly flow is facilitated by two pressure and flow control regulators at Lara and Brooklyn, which are components of the Southwest Link (although the Brooklyn regulator is not physically attached to the Southwest Pipeline). Assuming that gas can be supplied at Iona at a pressure of 10,000 kPa, the Southwest link can deliver in aggregate approximately 200TJ/day into Geelong and Melbourne.

Gas can be carried in a westerly direction from Lara to both the underground storage and the Western System Link at Iona. The capacity in a westerly direction is in the range of 44-90 TJ/day, depending on the load in Melbourne at the time, and provided the back-up compressor at Brooklyn is available. This is sufficient to supply the Western Transmission System if required, and to provide sufficient gas into the underground storage during the refill season.

3.3 Western System Link

The Western System Link is a 150 mm diameter gas transmission pipeline with a length of 7.8 km and an MAOP of 10,000 kPa. It joins the Southwest Link at Iona and the Western Transmission System at North Paaratte, thereby completing the connection between the Principal and Western Transmission Systems. The Western System Link was commissioned in June 1999.

The pipeline can carry gas in both directions. Westerly flows are facilitated by a 300 kW compressor station at Iona which boosts the gas pressure at Iona to a level sufficient to supply typical peak flows of 16 TJ/day into the Western System. The compressor station is expected to be operational by March 2001.[4] A City Gate at Iona is required to protect the Western Transmission System (with an MAOP of 7,390 kPa) from high pressures of up to 10,000 kPa in the Southwest Link.

The pipeline can also accept gas from the fields in the vicinity of North Paaratte for carriage in an easterly direction to Iona and thereon to Lara.

[4] At this time application will be made to include the Western Transmission System as part of the Principal Transmission System.

4 Regulatory requirements

4.1 Extensions/expansions policy

Under section 3.18 of the Code, an Access Arrangement must include an extensions/expansions policy which sets out how an extension or expansion of the Covered Pipeline will affect the Reference Tariffs.

GPU GasNet's Extensions/Expansions Policy is set out in clause 5.7 of the Access Arrangement. For ease of reference, clause 5.7 has been reproduced in ***Annexure 4***.

The Policy sets out the tests that must be passed by a New Facility if the New Facility Investment is to be rolled in to the Capital Base.

4.2 New Facilities

(a) New Facilities

The phrase "New Facilities" is defined in the Code as an extension of, or expansion of the capacity of, a Covered Pipeline which is to be treated as part of that Covered Pipeline in accordance with the Extensions/Expansions Policy. The Southwest Pipeline is primarily an extension of the Principal Transmission System (and the Brooklyn regulator is an expansion of that system). Under clause 5.7.1(a) of the Extensions/Expansions Policy in the Access Arrangement, and in the absence of written notice under clause 5.7.1(c), the Southwest Pipeline is, in effect, deemed to be Covered as part of the Principal Transmission System.

(b) New Facilities Investment

GPU GasNet considers that the capital expenditure on the Southwest Pipeline falls within the definition of New Facilities Investment.

New Facilities Investments is defined in section 8.16 of the Code as the amount of the actual capital cost incurred in constructing the New Facilities for the purpose of providing Services.

GPU GasNet considers that "actual capital cost" includes:

(i) all amounts paid to third parties for the supply of materials to and the construction of the New Facility;

(ii) all amounts paid to third parties relating to planning, design and permitting of the New Facility;

(iii) additional internal costs relating to the development of the New Facility; and

(iv) an allowance that reflects the capitalisation of a reasonable return on costs incurred in relation to the New Facility for an efficient construction period[5].

The actual capital cost of the Southwest Pipeline, after deducting compensation of $7.3m from the Victorian Government for acceleration of the construction schedule for the Winter '99 Project, was $75.5m. Details of these costs are set out in section 7.

4.3 Regulatory roll-in test

GPU GasNet considers that the Southwest Pipeline does not satisfy the Economic Feasibility Test, and has elected to seek a roll in to the Capital Base under the System-Wide Benefits Test.

Accordingly, this application is made under clause 5.7.2(c) of the Extensions/Expansions Policy which provides that:

New Facilities Investment that does not pass the Economic Feasibility Test may be recovered outside the standard procedure in clause 5.7.2(b) where:

(1) TPA and/or Users satisfy the Regulator that the New Facilities Investment passes the System-Wide Benefits Test, in which case the Regulator may approve higher Reference Tariffs for all Users and the New Facility may be included in the Capital Base; or

(2) the New Facility is able to be included in the Capital Base on grounds that it is necessary to maintain the safety, integrity or contracted capacity of the Reference Services.

The elements of these tests are discussed below. The reasons that GPU GasNet considers the System-Wide Benefits Test is satisfied are discussed in section 5.

4.4 The Economic Feasibility Test

Under clause 5.7.2(a) of the Access Arrangement, if the New Facilities Investment satisfies the Economic Feasibility Test, then the New Facility is included in the Capital Base and is charged at the Reference Tariff.

The Economic Feasibility Test is satisfied if the anticipated incremental revenue from the New Facility[6] exceeds the New Facilities Investment. However we believe that the application of this test creates a number of ambiguities in relation to the GPU GasNet tariff structure.

[5] The inclusion of such amounts was approved by the Commission in its final determination - ACCC final decision, n.50, page 27.

[6] Presumably, in circumstances where there is no adjustment to the Reference Tariffs.

The Economic Feasibility Test is easily applied in circumstances where:

(a) an extension is made to a pipeline that charges a distance-based tariff (and therefore the tariff automatically extends to any extension of the Covered pipeline); or

(b) an expansion or extension of the pipeline results in an increase in throughput such that, under the existing Reference Tariff regime, the additional revenue resulting from the increased throughput is sufficient to cover the cost of the New Facility.

However, the Economic Feasibility Test is difficult to interpret and apply within the GPU GasNet System, where a zonal rather than distance-based tariff model applies, and where (in relation to the Southwest Pipeline) the new facility may not result in increased withdrawals.

