



**PETROLEUM EXPLORATION ASSOCIATION
OF NEW ZEALAND**

**INFORMATION TO BE PROVIDED
TO THE COMMERCE COMMISSION**

in relation to its

**Gas Control Inquiry
Conference
1-3 September 2003**

11 September 2003

Introduction

1. During the recent Gas Pipelines Inquiry Conference, the Petroleum Exploration Association of New Zealand ("PEANZ") agreed to provide further information to the Commerce Commission in relation to its presentation and the Draft Framework Paper.
2. The information to be provided by PEANZ included the following:
 - (a) information on the impact of gas transport charges on returns to explorers in a gas constrained market;
 - (b) examples of proven gas discoveries off the east coast of New Zealand;
 - (c) information on the extent to which pipeline access issues may have constrained development of Westech's Upper Wairoa field; and
 - (d) information on whether it would be efficient to (assuming a large gas find off the east coast of the South Island):
 - (i) transport gas from the South Island to the North Island to produce electricity; or
 - (ii) build a gas fired electricity plant in the South Island and transport electricity north.

Impact of Gas Transport Charges on Explorer Returns in a Gas Constrained Market

3. Transport charges make up the majority of the eventual gas sale price in almost all cases outside Taranaki. A large part of an explorer's revenue is locked into a fixed gas price because it will have usually entered into a long term supply contract to support the field's development. The impact of gas transport charges principally occurs when delivered gas pricing is constrained by the pricing of alternative fuels and so if the transport component is too large then producers will see lower prices at the well-head and this has flow on impacts on the economics of field development.
4. Elasticity in price is usually only available to transport or intermediate gas wholesalers because in most cases explorers will have locked in a gas price for a significant portion of the gas field as part of the field development.
5. A good example of this is the typical "energy chain" for Maui gas:

Where does the Money Go?	Dollars (NZ) /GJ
Revenue to Maui gas sellers (including delivery to Waikato)	\$1.60
Government – Energy Resource Levy	\$0.45
Legacy Wholesale Buyer	\$2 – 3
Wholesale Price	\$4 – 5
<i>Plus:</i>	

Transmission	\$1 – 2
Retail to Large Customer connected on/near the Transmission System	\$5 – 7
<i>Plus:</i>	
Distribution Network	\$8
Retail to reticulated Customer on Distribution Network	\$13 – 15 (depending on size and location)

6. The Maui gas field, because of its size, has had a significant influence on purchaser price expectations at the production level. The relatively low producer prices have resulted in unsustainably low investment in developing new gas supplies (even in a relatively prospective environment!). Currently New Zealand has about 1/3 of the exploration rate needed in order to maintain the market in the long term. The long term nature of gas supply infrastructure means that the effects of insufficient return to suppliers are only felt by the market in the medium to long term and allows extraction of profit by down-stream sectors in the value chain in the short term.
7. The statement posed by the Commission contains an assumption that the New Zealand gas market is “constrained” for the users of the transmission and distribution system and asks the effect of this constraint. It is important to remember that gas exploration/production operates on timeframes that are significantly longer than most other markets. The size of the New Zealand market means that gas supply will always be cyclical around developing fields. If, as currently anticipated, we see a transition to a greater number of smaller fields, the cyclical impact will not be felt as greatly as the current cyclical impact with the decline of the Maui field.
8. When considering whether there is any gas supply constraints it needs to be born in mind that Methanex, Genesis at Huntly power station and Contact at New Plymouth power station all have alternatives to their current supply and can provide significant market contraction/expansion to match gas supply. It is too simplistic to suggest that these purchasers are only contemplating alternative supply options because of a perceived lack of gas. The alternative options are always there and provide an on-going constraint on the delivered price of gas as a competitive fuel.
9. Gas supply in “reticulated gas” (off the NGC and distribution networks market) is also not constrained per se, as existing gas reserves can maintain this market for the medium term. It is worth noting that if large gas users in New Zealand do contract in size then gas producers will see a greater portion of demand from reticulated sales and hence they will be increasingly exposed to transport costs.
10. A key factor for gas explorers in New Zealand (and the New Zealand economy) is not just the existing reserves available but how to develop or find more such reserves. New Zealand is grossly under investing in development of new reserves and supply. Increasingly, there is potential for the New Zealand market to become too small and for producer returns to be too low to justify further exploration.
11. Efficient pricing at all steps in the value chain of delivered gas is essential for on-going exploration/production investment in New Zealand. These issues are very

real for the industry – executives of foreign/off-shore companies grapple with these issues constantly when deciding where and whether to invest the many hundreds of millions required for exploring for reserves and developing production. PEANZ believes that New Zealand must ensure it is an attractive and competitive investment prospect (when compared to other countries) for these overseas investor companies.

