



Submission to ACCC

**Draft Decisions on GasNet's and VENCORP's proposed
Revised Access Arrangements for the PTS**

**VENCORP
13 September 2002**

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Submission on Draft Decisions on GasNet's and VENCORP's proposed Revised Access Arrangements for the PTS

13 September 2002

1 Executive Summary

- VENCORP accepts the amendments proposed by the Commission in its Draft Decision of 14 August 2002 on VENCORP's proposed Revised Access Arrangements, as lodged on 28 March 2002.
- VENCORP has lodged amended Revised Access Arrangement and Revised Access Arrangement Information accordingly.
- VENCORP accepts that GasNet provides transmission services to VENCORP (as a User of GasNet's services), and VENCORP in turn provides services to other Users. This is in addition to any services provided directly by GasNet to other Users¹.
- In amending its Services Policy pursuant to the Commission's draft decision, VENCORP notes that the amendments made by it to comply with the Commission's draft decision are contingent upon:
 - amendments to GasNet's Revised Access Arrangement consistent with the draft decision by the Commission in regard to GasNet's Services Policy; and
 - the actual drafting of the amendments to GasNet's Revised Access Arrangement, which are yet to be completed.
- The Commission's draft decision does not require GasNet to include the Service Envelope Agreement in its Revised Access Arrangement, but does require GasNet to include the terms and conditions on which GasNet supplies the services to VENCORP, which in turn are set out in the Service Envelope Agreement and the MSO Rules. As the Service Envelope Agreement is the agreement which, for the purposes of clause 5.3.1(a) in the MSO Rules, describes GasNet's role in the transportation of gas, VENCORP supports the Commission's proposed amendments #33 and #34 in its draft decision on GasNet's Revised Access Arrangement.
- VENCORP would support the Commission requiring both VENCORP and GasNet to publish or make available to Users the Service Envelope Agreement as in force from time to time, to ensure that Users and Prospective Users are able to understand all the conditions which apply to the transportation of gas.
- VENCORP believes that the proposed methodology of demand forecasting is incorrect for planning purposes, but accepts the use of the methodology for tariff-setting purposes since the impacts are minimal upon VENCORP.

¹ A description of the relationship between GasNet and Users appears at pages 3 and 4 of TXU's submission to the Commission regarding GasNet's revised access arrangement: *Submission on ACCC Issues Paper of Applications for Revision lodged by GasNet Australia (Operations) Pty Ltd and Victorian Energy Networks Corporation 19 April 2002*; dated 31 May 2002, pp3-4

- The marginally reduced forecast gas volumes result in an accumulated reduction on paper in forecast revenues of about \$340k (in dollars of the day) over the regulatory period. However, VENCorp is proposing to maintain the tariffs at the levels set out in its 28 March submission, consistent with the approved budget for the current financial year of 2002/03.

2 Draft Decisions by the Commission

The Commission required² the following amendments to be made to VENCorp's proposed revisions to its Access Arrangement for the Principal Transmission System ('PTS'):

Proposed amendment 1

VENCorp must remove the fifth dot point of clause 5.2.2 (a) (i) that provides for VENCorp to introduce a new commodity tariff in the form of a prudent discount.

Proposed amendment 2

VENCorp must amend its total annual demand forecasts in Table 23 and Table 24 of its revised access arrangement information so that they are consistent with those proposed in section 7 of GasNet's revised access arrangement information.

Proposed amendment 3

VENCorp must clarify Clause 5.1.1 of its revised access arrangement that VENCorp provides to users, not only VENCorp Reference Services, but also the transportation of gas through the PTS via the Market Carriage system under the MSOR.

The Commission correspondingly required the following amendments³ to be made to GasNet's proposed revisions to its Access Arrangement for the Principal Transmission System ('PTS'):

Proposed amendment 33

GasNet must amend clause 3 of its revised access arrangement, services policy, to include the services that GasNet supplies to VENCorp (that is, making the PTS available to VENCorp in accordance with the SEA and the MSOR). In addition, the reference 'VENCorp Services' in clause 3.2 must be changed to 'VENCorp Reference Services'.

Proposed amendment 34

GasNet must amend clause 8.1 of its revised access arrangement, terms and conditions, to include the terms and conditions on which GasNet supplies the services to VENCorp (which in turn are set out in the SEA and the MSOR).