Despite the clear benefits of the Southwest Pipeline in relation to system security (refer section 5.3) and increased competition (refer section 5.5), we believe that there is no reasonable assurance that GPU GasNet will actually generate additional revenues from the Southwest Pipeline under the existing Reference Tariffs. In particular:

(i) there is currently no Reference Tariff for injections into the Southwest Pipeline;

(ii) there is no significant increase in throughput (deliveries to customers) in the Principal Transmission System, since the Southwest Pipeline is primarily an injection pipeline, which displaces or augments injections from Longford, but which (initially, and in the absence of gas market growth brought about by a decrease in gas prices) does not lead to increased deliveries; and

(iii) under the Market Carriage Access Regime, users do not have to contract with GPU GasNet in order to gain access to the Southwest Pipeline. Therefore, use of the pipeline is not pre-determined under contract, but rather is flexible in nature.

4.5 GPU GasNet Approach - the System-Wide Benefits Test

If the Economic Feasibility Test cannot be satisfied, the standard procedure under the Extensions/Expansions Policy is to roll in that portion which does pass the test, and to recover the remainder by means of a Surcharge, a Capital Contribution, or via a Speculative Investment Fund.

However, clause 5.7.2(c) of the Access Arrangement permits GPU GasNet to recover the New Facility Investment outside the standard procedure, provided it passes the System-Wide Benefits Test, or if it is required to maintain the safety, integrity or contracted capacity of the Reference Services.

GPU GasNet considers that the Southwest Pipeline satisfies the System-Wide Benefits Test.

The System-Wide Benefits Test is defined in the Access Arrangement as, subject to clause 8.16(a) of the Code[7], the Regulator being satisfied that a New Facility has system wide benefits which justify the approval of a higher Reference Tariff for all Users. The system-wide benefits associated with the Southwest Pipeline are discussed in detail in section 5.

Section 5.6 discusses the extent to which existing Reference Tariffs are increased as a result of the roll-in of the New Facilities investment. The proposed increase in Reference Tariffs (specifically the Longford injection charge) recovers only a portion of the New Facilities investment. The remainder is recovered from a new tariff on the Southwest Pipeline itself. GPU GasNet believes that the demonstrable system-wide benefits justify the roll-in of the New Facilities investment, and a measured increase in the Longford injection charge.

4.6 Prudent Investment Test

Under the provisions of the Extensions/Expansion Policy in the Access Arrangement, the System-Wide Benefits Test is satisfied only if the relevant New Facilities Investment also satisfies clause 8.16(a) of the Code. Clause 8.16(a) is satisfied if the amount of the New Facilities Investment does not exceed the amount that would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest cost of delivering the services.

GPU GasNet believes that the design and construction of the Southwest Pipeline satisfies this test. This is discussed in detail in section 7, with supplementary information provided in ***Annexure 5***.

4.7 Tariffs

The Extensions/Expansions Policy does not prescribe a tariff structure to apply in the event of a roll-in to the Capital Base. Therefore, subject to the overall requirements of the Code, GPU GasNet has some flexibility in determining the changes to the Reference Tariffs to accommodate the changes to the Capital Base.

GPU GasNet is proposing to define a new transmission tariff zone which would encompass the Southwest Link and the Western System Link, and within which a new Reference Tariff will apply. The Southwest Pipeline serves principally as an injection pipeline and hence the tariff will consist of an injection charge levied on injections at Port Campbell.

GPU GasNet believes that the most appropriate tariff strategy for the Southwest Pipeline is to equate the injection charges at Longford and at Port Campbell. This will lead to an increase in the Longford injection charge, which is justified by the system-wide benefits provided by the Southwest Pipeline, as demonstrated in detail in section 5. By equating the injection charges, users become indifferent to the source of their gas (at least with respect to transmission charges). This, we believe, will facilitate competition between the two gas sources and encourage downward pressure on gas prices.

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[7] The "Prudent Investment" test, refer section 7.

GPU GasNet has also adopted the principle that the structure of the injection charge should be identical to the Longford injection charge (based on the five peak injection days), in order to avoid distortions and spurious price signals between injections from Longford and from Port Campbell.

The detailed tariff structure is described in section 6 and in ***Annexure 3***.

5 The System-Wide Benefits Test

5.1 System-wide benefits generally

In order to pass the System-Wide Benefits Test, the Regulator must be satisfied that a New Facility has system wide benefits which justify the approval of a higher Reference Tariff for all Users.

The concept of "system-wide benefits" has not been defined in the Code. GPU GasNet considers that this test involves the following key elements.

(a) The test is an objective one and requires the Regulator to form a reasonable view based on the information available.

(b) The assessment must be based on information that was available, and expectations that could reasonably be made, at the time a commitment to the relevant investment was made.

(c) The words "system-wide" suggest that a broad definition of beneficiaries should be adopted, namely that there should be benefits for a substantial portion of the customers whose gas is transported through the relevant system.

(d) Similarly, the concept of "benefits" should be given a broad interpretation and should include benefits such as:

  (i) enhanced system security (for example, a reduced risk of involuntary curtailments);

  (ii) enhanced system reliability (for example, the ability of the system to perform reliably during periods of peak demand); and

  (iii) enhanced competition (for example, introducing a new source of gas which is likely to provide benefits to customers in the form of greater price or service competition).

(e) Finally, in order to "justify" the approval of a higher Reference Tariff for all users, the Commission must be satisfied that the benefits expected to flow from the New Facility outweigh the costs of the increased tariffs.

GPU GasNet considers that the Southwest Pipeline satisfies these requirements. In particular, it provides enhanced system security and increased competition.

5.2 System-wide benefits - enhanced system security

In considering the system security benefits, two aspects need to be considered:

- the system security benefit provided in winter 1999; and
- ongoing system security benefits.

These are discussed in turn below.

(a) 1999 system security planning

The Longford fire and explosion of September 1998 destroyed a substantial part of the Esso Gas Plant No. 1 at Longford and associated infrastructure. In those circumstances, it was unclear what capacity would be available from Longford during winter 1999. Immediately following this incident, the Victorian Government initiated a number of projects to provide additional security of supply in light of the possibility that gas production at Longford might not return to full capacity before peak demands were experienced in winter 1999. The principal projects designed to secure additional gas from sources other than Longford were the Moomba-Melbourne Augmentation Project and the Southwest Pipeline.