Proven Gas Discoveries off the East Coast of New Zealand

12. Westech has not yet started to develop a gas field off the east coast but has indicated that it is hopeful that its field assessments in that area may lead to such a development.
13. Westech advises that:
 - (a) it has conducted the following work in relation to the area off the east coast of New Zealand:
 - (i) drilled two wells in the prospective area to act as markers;
 - (ii) produced a 3-D seismic shot of the area of interest;
 - (iii) processed the 3-D shot and interpreted it using well data from the two wells already drilled as markers; and
 - (iv) an independent assessment of potential reserves by an American based company, Rose & Associates that estimates a figure of 1 TCF @ P50; and
 - (b) its field assessments to date indicate that this field could be larger than Pohokura and therefore has the potential to have a significant impact on New Zealand's current and future gas supply.

Pipeline Access Issues – Constraint on Development of Westech's Upper Wairoa Field

14. Westech advises that its Wairoa gas field development did not reach the stage where detailed negotiations were undertaken or completed with NGC in relation to pipeline access. PEANZ, therefore, cannot make a definitive statement as to whether pipeline access would have constrained Westech's Wairoa field development.
15. Two points, however, are worth noting:
 - (a) If field development has proceeded, the field could potentially have supplied gas to all of the Hawkes Bay, Palmerston North and Wellington. If this situation had eventuated, the NGC pipeline from Taranaki to the southern tie in point (i.e. where the Wairoa field development pipeline connected to NGC's transmission pipeline) could become largely redundant, potentially influencing NGC's interconnection and pipeline access pricing.
 - (b) NGC's current pricing model is premised on the fact that gas flows in only one direction i.e from Taranaki. If Westech's Wairoa field had been developed into a producing field, a multi-directional flow of gas through

NGC's pipelines would be required. Westech advises that it approached NGC about modifying its pipeline pricing model to take account of the multi-point gas injection that would result from the development of the Wairoa field. In response, NGC informed Westech that such a change in its pricing model would take at least two years to implement.

Most Efficient Use of Large Gas Find Off the East Coast of the South Island?

16. Any new power station would have to fit within the limits of the South Island electricity market and the limits on the HVDC electricity link transferring power to the North (and this link has limited life). The critical mass necessary to build a pipeline to the North would be very large and probably larger than the New Zealand market can absorb. If a gas field was this large it may then be better to convert the gas to Liquefied Natural Gas (LNG), however this requires a very large resource even by world standards.
17. Contrast this with a decision of whether to locate a power station say in Taranaki (or other south of Auckland location) versus Auckland. This decision is not straight forward and does not have an easy answer. On a greenfields basis the decision would usually be to move the gas and generate near the demand. However there is existing infrastructure and existing tariff structures that significantly influence the decision. Currently both the pipeline system and electricity transmission lines into Auckland will constrain for any significant growth in demand (i.e. within about 5 to 10 years). Both the gas and electricity systems require significant capital investment to grow and maintain energy supply into Auckland.
18. Transpower charges the fixed costs of the grid (which are the largest portion of costs) to demand hence power stations are only penalised by the transport losses with using the system or by constraints in the system. Gas pipelines are charged in full to the generator. Hence the generator sees connection charges for gas transmission and none for electricity transmission, but receives lower prices for production when located remote to demand. When the grid is unconstrained the transmission losses tend to be less than the gas transmission costs. Where the balance falls for any particular project depends on the project size and concept, needs of the investor and judgement of the developer.
19. A key driver for generators can be the risk issue of hedging spot prices when generating remotely from the customers due to constraints in the system, which may override the cost issues. The Commission should note that Contact Energy has decided to locate their next development project in Auckland while Genesis Energy has decided on Huntly (at the end of the Maui line).