VENCorp accepts the amendments proposed by the Commission in regard to its Revised Access Arrangement for the PTS.

An amended Revised Access Arrangement and amended Revised Access Arrangement Information have been lodged with the Commission accordingly.

This submission covers:

- amendments made to VENCorp's Services Policy in accordance with the draft decision, and a submission on the draft decision on the GasNet Access Arrangements, in regard to the proposed amendments #33 and #34 relating to the Services Policy of GasNet and the relevant Terms and Conditions for the Reference Services; and
- a review of the demand forecasting matter to assist Users in understanding the implications of the Commission's draft decision under proposed amendment #2.

² ACCC: *Draft Decision on VENCorp Access Arrangement Revisions*; 14 August 2002; page (ix)

³ ACCC: *Draft Decision on GasNet Australia Access Arrangement Revisions*; 14 August 2002; pages 191-192, and page 195, respectively

3 Services Policy

VENCorp must clarify Clause 5.1.1 of its revised access arrangement that VENCorp provides to users, not only VENCorp Reference Services, but also the transportation of gas through the PTS via the Market Carriage system under the MSOR.

The Commission has proposed amendments to the Services Policy as set out in each of the VENCorp and GasNet access arrangements. VENCorp understands and accepts that, in proposing these amendments, the intention of the Commission is to clarify the respective roles of VENCorp and GasNet in providing transportation services to users of the PTS. In particular, the proposed amendments would clarify that GasNet provides gas transportation services and pipeline capacity to VENCorp, in making the PTS and its capacity available to VENCorp in accordance with the Service Envelope Agreement and the MSO Rules, to enable VENCorp to provide the VENCorp Reference Services and facilitate transportation of gas through the PTS under the MSO Rules.

The Commission's draft decision states⁴ that "*VENCorp is the entity that supplies the whole service to retailers*".

While it is the independent operator of the PTS, VENCorp owns no gas transportation infrastructure or facilities, and does not trade in gas. The effective transportation of gas will only occur as a consequence of, and is an outcome of, many activities involving a number of parties in the supply chain.

GasNet also provides services directly to Users, such as connection services, and services relating to extensions and expansions of the PTS⁵.

Therefore, in accepting the proposed amendment, VENCorp notes its strong dependence and reliance upon the form of the Services Policy (and in particular, the appropriateness of the drafting of the Reference Services) provided by GasNet in any amendments to its Access Arrangement.

The Commission has acknowledged this strong dependency in its draft decision on VENCorp's Revised Access Arrangement, noting that⁶ "*VENCorp's ability to provide the VENCorp reference services is dependent upon GasNet making available the PTS to VENCorp to operate in accordance with the MSO Rules*".

Nevertheless, in its proposed Revised Access Arrangement as submitted in March 2002, GasNet has avoided reference to its role in the transportation of gas. The requirement is clear: GasNet must provide *gas transportation services and pipeline capacity* under a service envelope agreement. This is required by clause 5.3.1 of the MSO Rules which states (emphasis added):

⁴ ACCC: *Draft Decision on VENCorp Access Arrangement Revisions*; 14 August 2002; Section 4.1.1, page 30

⁵ A description of the relationship between GasNet and Users appears at pages 3 and 4 of TXU's submission to the Commission regarding GasNet's revised access arrangement: "*Submission on ACCC Issues Paper of Applications for Revision lodged by GasNet Australia (Operations) Pty Ltd and Victorian Energy Networks Corporation 19 April 2002*"; dated 31 May 2002, pp3-4

⁶ ACCC: *Draft Decision on VENCorp Access Arrangement Revisions*; 14 August 2002; page 29

5.3.1 Agreement for provision of transportation services

- (a) Prior to the commencement date, **VENCorp and a Transmission Pipeline Owner must** enter into a service envelope agreement, and thereafter must at all times **ensure that there is a valid service envelope agreement in force between them, under which** the Transmission Pipeline Owner [i.e. GasNet] **agrees, amongst other things, to provide to VENCorp gas transportation services and pipeline capacity** by means of the pipelines of that Transmission Pipeline Owner which form part of the transmission system on terms which are not inconsistent with:
- (1) the access arrangement, if any, of the Transmission Pipeline Owner; and
 - (2) the Tariff Order, if applicable.
- (b) A service envelope agreement must specify the capacity of the Transmission Pipeline Owner's pipelines available for use by VENCorp at system points on the pipeline under various operating conditions.