The necessity for these projects was illustrated by the fact that as late as June 1999, Esso was not in a position to guarantee that gas supplies would be restored to sufficient levels[8].

The Southwest Pipeline was constructed at government direction under an accelerated schedule, and linked with accelerated field development work at North Paaratte, Mylor and Fenton Creek, and the installation of additional gas processing capacity at Iona. The entire project was designed to supply at least 100 TJ/day into the Principal Transmission System by winter 1999.

The Southwest Pipeline (supplying 100 TJ/day) and the Moomba-Melbourne Augmentation Project (supplying 92 TJ/day) together provided a delivery capacity of at least 192 TJ/day during winter 1999, sufficient to satisfy the bulk of the shortfall from Longford in the event that Gas Plant No. 1 did not return to production.

In fact, Longford did return to full production for winter 1999, but given the uncertainty associated with supply from Longford following the Longford fire and explosion, the Southwest Pipeline provided a critical element in the planning for system security for that winter. As such, the system security benefits of the Southwest Pipeline (and the Moomba-Melbourne Augmentation Project) were established in the planning for Winter 1999.

(b) Ongoing system security benefits

GPU GasNet considers that the Southwest Pipeline provides significant ongoing system security benefits.

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[8] "*Gas supply not certain says Esso*", *The Age*, 12 June 1999, News page 5.

Firstly, the Southwest Pipeline provides full back-up support to the Western Transmission System, which is currently supplied from North Paaratte at Port Campbell. If this or other local sources failed, the Southwest Pipeline could supply the entire needs of the system, either from the underground storage or from Longford.

Secondly, the Southwest Pipeline enhances the security of supply to Melbourne and country centres. The Southwest Pipeline can deliver at least 200 TJ/day into these demand centres from the underground storage and from the local fields at Port Campbell. This is a significant quantity when compared to a deliverability of 990 TJ/day from Longford. The Southwest Pipeline provides a high level of enhanced system security in the event of:

- a failure at the Bass Strait wells or gathering lines;
- a failure at the Longford gas processing plant;
- a failure of the Longford to Dandenong pipeline (which is un-duplicated for one third of its length); and
- a failure of the LNG facility during peak shaving operations (which is relied upon for up to 150 TJ/day).

The Southwest Pipeline supplements the security provided by the Interconnect and the LNG facility, but it offers a significantly greater quantum of protection. The security benefits can range from fewer involuntary curtailments during a partial supply failure (such as the "ice-plug" incident in June 1998), to the support of critical loads and the maintenance of minimum system pressure during a total supply collapse (such as occurred in September 1998).

5.3 Valuing enhanced system security

(a) Theoretical calculation of system security value

In the Application for Revision to Access Arrangement of 25 August 1999, GPU GasNet presented a detailed theoretical model to calculate the value of system security. The arguments from this document will not be reproduced here. In summary, the value of enhanced system security can theoretically be calculated from:

SSV = Q x V x P

where:

SSV = system security value

Q = quantity of additional system security provided

V = value of lost load avoided

P = probability of additional security being utilised

Few of these items can be quantified precisely, but the August Application proposed a range of reasonable values for each term.

(b) Winter 99 security

The value of system security provided by the Southwest Pipeline for winter 99 is estimated as follows:

The quantity Q of additional system security provided for in winter 99 is conservatively estimated to be 5 PJ (100 TJ/day for 50 days during the winter).

The value V of lost load avoided is between $80/GJ and $800/GJ, based on the established VoLL of $800/GJ in the Victorian gas market, and the value of $80/GJ for the Administered Price Cap.

The probability P of requiring the quantity Q of additional system security is between 20% and 80% (a reasonable expectation at the time the project was initiated).

Hence the system security value SSV attributable to the Southwest Pipeline is conservatively $80m with the high end of the range being $3.2b.

(c) Ongoing security benefits

The value of the Southwest Pipeline for the Winter '99 project is relatively straightforward to establish, since the consequences of a failure to re-establish Longford production could be quantified reasonably well. The value of ongoing benefits of the Southwest Pipeline is more difficult to establish, since there is a wide range of possible failure modes of the system, and a range of probabilities for each possible mode. These failure modes include Bass Strait production, gathering and processing, and transportation from Longford to Melbourne.

For an approximate solution, the calculation can be restricted to a serious system failure which requires the send-out of 10 PJ (the maximum volume of gas stored in the underground storage). The value of lost load is between $80/GJ and $800/GJ as discussed above. If we assume that the probability of this event is 5% (it will occur on average once in 20 years), then the system security value is:

SSV = Q x V x P

= 10 PJ x ($80/GJ to $800/GJ) x 0.05

= $40m to $400m

The estimate of a 5% probability of a serious incident has been established on the basis that:

- in the thirty years of operation of the Longford gas processing plant there have been two serious incidents,
- there have been a number of less serious incidents, including a supply disruption in August 2000 which lead to socialised Uplift of $0.5m in the Victorian gas market,
- the plant is older and possibly more prone to failure than new plant,

- likewise the transmission pipelines and compressor stations, despite no record of failure in the past, have a finite probability of failure.

The assessed system security value applies to serious incidents only. Additional value could also be attributed to less severe but more probable failure modes. However these events are very difficult to quantify, and this will not be attempted here. However, it is our view that operating practices will become more conservative in future, and the regulatory regime will become stricter, which means that operators are more likely to initiate short-term shut-downs rather than risk a serious incident

(d) Summary

The theoretical calculations above demonstrate that there has been, and will continue to be, significant benefits to system security attributable to the Southwest Pipeline. A range of values has been calculated but it is likely that the true value of these benefits will lie between the two extremes.

These benefits are system-wide since they apply to all gas users in Victoria. In the event of a system failure, all users will be better off than they otherwise would be in the absence of the Southwest Pipeline.

These benefits, in conjunction with the benefits of enhanced competition, are sufficient to justify the increase in Reference Tariffs to all users. A comparison of the costs of roll-in and the benefits of enhanced security and increased competition is given in section 5.6.

