
# PETROLEUM EXPLORATION ASSOCIATION OF NEW ZEALAND

# SUBMISSION TO THE COMMERCE COMMISSION

**in response to its**

**Gas Control Inquiry**
**Draft Framework Paper**
**dated 16 July 2003**

***20 August 2003***

## Introduction

1. The Petroleum Exploration Association of New Zealand (PEANZ) operates as a trade association to promote the interests of petroleum producers and explorers in New Zealand. Its mission is to promote a legislative, administrative, economic and social framework which efficiently and effectively facilitates safe, environmentally-responsible, and profitable oil and gas exploration, development and production. PEANZ represents members who are actively involved in oil and gas exploration and mining throughout New Zealand.

2. A list of PEANZ members is attached as Appendix A.

3. A number of PEANZ members are both acquirers of gas services (as defined in the Commission's Terms of Reference) and suppliers of gas services. PEANZ does not seek to comment on issues from the perspective of any particular commercial interests, but rather from the perspective of what is best for the overall development of the exploration and production industry.

4. The PEANZ contact for this submission is:

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5. PEANZ wishes to appear at the public conference on the Draft Framework Paper.

## Executive Summary

6. The key points of PEANZ's submission are:

   (a) Natural gas is a critical component of New Zealand's energy supply. A vibrant and sustainable petroleum exploration and production industry is essential for the long term economic growth of New Zealand.

   (b) Transmission pipeline investment is an integral component of gas field development. Some of the pipelines which fall within the definition of "transmission pipelines" used for the purposes of the Commission's Inquiry are more appropriately regarded as part of the overall production facilities of the particular gas field than as separate transmission pipelines. The capital costs of these pipelines (referred to in this submission as field development pipelines) form part of the economic assessment of field development and are also part of the capital base used to determine royalty payment under the 20% APR regime. PEANZ considers that price control of field development pipelines is neither necessary nor desirable.

(c) Gas suppliers and gas purchasers in New Zealand have very little flexibility around use of transmission and distribution services. A gas supplier is dependent on transmission and distribution services to get its gas to market. A gas purchaser may choose to switch to an alternative fuel if the delivered price of gas is not competitive.

(d) The nature of the New Zealand transmission system is such that there is very limited competition between transmission pipelines. Even with open access on the Maui pipeline, competition will continue to be limited. The parallel NGC pipeline has significantly less capacity than the Maui pipeline and will provide only minimal competitive constraint on the Maui pipeline.

(e) The delivered price of gas competes with alternative fuels. If pricing of the transport component of delivered gas is inefficient and allows transport providers to take excessive profits, or if it includes a high transaction cost component because of the complexities of regulatory processes (ie price control), this will have a direct flow-through effect back to field development economics. Without sufficient returns to the field developer there is no incentive for ongoing exploration.

## BACKGROUND

### Importance of Natural Gas

7. Natural gas is a critical element in New Zealand's energy supply mix because:

(a) subject to its availability, it is the preferred fuel for overdue new electricity generating capacity;

(b) it is currently the most efficient and reliable swing producer fuel for electricity generation – especially in dry or "low wind" years;

(c) it is a preferred fuel (compared with coal and oil) in terms of assisting the country achieve its short to medium-term Kyoto Protocol commitments;

(d) The current drive towards increased renewable energy supply will not of itself deliver the year-round, "all-weather" reliability required for economic survival and growth. To quote the Minister of Energy, Pete Hodgson "… *gas is critical not only for direct users but for New Zealand's electricity supply security."* (GANZ, 31 March 2003).

8. A strong, vibrant and sustainable petroleum exploration and production industry is an essential component of the Government's vision for a sustainable and efficient energy future and to delivery of the energy supplies that New Zealand needs to achieve its economic growth objectives.

9. The Government's March 2003 Policy Statement on the Development of New Zealand's Gas Industry (Gas Policy Statement) acknowledges the position of natural gas in the New Zealand economy:

"*The Government is committed to a sustainable and efficient energy future. Natural gas will play a significant part in achieving that commitment*" (para 1)

and

"*The Government welcomes investment in exploration and development of new gas fields.*" (para 3)

10. The Commission's Inquiry into whether, and what, controls on the gas transmission and distribution services market are necessary or desirable should have regard to the Government's recognition of the need for a sustainable exploration and production industry.