GasNet has been required by the Commission⁷ to amend its Services Policy to include the Reference Services that it provides to VENCorp:

"The Commission has concluded that GasNet is supplying a service (the tariffed transmission service) to VENCorp within the meaning of section 10.8 of the Code. GasNet describes this service as being the availability of the PTS, which it states is sourced by VENCorp from GasNet through the SEA. The Commission has concluded that VENCorp is a user of this service as it has a current contract (the SEA) with GasNet for this service.....

The Commission has also concluded that GasNet should include in its services policy the services that it supplies to VENCorp (that is, making the PTS available to VENCorp in accordance with the SEA and the MSOR)."

The amendments made by VENCorp to its Revised Access Arrangement to comply with the Commission's draft decision are contingent upon:

- amendments to GasNet's Revised Access Arrangement consistent with the draft decision by the Commission in relation to GasNet's Services Policy; and
- the actual drafting of the amendments to GasNet's Revised Access Arrangement, which are yet to be completed.

In clause 5.1.2 of its proposed Revised Access Arrangement, VENCorp describes⁸ the Market and System Operational Services as including the operation and control of the PTS and its security.

In clause 5.4, VENCorp states⁹ that "The Principal Transmission System is a **Market Carriage** system of pipelines" (emphasis added).

In clause 5.3, VENCorp states¹⁰ that it "will operate the [PTS] made available to it by GasNet pursuant to GasNet's Access Arrangement and the [SEA] for Users **in accordance with the MSO Rules**" (emphasis added).

⁷ ACCC: *Draft Decision on GasNet Australia Access Arrangement Revisions*; 14 August 2002; pages 191-192

⁸ VENCorp: *Revised Access Arrangement for the Principal Transmission System by Victorian Energy Networks Corporation (VENCorp)*; submitted 28 March 2002; page 6

⁹ VENCorp: *Revised Access Arrangement for the Principal Transmission System by Victorian Energy Networks Corporation (VENCorp)*; submitted 28 March 2002; page 14

Accordingly, VENCorp has amended its Revised Access Arrangement by amending clause 5.1.1 in the following manner¹¹ (which, as noted, is contingent upon the form of the Services Policy provided by GasNet in its amendments):

"5.1.1 Services Policy

~~VENCorp provides the VENCorp Reference Services. GasNet provides the GasNet Transmission Services.~~

The transportation of gas through the Principal Transmission System is dependent upon the availability of the Principal Transmission System, both in terms of its capacity and serviceability, the availability of gas at each injection point at appropriate pressures, and the operation of the Principal Transmission System to co-ordinate these and other actions.

Thus, in providing transportation services to Users of the Principal Transmission System, GasNet provides gas transportation services and pipeline capacity to VENCorp in accordance with the Service Envelope Agreement and the MSO Rules, and VENCorp operates the Principal Transmission System in accordance with the MSO Rules.

This section 5.1 describes VENCorp's Reference Services, which is how VENCorp provides for the transportation of gas through the Principal Transmission System for Users.

These Reference Services, and hence VENCorp's role in transportation of gas for Users on the Principal Transmission System, are dependent upon:

- suppliers injecting gas as required into the Principal Transmission System in accordance with the MSO Rules; and
- GasNet providing gas transportation services and pipeline capacity for the Principal Transmission System in accordance with a valid service envelope agreement.

To understand what GasNet must provide to facilitate VENCorp's provision of the VENCorp Reference Services, Users must consult GasNet's access arrangement, which describes the GasNet Transmission Services and the Service Envelope Agreement as in force from time to time.

Relevant terms and conditions for VENCorp's Reference Services are set out in section 5.3 of this Access Arrangement."

The Commission's draft decision does not require GasNet to include the Service Envelope Agreement in its Revised Access Arrangement, but does require GasNet to include the terms and conditions on which GasNet supplies the services to VENCorp, which in turn are set out in the Service Envelope Agreement and the MSO Rules. As the Service Envelope Agreement is the agreement which, for the purposes of clause 5.3.1(a) in the MSO Rules, describes GasNet's role in the transportation of gas, VENCorp supports the Commission's requirements¹².

VENCorp also notes that to date, confidentiality restrictions in the Service Envelope Agreement have impeded VENCorp sharing with Users the details of amendments made to that agreement. Therefore, VENCorp would support the Commission requiring both VENCorp and GasNet to publish or make available to Users the Service Envelope Agreement as in force from time to time.