5.4 System-wide benefit - increased competition

(a) Producer market power

A fundamental issue in gas reform in Victoria (and elsewhere) is the market power of the incumbent producers [9].

Esso-BHP has had a virtual monopoly on gas supply in Victoria for 30 years. The market power of Esso-BHP is still largely intact despite the extensive gas market reforms introduced by the Victorian Government. The Government created three competing gas retailers from the original Gascor entity, and allocated to each a share of the gas available under the on-going contract between Gascor and Esso-BHP (plus a gas release program to create a fourth retail competitor). This reform has the potential to set at least a cap on gas prices, based on commodity price competition between the retailers.

However, whilst the gas contracts make available a significant quantity of gas at a contract price to each of the three retailers, it is our understanding that there are limits to the amount of peak deliverability that is available. Given that the load in Victoria is very peaky and requires a firm supply, and given that firm peak deliverability from Esso-BHP is limited, it follows that Esso-BHP still retains considerable market power. In theory, in the

[9] "The reforms implemented to provide pipeline access should drive greater competition in the downstream gas retail markets. However, the benefits of these reforms may be severely limited or not eventuate if there is a lack of competition upstream." Alan Asher. Paper delivered at APIA International Convention Nov. 1998.

absence of additional sources of peak supplies into the market, a producer in such a position may be able to use this market power to influence the price of gas and the growth of the gas market.

(b) Competitive forces

There is a perceived need for increased producer competition both between and within basins. Proposals for upstream reform have been considered, but it appears that these reforms will take some time to develop.[10]

In the shorter term, the most appropriate means to introduce competition to the gas supply market are:

- Connections to new gas basins: and
- Creating new sources of peak and seasonal supplies.

The Southwest Pipeline assists in both areas.

(i) Connections to new gas basins

Gas is currently being imported into Victoria via the Interconnect (and some exports have recently commenced). In the near future, the Eastern Gas Pipeline will export gas from Longford to NSW. These developments are expected to create competitive pressure on the commodity price of gas from Esso-BHP.

The Southwest Pipeline connects the Victorian market to the gas fields at Port Campbell. This allows gas owned by other producers to compete in the market against gas from Bass Strait, and further enhances the competitive pressures on Esso-BHP. There are good prospects for further gas field discoveries in the Otway Basin. Santos has developed the Mylor and Fenton Creek fields, and is currently marketing the newly discovered Penryn field. An intensive new exploration program is being planned.

The presence of the Southwest Pipeline (and a reasonable tariff on this pipeline) must act to stimulate further exploration in this region. In the absence of a pipeline connection to Melbourne, the likelihood is that small fields would not be economic to develop, and therefore exploration would not occur (small field developers could not afford to build a stand-alone pipeline connection to Geelong, nor could the Western zone absorb more than a small level of production).

[10] Such as procedures for allocation of exploration permits, revocation of authorisation of joint venture marketing and emergence of new producers.

The Minerva field is awaiting development, and this field could also utilise the Southwest Pipeline for carriage of some or all of the reserves to the Victorian demand centres. This field is permitted to BHPP, but to the extent that BHPP is distinct from the Esso-BHP Joint Venture in Bass Strait, there may be some prospect of further competitive pressure on Bass Strait.

(ii) Peak Supply

Currently firm gas supply on the peak day is obtained by use of the existing peak delivery rights under the Esso-BHP contract, plus use of LNG to shave the 'needle peak'[11]. These sources of peak supply are almost fully utilised, as shown in Annexure 3. Moreover it is our understanding that peak supply entitlements from Bass Strait will be reduced in 2001.

In the absence of adequate peak supplies, the retailers must source more gas from Moomba, purchase additional peak delivery rights from Esso-BHP at Longford, or purchase capacity in the underground storage.

The underground storage will be available in winter 2001 for withdrawals of up to 200 TJ/day. This facility is designed principally for seasonal supply during the winter. It is in direct competition with the peak deliverablity provided by the Esso-BHP producers at Longford, and therefore significantly diminishes their market power. The Southwest Pipeline is essential to the prospects for the underground storage as a source of competition to Bass Strait. Moreover, a competitive tariff on the Southwest Pipeline is required to facilitate this competition.

(c) Summary

The Southwest Pipeline is principally an injection pipeline which connects a new source of gas to the main demand centres. This places it in a different category to a pipeline extension designed to serve new customers. An injection pipeline supplies gas into the Victorian gas market pool where it is available to all users. Hence the benefits from competitive pressures on the incumbent supplier are system-wide.

The Southwest Pipeline also stimulates exploration in the Otway region, particularly for smaller fields which individually could not economically justify the building of a dedicated connection to the market. Therefore more gas will be made available to the market, and competition will increase.

However, the main competitive benefit of the Southwest Pipeline is that it enables the 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.

Unfortunately, it is not possible to predict the likely level of utilisation of a competitive injection pipeline (unlike an extension which is designed to serve known loads). The very

[11] Plus a small contribution from Culcairn imports.

existence of the pipeline ensures that competition will occur, but the results of that competition are unpredictable. For example, Esso-BHP could capture the majority of the load by offering the best price, and the utilisation of the Southwest Pipeline would be correspondingly low. However, in the absence of the pipeline, the price offered from Esso-BHP would be largely uncapped.

Therefore, the Southwest Pipeline can offer the significant benefits of enhanced competition. These benefits, in combination with system security benefits, are sufficient to justify the increase in the Longford injection charge, as demonstrated in section 5.6.

5.5 Valuing increased competition

The Australian gas industry is only just beginning the process of competition reform, and the benefits of competition are not yet clearly evident. However they are widely attested to in the United States and Canadian gas markets where competition is well entrenched.

In order to place a value on the benefits of increased competition, we can consider the following two examples, in which the tariffs under the roll-in proposal are compared to the tariffs which would prevail under an alternative 'stand-alone' tariff proposal.

Under a 'stand-alone' proposal, the Port Campbell injection tariff would recover the full costs of the New Facilities within the Southwest zone. A 'stand-alone' injection tariff would be of the order of $7-10/GJ on the 5 peak days, as compared to the Longford tariff which would remain at its current value of $2.26/GJ over the 5 peak days (all pre-GST).