## The New Zealand Exploration Environment

11. New Zealand is under-explored by world standards and new gas reserves are being developed at a rate that is significantly below annual consumption.

12. Petroleum exploration trends in New Zealand will always be cyclical around the life of developed fields. New Zealand is currently at the end of a cycle which has been dominated by the Maui gas field for over 20 years. The recent Maui reserves re-determination and consequential reduction in estimated field reserves has shortened the end of this cycle by two years and possibly more depending on the offtake profiles from the field. While such a reduction is not outside the parameters of uncertainty within which the petroleum exploration industry operates, it has highlighted insufficient levels of gas exploration to fill the market gap in the short to medium term. On current rates of consumption, New Zealand will be in gas deficit within a few years if new fields are not discovered and brought on stream on a continuing basis.

13. Two key factors (apart from prospectivity) that drive exploration activity are availability of capital and a market in which to sell gas. Market risk and capital investment are closely linked – market risk perceptions will influence assessments/availability of investment capital but without depth of supply it is difficult for a market to develop.

14. The New Zealand gas market is not large and lacks liquidity and depth, both of which factors contribute to perceptions of market. The immediate challenge is increased exploration activity leading to development of greater reserves and overall growth of the gas market. The historical impact of the Maui gas field on New Zealand gas prices (and therefore returns available to the gas explorer and producer) is the main reason why exploration investment has not fully responded to the gas demand forecast.

15. The scale and scope of regulatory intervention is also a factor which influences perceptions of market risk. While some intervention may be appropriate to ensure that resources are efficiently allocated and used, over-regulation is likely to be more adverse that under-regulation – or certainly, it will be perceived as such by potential investors.

16. New Zealand exploration is capital constrained. New Zealand competes in an international market for exploration capital against other countries where there are one or more of bigger markets, lower exploration costs, and better reserves prospectivity. Some active and established exploration companies have recently noted that if New Zealand is to compete against alternative international investment destinations, returns on capital investment must achieve double-digit figures and potential reserves must be such that significant year-on-year production growth can be achieved in the future.

17. New Zealand's geographic isolation and relatively low levels of exploration activity means that the costs of mobilising and demobilising drilling rigs, vessels and specialist services are high compared to most other regions of the world, particularly for exploration offshore New Zealand which has the greatest potential for future major gas discoveries.

18. From an exploration perspective, gas competes with other fuels. Decision making in the exploration sector requires a long term view on the gas market and gas prices. Exploration and production decisions are assessed, on average, over a 10 – 15 year time frame. They are, of necessity, made in the context of the actual and anticipated prices of alternative fuels.

19. The capital investment required to develop a gas field can be anything between $50 million for a small 2 or 3 well onshore gas field with no onsite processing facilities and located close to the necessary processing infrastructure, and possibly over $1 billion for significant offshore developments including offshore/onshore processing facilities.

## Gas Users

20. The primary users of gas in New Zealand are the electricity and petrochemical sectors, followed by large commercial and industrial users and then residential customers. The large loads generally tend to all be located either in Taranaki, or to the north and/or east of Taranaki. Growth in gas consumption is principally likely to occur in the Auckland region because of its greater population and industrial concentrations. As a result, consumption and production are likely to become increasingly divergent. This will be even more so as exploration activity extends out of the Taranaki region and into other reserve basins (eg Westech's Wairoa and East Coast prospects). Efficient national (ie North Island) transmission solutions will be increasingly important.

21. While the wholesale gas market tends to be characterised by long term contracts, it should not be assumed that gas users will always be irrevocably committed to gas as an energy source. Gas does compete with other forms of energy. Recently we have seen examples where major gas users have switched to other energy sources as an alternative to gas. These include:

    (a) Genesis Energy at its Huntly power station committing to a long term purchase contract for coal as an alternative to gas;

    (b) Contact Energy in New Plymouth installing a new generating unit which can switch to oil as an alternative to gas; and

(c) the Government contracting for dry year reserve generating capacity to be built that uses distillate as a primary fuel source.

22. Major industrial and commercial users will always assess and compare the delivered cost of gas with alternative production options, including electricity, coal and diesel. The imposition of the proposed carbon charge as a Kyoto Protocol (climate change) response mechanism will do nothing to change this.