¹⁰ VENCorp: Revised Access Arrangement for the Principal Transmission System by Victorian Energy Networks Corporation (VENCorp); submitted 28 March 2002; page 13

¹¹ Where a strikethrough represents a deletion from the Revised Access Arrangements submitted to the Commission on 28 March 2002, and underlining indicates an addition to same.

¹² That is, proposed amendments #33 and #34 in the Commission's draft decision on GasNet's Revised Access Arrangement.

4 Demand Forecasting

VENCorp must amend its total annual demand forecasts in Table 23 and Table 24 of its revised access arrangement information so that they are consistent with those proposed in section 7 of GasNet's revised access arrangement information.

VENCorp has amended the demand forecasts in tables 23 and 24 of its Revised Access Arrangement Information in compliance with the draft decision. As a consequence of the adopting these amendments, VENCorp has also updated¹³:

- various tables of the Revised Access Arrangement Information relating to forecast demands, and those tables with forecast financials which are dependent upon forecast volumes;
- the financial statements in Appendix 1 of the Revised Access Arrangement Information.

In so doing, VENCorp has kept the tariffs at the levels set out in its 28 March 2002 submission.

VENCorp still has some concerns with the methodology for load forecasting that this proposal involves, and with the potential implications of the proposed amendment for financial reporting and annual planning reviews. These concerns are summarised in this section and detailed further in Appendix 1 attached.

4.1 CSIRO Report

The CSIRO Report¹⁴ was provided as Annexure 8 of GasNet's Revised Access Arrangements.

VENCorp does not dispute this report nor its results, which we note are specifically about temperatures.

It is important that an appropriate assessment is undertaken of how the information provided by the report has been interpreted and applied for the forecasting of loads. VENCorp notes that the CSIRO did not develop forecast load models or provide interpretations as to how the data from their report should be used in this regard.

VENCorp commented¹⁵ in its submission on the Commission's Issues Paper that:

"In summary, VENCorp has corrected forecast loads for the trend in temperature observations due to localised urban heating effects whereas GasNet's adjustments to the VENCorp forecasts assumes there is a [the same urban] heating effect across the PTS as a whole.

The differences are not material when compared with the normal annual load variations due to weather cycles and load forecast uncertainty over 5 years.

This, and a later comment, about the immateriality of the differences was not intended to be taken as an acceptance of the methodology proposed by GasNet for forecasting of loads, rather, that VENCorp meant by this that VENCorp did not consider that the

¹³ A complete list of changes made to the Revised Access Arrangement Information has been submitted with these amendments.

¹⁴ Report by CSIRO for GasNet; Suppiah R., Whetton P.H., and Hennessy K.J.: *Projected changes in temperature and heating degree-days for Melbourne, 2003-2007*; November 2001 [presented to the Commission as Annexure 8 to GasNet Access Arrangement, 27 March 2002]

¹⁵ VENCorp: *Submission to ACCC on Access Arrangement Issues Paper*, 13 May 2002; page 21

difference was sufficiently material to warrant a change to the load forecasts utilised by either GasNet or VENCorp for tariff-setting.

VENCorp believes that the demand forecasts for the purposes of setting regulated tariffs should be undertaken on the basis of the best information at hand, and that any modelling should be adequately and appropriately justified.

As is detailed further in Appendix 1, VENCorp believes that the information provided in the CSIRO report has been incorrectly applied in this instance, and therefore that the methodology proposed by GasNet and accepted by the Commission in their draft decision for derivation of load forecasts is, in principle, incorrect.

However, the impact has minimal effect on the final results for establishing VENCorp's tariffs over this regulatory period, and VENCorp therefore accepts the Commission's proposed amendment.

4.2 VENCorp's APR

The draft decision notes the importance of an independent reference point for consideration of the forecasts utilised by the asset companies. In so doing, the Commission acknowledges¹⁶ that VENCorp's Annual Planning Review ('APR') is the optimum base to satisfy this requirement:

"The Commission considers that the VENCorp APR forecasts form a sound basis for the demand forecast that will be used to derive the tariffs to apply for the second access arrangement period."

The load forecasts utilised for the Access Arrangements are for the purpose of establishing the initial tariffs and price paths over the regulatory period for regulated service providers, with the resultant tariff design and settings locking in acceptable rates of return for the Service Providers for the regulatory period.