In the first example, we consider the economics of an industrial user seeking supply from a newly developed gas field at Port Campbell. Under the 'stand-alone' proposal the peak tariff of $7-10/GJ on the 5 peak days is equivalent to $0.12-0.17/GJ annually for a typical industrial user. The tariff on the Longford pipeline would be $2.26/GJ on the 5 peak days which corresponds to $0.04/GJ annually for an industrial user. The difference of $0.08-0.13/GJ is the price disadvantage to the Port Campbell field due to transport costs alone. This price difference could be a significant disincentive to development of new fields at Port Campbell.

As a further example, we consider the impact of the roll-in strategy on the market power of the incumbent Bass Strait producers in respect of peak deliverability. If an existing Retailer wishes to increase firm deliveries from Bass Strait, they must purchase additional peak deliverability. The Bass Strait producers could theoretically charge the opportunity cost of the next best source, which is the cost of Underground Storage capacity, plus the difference between the Port Campbell and Longford injection charges.

If the roll-in proposal is accepted, the price difference for transport costs is zero. Alternatively, if the roll-in proposal is not accepted, the price difference is $7-10/GJ less $2.26/GJ on the 5 peak days, or approximately $4.7-7.7/GJ on the 5 peak days. For a residential market load, this corresponds to a price difference of $0.16-0.26/GJ annually.

It is conceivable that this price difference could be claimed by the incumbent Bass Strait producers in the form of a higher price for new peak deliverability.

5.6 Justifying an increase in Reference tariffs

GPU GasNet believes that the system-wide benefits demonstrated in sections 5.2 to 5.5 are sufficient to justify the increase in the Longford tariff, and that the revised tariffs for the Southwest Pipeline and the Longford pipeline will promote and enhance competition in the market.

In making an evaluation of the justification for an increase in Reference Tariffs under the System-Wide Benefits Test, GPU GasNet believes that the Commission should consider both the extent to which existing Reference Tariffs are increased, and the relevance of the pricing strategy to the system benefits obtained. These issues are discussed below.

(a) Increase in Reference Tariffs

The pricing strategy described in section 6.1 requires the construction of a "joint injection asset", which recovers the on-going joint revenue requirement of the Longford and Southwest Pipelines from the combined flows through these pipelines. This procedure equates the two injection tariffs, which makes users indifferent to the source of their gas.

One consequence is that users of the Longford pipeline (the majority of Victorian customers) may pay more than they otherwise would. The amount of additional revenue obtained from the Longford pipeline is the relevant cost that must be justified as warranted by the system-wide benefits. However the amount of additional revenue at the higher tariff depends on the forecast flows on this pipeline. Clearly if the Southwest Pipeline is utilised heavily and less gas is carried from Longford, then the additional revenue paid by the Longford users will be lower. If on the other hand the Longford suppliers capture a significant level of new load (by offering better prices) then the Southwest Pipeline will be lightly utilised, and the Longford users will pay more as additional revenue.

In order to assess the level of the additional revenues paid, the following assumptions have been made:

- Longford flows are as originally forecast in the Access Arrangement until 2002, and thereafter there is a sharing of the peak supply shortfall between Longford and Port Campbell (see Annexure 3 for forecasts beyond the current regulatory period).

- A similar pricing model is in place beyond this regulatory period and until the assets are fully depreciated[12].

The results of this calculation show that the Longford users pay a contribution to the Southwest Pipeline which recovers approximately 60% of the investment. The increase in the Longford revenues is 40% in the early years, and approximately 50% over the life of the asset. This is comparable to the 40% by which the Longford pipe has been depreciated since construction. The higher charge on the Longford pipeline in large part redresses the difference in vintage between the two competing pipelines.

GPU GasNet considers that these increases are appropriate compared to the benefits, particularly to competition, that arise from the existence of the Southwest Pipeline.

[12] Note that GPU GasNet is not proposing any particular method of cost allocation and pricing for the next regulatory period. This will be determined at the relevant time.

Equating the injection charges from Longford and from Iona has the effect of setting a "level playing field" for retailers/traders in sourcing their gas (at least as far as transmission charges are concerned).

It is understood that the roll-in proposal conflicts with the standard economic principle of user-pays. Whilst this principle is generally valid it is not applicable in all situations. This Application is concerned with competing injection pipelines (of different vintages) and a market which lacks strong well-head competition, which means that the price signals sent by cost-reflective transportation tariffs on competing pipelines could be absorbed into higher peak supply charges from the incumbent producers. This is a peculiarity of the Victorian supply/demand situation, which is dominated by a very peaky residential demand requiring firm service, and the limited economical supply options to meet these peaks.

(b) Relevance of the tariff strategy

In seeking to justify an increase in existing Reference Tariffs, it is necessary to demonstrate that the increase is relevant to the system benefits that are obtained.

In general terms the system benefits associated with the Southwest Pipeline are obtained by all Victorian users, and hence any approved increase in tariffs should apply equally to all users. In the first instance, this would imply a constant increase in withdrawal tariffs. However, since the vast majority of gas sales will be injected at Port Campbell and Longford, any increase in the Longford injection charge, and decrease in the Port Campbell injection charge, will flow through to the majority of users in Victoria.

The remaining sources of gas supply in Victoria are the Interconnect and the LNG facility. Injections through the Interconnect are not likely to significantly exceed the current 20 TJ/day flow, since the physical flows through the Interconnect are always subject to gas swaps. GPU GasNet does not believe it is appropriate to increase the Interconnect injection charge since this will detract from the economics of this competitive source of supply. The LNG facility is of limited capacity, and in practice most of this capacity will be reserved for severe winter scenarios.

Therefore GPU GasNet believes that the most effective method to align costs and benefits is to increase the Longford injection charge. This has the additional advantage that a measure of "competitive neutrality" is obtained, which will enhance gas-on-gas competition.