The purpose of VENCorp's APR is fundamentally different, being the provision of information on the current and future expected level of security and reliability in the state's gas supply, and insights to potential market opportunities in the future.

VENCorp is not intending to alter the load forecasting method for ongoing planning updates via the APR to the methodology proposed by GasNet for tariff-setting. The APR will continue to be based on the best interpretation of the information at hand, and methodologies, as may change from year to year. Therefore, it will be updated annually (and more frequently as required) to reflect the latest understanding of the current supply-demand-transmission situation.

4.3 Implications for future financial reporting by VENCorp

VENCorp is required to report on its financial and corporate performance each year to the Treasurer of Victoria and the Commission. To date, VENCorp has utilised its APR for the basis of projecting its budget position into future years for this reporting.

The inclusion of a different forecasting basis for future reporting on financial results to that contained in the APR is likely to cause further confusion and impose additional overheads upon VENCorp in the preparation and explanation of its financial reports and performance.

¹⁶ ACCC: *Draft Decision on VENCorp Access Arrangement Revisions*; 14 August 2002; page 21.

4.4 Implications for VENCorp's proposed tariffs

VENCorp's budget and tariff settings for the 2002/03 financial year, which overlaps the first 6 months of the first year of the new regulatory period, have been approved by the Commission, based on demand forecasts in accordance with the APR, and, hence, those proposed by VENCorp for its Revised Access Arrangements lodged on 28 March 2002.

The Commission's draft decision requires that VENCorp adopt GasNet's proposed methodology for load forecasting as the basis of setting its initial reference tariffs for the next regulatory period. GasNet's proposed methodology will result in marginally reduced forecast gas volumes.

The marginally reduced forecast gas volumes result in an accumulated reduction on paper in forecast revenues of about \$340k (in dollars of the day) over the regulatory period. However, VENCorp proposes to maintain the tariffs at the levels set out in its 28 March submission, consistent with the approved budget for the current financial year of 2002/03.

In so doing, we note that we would, *on paper*, be asking for a *further* real reduction in our charges beyond the significant real reduction previously proposed in our submission lodged in 28 March 2002.

4.5 Conclusion

VENCorp carefully considered the aspects of urban and global warming when it developed its load forecasts. VENCorp's load forecasts incorporate the identified urban warming effect for metropolitan loads, but this urban warming effect is not applied for the rest of the system.

In VENCorp's view, no clear case has been established for a more general application of the urban heating effect observed from data from the Melbourne CBD site to forecasting of loads located outside of the metropolitan area, and in particular across the rest of the state.

Nevertheless, VENCorp accepts the Commission's request for amendment to this methodology, as it imposes only minimal differences and on balance may offer the appeal of consistency when undertaking price-setting reviews across the industry.

VENCorp has therefore amended the forecast gas volumes in its Revised Access Arrangements and Revised Access Arrangement Information. Despite a small accumulated reduction in forecast revenues over the regulatory period arising from this, VENCorp proposes to maintain the tariffs at the levels set out in its 28 March submission, consistent with the approved budget for the current financial year of 2002/03.

Appendix 1 Comparison of GasNet and VENCorp forecasts.

A1.1 CSIRO Temperature Analysis

The CSIRO Report¹⁷ was provided as Annexure 8 of GasNet's Revised Access Arrangements.

GasNet commissioned the CSIRO to analyse temperature trends for the Melbourne metropolitan area, with an objective of projecting Melbourne temperatures out to 2007 expressed as Heating Degree Days ('DD'). The CSIRO utilised data from the Bureau of Meteorology ('BOM').

The CSIRO used greenhouse models to produce High and Low Greenhouse projections for increases in average temperatures. The large uncertainty in the approach is reflected in the extreme variance between the High and Low case results. The high case gave an average temperature increase of 0.21 degrees over 7 years (effectively about 8 DD/y), the low case gave 0.03 degrees over 7 years (effectively about 1 DD/y).

Temperature data from the Melbourne CBD site was compared with data from a BOM rural grid data set for 1950 to 2000 to assess the effects of urban warming. From this information, the CSIRO concluded that the main impact of urban warming was on overnight minimums, which was estimated to be about 0.016 deg/yr based on data from 1965 to 1995.