6 Tariff structure

6.1 Tariffs generally

On the premise that the capital cost of the Southwest Pipeline has been rolled-in to the GPU GasNet Capital Base, the next step is to determine how the Reference Tariffs are to be amended. In this regard, the key issues are:

(i) the pricing strategy;

(ii) setting the target revenue for the incremental costs;

(iii) the structure of the revised Reference Tariffs;

(iv) the timing of the change; and

(v) the impact on tariffs in subsequent regulatory periods.

6.2 Pricing strategy

In determining a pricing strategy, GPU GasNet is mindful of the difficulties of marketing a new injection pipeline which must compete with an existing pipeline in a competitive market. The relative utilisation of the Longford and Southwest Pipelines will depend on the degree of well-head competition between Longford and Port Campbell, and this cannot be predicted with any reasonable level of confidence.

As discussed in section 4.7, GPU GasNet believes that the most appropriate pricing strategy is to equate the Longford and Southwest Pipeline injection charges. A consequence of this strategy is to create a "level playing field" between Longford and Port Campbell, such that users are indifferent to the transmission price when sourcing their gas supplies.

GPU GasNet believes this strategy will lead to greater competition between Port Campbell and Longford, and stimulate field development in the Otway basin. This will lead to lower prices for gas in the longer term.

This strategy is considered to be appropriate given the fact that the two pipelines have almost the same length and supply the same market (under the commonly accepted volume-distance pricing model, the same tariff would apply to both pipelines despite the different vintage of each pipeline).

The potential for enhanced competition provided by the Southwest Pipeline has been documented in section 5. The benefits flowing from competition will be *magnified* by the proposed pricing strategy, since:

(i) the potential barrier of a high tariff on the Southwest Pipeline is reduced, and

(ii) the evolution of the Southwest Pipeline tariff will be more stable (a tariff based solely on flows through the Southwest Pipeline would be subject to radical revisions as forecasts of flows are re-assessed from time to time).

In ***Annexure 3*** of this Application, the Longford and Southwest Pipeline tariffs are determined to be $3.15/GJ pre-GST (an increase from the existing Longford charge which is $2.26/GJ pre-GST). By way of comparison, if a stand-alone tariff were to be calculated on the Southwest Pipeline, the charge would be in the range of $7-10/GJ. The GPU GasNet tariffing strategy therefore removes a significant potential barrier to use of the Southwest Pipeline and will enhance well-head competition.

6.3 Target revenue

The capital cost of the Southwest Pipeline is $82.8m. However GPU GasNet proposes to increase the Capital Base by only $75.5m, which acknowledges an arrangement under which the Victorian Government provided compensation of $7.3m to GPU GasNet for the estimated additional costs of accelerating the project for the Winter '99 Project. This amount of $75.5m constitutes the New Facilities Investment.

GPU GasNet proposes that the WACC and asset life used in calculating the return on the New Facilities Investment should be the same as approved by the Commission in determining the Reference Tariffs for the rest of the Principal Transmission System.

GPU GasNet has endeavoured to achieve the most attractive tariff on the Southwest Pipeline whilst causing the least possible impact on the Longford charge. This recognises the importance of these charges to the market, and to competition in general. There is also a recognition of the fact that conventional tariff methodologies lead to a front-loaded tariff (high tariff in the early years, and a significantly lower in later years), which can act as a barrier to utilisation of the pipelines.

Therefore GPU GasNet has instituted a number a measures which are designed to minimise the increase in the Longford charge and improve the attractiveness of this tariff proposal to the market. If the roll-in application under the system-wide benefits test is accepted, these measures will be that:

(i) The economic life of the Southwest Pipeline will be set at 34 years, which is the average life of the Principal Transmission System.

(ii) A total of $8.2m of depreciation in the years 2000-2002 will be deferred, in comparison with the depreciation implied by a real, straight-line depreciation schedule. It is generally acknowledged that this strategy leads to greater regulatory and market risk. However GPU GasNet accepts this risk in the context of this roll-in application.

(iii) Beyond 2002, GPU GasNet proposes to levelise the target revenue (as calculated by a cost of service method) over the first twenty years. As shown in Annexure 3, this approach significantly decreases the target revenue in the early years (when flows are lower), but increases the target revenue in later years (when flows are higher).

(iv) If the roll-in proposal as presented in this Application is accepted by the Commission, then GPU GasNet will offer to relieve the three foundation Retailers of certain take-or-pay obligations to GPU GasNet under Transmission Entitlement Deeds with GPU GasNet.

The result of these measures is that the target revenue for the Southwest Pipeline over 2000-2002 inclusive is reduced from $20.0m (under a standard methodology) to $12.2m.

6.4 Tariff structure

As discussed in detail in ***Annexure 3***, GPU GasNet proposes to amend its Reference Tariffs by:

(i) introducing a new Southwest zone, to which a new Reference Tariff will apply; and

(ii) increasing the existing Reference Tariff at the Longford Injection Point.

The Southwest Pipeline is a Market Carriage pipeline. This means that tariffs must be based on actual flows, and that injections are conceptually decoupled from withdrawals. Following the connection of the Southwest Pipeline to the Western Transmission System, the Western Transmission System is also expected to become a Market Carriage pipeline (a separate tariff proposal will be made for this pipeline). The Southwest Pipeline will therefore become part of an enlarged Principal Transmission System which extends from Longford in the east, from Culcairn in the north, and to Portland in the west.

The Southwest zone incorporates a new injection point, and a number of new withdrawal points, within the enlarged Principal Transmission System. The injection point at Port Campbell encompasses injections from a number of fields in the Port Campbell area, including North Paaratte, Mylor, Fenton Creek and the Western Underground Storage at Iona. For tariff purposes, these sources are treated as a single injection point, to be designated as the Port Campbell Injection Point.

The injection tariff at Port Campbell is charged on the flows on the five peak days when maximum combined injections are made from Longford and Port Campbell. This charge, in conjunction with the increased Longford tariff, recovers the incremental capital and operating costs of the Southwest Pipeline.

A matched injection factor for the entire charge is offered to Retailers on the Western Transmission System who can match demand in the Western Transmission System to injections at Port Campbell.

A number of new withdrawal points will be created on the Southwest Pipeline. These include possible off-takes at Colac and Simpson, and refill withdrawals into the Western Underground Storage.[13]

Under the current Access Arrangement, westerly (non-peak) flows leaving the Principal Transmission System at Lara are charged the Metro "Anytime" charge, which recovers the operating costs for transportation through the Metro zone. Since the Lara off-take ceases to exist as a withdrawal point on the enlarged Principal Transmission System, this charge will be transferred to the Western Underground Storage withdrawal points at Iona. No additional revenue is obtained from this charge.

New withdrawal points on the Southwest Pipeline (such as Colac) will also be assigned the Metro "Anytime" charge, on the assumption that in non-peak periods the withdrawal volumes will be supplied via Lara. However, these users (and the refills into the Western

[13] Note that withdrawals from the Principal Transmission System do not occur at Lara, since gas simply flows through this point in the enlarged Principal Transmission System.

Underground Storage) may claim a matched withdrawal rebate on any matched volumes injected at Port Campbell, in which case the withdrawal charge will reduce to the non-locational "Anytime" charge.[14]

6.5 Timing of the change

In calculating the proposed revised tariffs, GPU GasNet has assumed that the new tariffs will commence on 1 October 2000.

GPU GasNet recognises that a significant period has elapsed between the date of commissioning of the Southwest Pipeline (1 June 1999) and the date when approved tariffs will commence. The Code in section 8.16 is not clear as to how this situation is handled with respect to New Facilities Investment. Some guidance may be gained by considering section 8.13, which applies to new pipelines. As envisioned by section 8.13, where a significant period has elapsed between commissioning of a pipeline and approval of a tariff, the opening value of the asset must be reduced by the amount of depreciation implied by the Depreciation Schedule between the commissioning date and the date when tariffs are applied. In this instance, GPU GasNet interprets the appropriate Depreciation Schedule to mean the depreciation implied by real straight-line depreciation. This is the method that is commonly accepted to apply in conducting a DORC valuation on existing pipelines, and although this is a new pipeline, GPU GasNet considers that the same methodology is appropriate in this case.

Therefore, as discussed in ***Annexure 3***, GPU GasNet has established the opening value for the New Facilities Investment as $73.02m as at 1 October 2000.

6.6 Subsequent regulatory periods

The Access Arrangement for the Principal Transmission System does not prescribe the cost allocation procedures or tariff structures for subsequent regulatory periods (after December 2002). Given the radical changes that have occurred in the Victorian gas market to date, GPU GasNet is not prepared to commit to a regulated pricing strategy to apply to the Southwest Pipeline or the Principal Transmission System in the longer term. Hence GPU GasNet does not intend to prescribe any new fixed principles to apply to the Southwest Pipeline.

However in keeping with the philosophy behind the pricing strategy presented in this Application, GPU GasNet would expect that, all else being equal, a joint and equal tariff will continue to be offered for injections on the Southwest Pipeline and the Longford line.

A number of issues arise where the longer run pricing strategy may impact on the tariff proposal for this regulatory period. For example:

[14] The Metro Anytime charge consists of a recovery of non-locational costs, and a recovery of locational O&M for transmission through the Metro zone.

- Could the proposal lead to significant rate shock, or increasing real tariffs, or other undesirable outcomes in subsequent periods?

- With respect to the System-Wide Benefits test, what is the total incremental cost which is not directly recoverable from the users of the new facility?

The answer to the second question is relevant to the assessment of the System-Wide Benefits Test in the Access Arrangement "….that a New Facility has system-wide benefits which justify the approval of a higher Reference Tariff for all Users".

The amount that is recoverable from other users could vary from 0% to 100% of the New Facility Investment, depending on how the Reference Tariffs are revised. Clearly, a lower level of associated system-wide benefit would require a lower level of cost sharing, and *vice versa*.

In order to answer these questions, GPU GasNet has extrapolated the revenue requirement for the Longford pipeline and the Southwest Pipeline, and has derived a reasonably likely tariff path for the life of the joint assets. This is described in ***Annexure 3***.

The results of this modelling show that the tariff path for the joint Longford/Southwest Pipeline asset will fall in real terms over the life of the assets[15], ignoring any future augmentations to these facilities (which must separately pass the tests in section 5.7.2 of the Access Arrangement). The pricing strategy is robust to a range of future developments, including a major new flow to South Australia utilising the Southwest Pipeline.

The projections indicate that an amount of the order of 60% of the SWP investment is recoverable from the increased Longford charge, depending on the gas sales forecast assumed. The remainder is recoverable from flows on the pipeline itself.

7 Prudent investment

As discussed in section 4.6, the New Facilities Investment must also satisfy clause 8.16(a) of the Code. Clause 8.16(a) is satisfied if the amount of the New Facilities Investment does not exceed the amount that would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest cost of delivering the services.

GPU GasNet considers that the design and construction of the New Facilities meet these requirements.

[15] Except for a small increase of 3% in 2003.

7.1 Cost breakdown

The Southwest Pipeline was built under an accelerated timetable in response to the Longford fire and explosion, as part of the broader Winter '99 project. The pipeline and facilities (with the exception of the Iona compressor) were constructed over a period of only 6 months. Under normal circumstances a pipeline of this size would be constructed over at least 18 months.

As a result of the accelerated timetable certain costs were estimated to be higher than they would have been under a normal schedule. The Victorian Government compensated GPU GasNet for an amount of $7.3m, which has been deducted from the total actual cost to give a New Facilities Investment of $75.5m. This is the amount that is to be rolled-in to the Capital Base.

A detailed description of the design and function of each component of the Southwest Pipeline is given in ***Annexure 1***. The cost of each component of the Southwest Pipeline (after deduction of payments for acceleration) was:

Item	Cost
Southwest Link	$59.4m
Western System Link	$1.7m
Lara Regulator	$3.9m
Brooklyn Regulator	$4.1m
Iona Regulator	$2.5m
Iona Compressor	$3.9m
Total	**$75.5m**

Note:
Interest during construction of $0.5m has been allocated over each asset.