The CSIRO utilised their estimate of the urban heating trend in combination with the high and low greenhouse effects to produce high and low projections of DD for Melbourne over the next 7 years.

The high case produced a result of about 9 DD/y and the low case about 3 DD/y. The estimated urban heating effect comprises just over 2DD/y in each case. The difference in the outcomes reflects the high degree of uncertainty in the impact of greenhouse effect.

The CSIRO reported that average temperature in rural Victoria had risen by 0.43 degrees over the last 50 years (based on BOM modelling). However, this long term trend (which includes any greenhouse effect) equates to just 2 DD/y. The CSIRO did not reconcile their high and low greenhouse projections with this result.

A1.2 VENCorp Temperature Analysis

VENCorp has analysed temperature observations from BOM for the period 1950-2001 for the Melbourne CBD site and other sites, including Laverton, Tullamarine, Moorabbin, Ballarat and East Sale.

Based on a regression analysis of the temperature data from 1950, the information clearly demonstrates a warming trend of about 5.6 DD/y at the Melbourne CBD site.

However, the data from the other BOM sites showed no clear warming trends:

¹⁷ Report by CSIRO for GasNet; Suppiah R., Whetton P.H., and Hennessy K.J.: *Projected changes in temperature and heating degree-days for Melbourne, 2003-2007*; November 2001 [presented to the Commission as Annexure 8 to GasNet Access Arrangement, 27 March 2002]

- data from the Laverton and Ballarat sites showed no clear trends over the last 50 years.
- data from the Tullamarine and Moorabbin sites had only been collected for about 30 years, but nevertheless no clear trends were apparent.
- only the data from the East Sale Airport site indicated the potential for a warming trend (of about 2DD/y), however there is a large uncertainty in this trend from the data scatter at this time.

The warming trend apparent in the data from the Melbourne CBD site appears to be predominantly due to an urban heating effect that is localised. The Melbourne CBD site is located at the corner of Victoria and Latrobe Streets, which has experienced a lot of building development and increased traffic over the last few decades and is thought to incur a greater urban heating effect than the metropolitan area generally, and certainly more than in regional centres.

It is clear that the data presently at hand does not demonstrate that a general warming effect from greenhouse or other sources is showing up at the regional and outer metropolitan BOM sites.

A1.3 Comparison of VENCORP and CSIRO Temperature Analysis

As the CSIRO acknowledge¹⁸, there is a large degree of uncertainty in their results due in part to the reliance upon greenhouse models:

“The greenhouse warming projections in this report are based on results from computer models that involve simplifications of real physical processes that are not fully understood.

Accordingly, no responsibility will be accepted by CSIRO for the accuracy of the projections inferred from this report or for any person's interpretations, deductions, conclusions or actions in reliance on this information.”

Nevertheless, the temperature projections by VENCORP and the average of the high and Low CSIRO projections are substantially in agreement.

The information on Melbourne CBD temperatures provided in the CSIRO report is on a calendar year basis. Table 1 provides a comparison of the Melbourne CBD temperature analysis by CSIRO and VENCORP¹⁹.

Table 1. Comparison of Heating Degree Day Results

Annual Melbourne DD			
Year	VENCORP Fin Yr	VENCORP Cal Yr	CSIRO Cal Yr
2000	1,181	1179	1175
2003	1,165	1162	LG 1147, HG 1167
2007	1,143	1140	LG 1111, HG 1154

The average of the CSIRO High and Low projections for the Melbourne CBD is about 6 DD/y which is about the same as VENCORP's linear regression result for the

¹⁸ Disclaimer in CSIRO Report, at page 2 of the report.

¹⁹ VENCORP's load forecasts are presented on a financial year basis in its Access Arrangements.

Melbourne CBD (discussed in previous section). The starting points in 2003 differ by 5 DD.

A1.4 *Application of CSIRO Results to Load Modelling*

VENCorp does not dispute the CSIRO report nor its results, which we note are specifically about temperatures. The results are substantially in agreement, with a difference in the relative weighting of the Melbourne CBD heat island effect.

However, the important requirement is that an appropriate assessment is made of how the information provided by the report has been applied to the forecasting of loads. The CSIRO did not develop forecast load models or provide interpretations as to how the data from their report should be used in this regard. GasNet developed the methodology for applying the CSIRO information to load projections for the whole PTS.