7.2 Design

The Southwest Pipeline performs a wide range of functions. It must carry gas from two gas processing plants located at North Paaratte and Iona, in both easterly and westerly directions, and it must also carry gas from Lara to the underground storage during the summer refill, and to the Western Transmission System. The complexity of these functions is reflected in the requirement for the three pressure and flow control facilities associated with the pipeline.

The Southwest Link (Lara-Iona) was built with a diameter of 500 mm. and a Maximum Allowable Operating Pressure (MAOP) of 10,000 kPa. The pipeline can deliver 200 TJ/day into the Metro zone, which matches the design capacity and delivery pressure of the underground storage.

The Western System Link was an existing gathering line for the North Paaratte processing plant. It was purchased from the owner and supplemented with scraper stations, valves, and extensions at North Paaratte and Iona. The diameter of the pipeline is adequate to supply the Western Transmission System.

Further description and details of the design philosophy of the Southwest Pipeline are provided in ***Annexure 1.***

7.3 Prudent Investment

GPU GasNet (then TPA) ensured that prudent and efficient practices were employed in the construction of the pipeline and facilities by using the appropriate tendering processes for the major components of the project. GPU GasNet was also heavily involved in the design and project management of the pipeline and facilities.

It is generally understood that pipeline costs can vary significantly given the unique circumstances of each pipeline. Costs can vary according to the availability of materials and construction crews, the exchange rate, the nature of the terrain, the ability to obtain easements, the difficulty of native title negotiations, the existing land-use and the number of road, rail and river crossings.

GPU GasNet has attempted to draw comparisons between this pipeline and other pipelines built around Australia in recent times. A summary of this review is given in ***Annexure 5***. The review clearly illustrates the wide range of costs that can occur in practice. Based on a comparison with recent industry experience, the unit cost of the Southwest and Western System Links is close to the average. In summary, the Southwest Pipeline experienced a better than average supply and demand situation in engaging construction crews and securing pipe supply, but a poorer than average terrain and land-use en route.

The remaining costs refer to the compressor station at Iona and the regulators and control facilities at Iona, Lara and Brooklyn. These facilities have a total cost (after deducting an amount for acceleration costs) of $14.4m, of which $3.9m is for the compressor station. It is not practicable to obtain benchmarks for these facilities because of the specific design requirements of each facility, which are described in detail in ***Annexure 1***. The designs were strongly influenced by the need to perform a wide range of functions, as described above.

8 Annual Operation and Maintenance costs

The revised Reference Tariffs incorporate the following annual allowances for incremental operation and maintenance costs:

(i) Pipelines (including valves) - $0.14m;

(ii) Facilities (regulators and compressors) - $0.11m; and

(iii) Compressor and heater fuel - $0.10m.

The fuel costs cover approximately 10 TJ/annum in each of the Brooklyn and Lara heaters, and 20 TJ/annum as fuel for the Iona compressor station.

The operating and maintenance cost for the facilities consists of $0.09m/annum for the Iona compressor station and city gate. The remainder is principally communications costs at Lara.

The pipeline operating and maintenance costs are principally pipeline patrol and valve maintenance.

These costs are likely to increase over time as major maintenance tasks become due outside the time frame of this regulatory period.

Together, the operation and maintenance costs of the Southwest Pipeline amount to $0.35m or, in relation to the length of the Southwest Pipeline, approximately $2.3m per 1,000 km. This compares favourably with the $16m per 1,000 km (in $1998) accepted by the Commission as part of the Access Arrangement[16].

[16] ACCC Final Decision, section 3.6.2, p. 68.

9 Definitions

In this application, unless a contrary intention appears:

"**Access Arrangement**" means the Access Arrangement by TPA and TPAA for the Principal Transmission System which was approved by the Commission on 16 December 1998 and which, under the Code, binds GPU GasNet;

"**Capital Base**" has the same meaning as in the Code.

"**Code**" means the National Third Party Access Code for Natural gas Pipeline Systems set out in Schedule 2 of the Gas Pipelines Access (South Australia) Act 1997, as amended or replaced from time to time;

"**Commission**" means the Australian Competition and Consumer Commission;

"**EAPL**" means Eastern Australian Pipeline Limited;

"**Economic Feasibility Test**" has the same meaning as in the Access Arrangement;

"**EGP**" means Eastern Gas Pipeline, the proposed Duke transmission pipeline between Longford and Sydney.

"**Expansion**" has the same meaning as in the Access Arrangement;

"**Extension**" has the same meaning as in the Access Arrangement;

"**Extensions/Expansions Policy**" has the same meaning as in the Access Arrangement and, for ease of reference, is reproduced in **Annexure 4**;

"**Gascor GSA**" means the gas supply agreement between Gascor Pty Ltd and Esso/BHP and the associated arrangements for on-selling that gas to several gas retailers;

"**GJ**" means gigajoule;

"**initial regulatory period**" has the same meaning as in the Tariff Order;

"**Injection point**" has the same meaning as in the Tariff Order;

"**Southwest Pipeline**" means the natural gas pipeline and associated facilities extending from Lara to North Paaratte, plus the Brooklyn city gate, as described in detail in Annexure 1 and shown in the attached map;

"MAOP" means Maximum Allowable Operating Pressure", which is the design pressure for a pipeline as described in the pipeline licence;

"**MDQ**" means maximum daily quantity;

"**Principal Transmission System**" has the same meaning as in the Access Arrangement;

"**Reference Tariffs**" has the same meaning as in the Access Arrangement.

"**System-Wide Benefits Test**" has the same meaning as in the Access Arrangement;

"**Tariff Order**" means the Order-in-Council (Victorian Gas Industry Tariff Order 1998, as amended from time to time) made by under section 48A of the Gas Industry Act 1994;

"**Transmission zone**" has the same meaning as in the Tariff Order;

"**TPA**" means Transmission Pipelines Australia Pty Ltd;

"**TPAA**" means Transmission Pipelines Australia (Assets) Pty Ltd;

"**Valves**" means the three remotely operated pressure limiters at Barnawatha, Wandong and Ballan and the automated value at Wollert; and

"**VENCorp**" has the same meaning as in the Gas Industry Act 1994.