The key issue relates to the extrapolation of results across the state:

- The data clearly demonstrates that there is a strong warming effect at the Melbourne metering site (corner of Latrobe and Victoria Sts, CBD) which we believe may be attributable to localised effects of building development and increased traffic over the last few decades.
- However, as the Bureau of Meteorology ('BOM') temperature data for Ballarat, Laverton, Moorabbin and Sale also shows, there is no clear trend evident from other sites around the greater metropolitan area and state of Victoria.
- The CSIRO report provided high and low scenario warming estimates derived from greenhouse models, with a very large degree of uncertainty in the results. The impact in the high case was 7 times as large as for the low case. It combined these with a single estimate of the heat island effect for the Melbourne site to produce high and low temperature projections for Melbourne²⁰. The CSIRO report did not support a load forecasting methodology which averaged these two divergent projections for Melbourne CBD and applied the result to the whole state as global warming, ignoring the strong urban warming component.
- The CSIRO cited that BOM computer modelling suggests that an average warming of 0.43 degrees has occurred over the last 50 years for Victorian rural areas. This translates to just one third of the warming rate that GasNet applied across the PTS.

²⁰ Data from 1950-1964 and 1995-2000 was not included due to anomalies or issues of quality.

Table 2. Comparison of VENCorp and GasNet Demand Forecasts

Calendar Year	VENCorp (PJ)	GasNet (PJ)	Difference (PJ)
2002	211.4		
2003	216.6	216.2	0.4
2004	225.9	225.3	0.6
2005	233.5	232.7	0.8
2006	238.3	237.2	1.1
2007	242.6	241.3	1.3

The actual differences in total arising from the GasNet and VENCorp approaches for load forecasting projections are not large (about 1.3 PJ in 2007). The difference between the two approaches was noted VENCorp's submission to the Commission's issues paper²¹ (refer Table 2).

GasNet's load forecasts appear to have utilised an average of the CSIRO High and Low Greenhouse model results (about 6 DD/y), projecting the results for the forecast period, and applying this to loads across the whole gas system for load forecasting. GasNet's load projections are therefore different to VENCorp's over the next 5 years, due to the application of the observed urban warming effect to the entire state.

VENCorp carefully considered the aspects of urban and global warming when it developed its load forecasts for the initially submitted Revised Access Arrangements. These load forecasts incorporated the identified urban warming effect for metropolitan loads, but this urban warming effect was not applied for the rest of the system.

The Commission noted²² in its draft decision (emphasis added):

"VENCorp submitted that the differences are not significant when compared to normal load variations due to weather cycles and load forecast uncertainty over five years.

VENCorp states that the **differences in demand forecasts are due to the different underlying assumptions used by VENCorp and GasNet in respect to urban and global warming effects.**

VENCorp adjusted the urban temperature standard to represent the average weather as recorded at the Melbourne Bureau of Meteorology (BOM) site in 2001. GasNet commissioned CSIRO to assess the trend in temperature observations. CSIRO concluded that the trend was mainly due to urban warming and partly to global warming. **GasNet extrapolated this trend** in temperature observations to the VENCorp forecasts **assuming that the warming effect would impact the whole PTS.**"

VENCorp believes that the Commission accurately captured the crucial matter, being the application of the identified urban warming effect to the whole of the PTS as a global warming effect to the same extent. The key aspects here are the correct interpretation and application of raw data, and the need to substantiate methodology utilised for modelling and forecasting of loads.

As the BOM data indicates, the observed metropolitan warming effect was not apparent in the outer metropolitan areas, bay side suburbs and country regions where

²¹ VENCorp: *Submission to ACCC on Access Arrangement Issues Paper*, 13 May 2002; page 20

²² ACCC: *Draft Decision on VENCorp Access Arrangement Revisions*; 14 August 2002; page 20

a significant part of the gas load in the PTS is located. The CSIRO report confirms this, identifying a much smaller effect as the global warming effect.

In VENCorp's view, no clear case has been established for a more general application of the urban heating effect observed from data from the Melbourne CBD site to forecasting of loads located outside of the metropolitan area, and in particular across the rest of the state.

From the data, it appears that the difference between methodologies is minimal at present. Therefore, in practice, the proposed GasNet methodology can be used for the purposes of defining initial tariff settings. Correspondingly, the methodology will not be adopted by VENCorp for planning purposes until a more rigorous substantiation is available.