23. We have also seen Methanex Corporation, a major user which has accounted for over 40% of New Zealand's annual gas consumption, announcing plans to complete a $US500 million methanol plant in Western Australia by the end of 2005 as part of a planned new Asia Pacific hub which will see Methanex exit New Zealand because of the lack of a long-term gas supply contract of sufficient security.

## Exploration and Transmission

24. When an exploration company finds gas in New Zealand, there are some key decisions that it needs to make. The most critical of these will be whether to, and in what circumstances it will, develop the field and bring the gas into production. A number of factors will be relevant to this decision. These include:

(a) the size and likely rate of production of the reserves;

(b) the market for those reserves and potential purchasers; and

(c) closely related to the last issue is the ability to get the gas to potential purchasers – how accessible is the existing pipeline infrastructure and what pipelines will need to be built to get the gas to market in the required volumes (including peak loads).

25. Historically much of New Zealand's exploration activity and all development of gas discoveries has taken place in the Taranaki region as a known province of production. As a consequence, significant transmission infrastructure has developed to deliver gas out of the region and throughout much of the North Island.

26. There are three main transmission systems out of Taranaki:

(a) the NGC transmission pipeline which travels from the Kapuni Gas Treatment Plant south to Wellington via Wanganui and includes a spur off to Palmerston North and Hastings;

(b) the Maui transmission system north which comprises the pipeline from the Maui production station at Oaonui through to Rotowaro (Huntly) and connects to a NGC pipeline into Auckland and further north up to Whangarei. A NGC owned pipeline connects off the Maui pipeline at Te Awamutu and takes gas to Tauranga, Rotorua and Gisborne; and

(c) a second and parallel, but much smaller capacity NGC pipeline north out of Taranaki from the Kapuni Gas Treatment Plant through to South Auckland.

27. Within Taranaki there are a number of smaller field development pipelines, which generally take gas from a production station and either:

(a) interconnect with a NGC pipeline going north or south; or

(b) are dedicated to a specific gas user, eg an electricity generator (such as the New Plymouth and Stratford power stations) or petrochemical manufacturer (such as Methanex and Ballance Agri).

28. Pipeline infrastructure is an essential component of overall field development. There are two aspects to field development pipeline infrastructure:

(a) gas gathering lines which take product from the well head and transport it to a production facility where the various products (eg natural gas, LPG, naptha, condensate etc) are separated out[1]; and

(b) pipelines transporting gas, which may be either treated to a specification or untreated (and therefore requiring a dedicated line) from the production facility either:

(i) directly to an end user. Examples are the pipelines from the Waihapa production station to Stratford and New Plymouth power stations and from the Kapuni production station to the Methanex plant; or

(ii) to interconnect with an existing north/south transmission pipeline (currently only NGC). The gas is then delivered to users via a distribution system connected to the transmission system. The distribution system may be a distribution network or may be a spur line servicing only one or more large users (for example, the Huntly power station spur line from the Maui line and the spur line to the Southdown power station from the NGC line).

29. Construction of the Maui pipeline is an historic example of field development pipeline infrastructure required because existing pipeline infrastructure was inadequate to deliver the quantities of gas available from the Maui field and necessary to be sold to justify field development economics. Transmission costs are integrated as part of the gas sale price. Delivery under the Maui contract occurs at the end of the Maui pipeline or at other exit nodes along the pipeline.

30. Similarly, the pipeline from the Waihapa production station to the New Plymouth power station was constructed as part of the TAWN field development. The transmission pipeline was constructed solely for the purposes of that contract.

[1] Gas gathering pipelines are outside the definition of "transmission system" for the purposes of the Commission's Inquiry

31. More recently, Waiora gas discovered by Westech Energy is effectively stranded vis a vis existing transmission infrastructure. In the absence of a dedicated power station or other large load located adjacent to the field, any field development will need to include construction of a pipeline from Wairoa to Hastings to connect into the NGC transmission system at Hastings. In such a case, field development is likely to only proceed if a cornerstone gas supply arrangement can be achieved at a price that justifies the capital costs of developing the field and the pipeline infrastructure required to bring gas from the field to market.

32. On a smaller scale, Westech Energy's transmission pipeline from its Surrey gas field to the NGC LTS pipeline is also an integral part of that field's development and implementation of Westech's delivery obligations under its gas sale contract with NGC. The pipeline is only 1.2 km long.

## COMPETITION ANALYSIS

### Transmission Services - Market Definition

33. For the purposes of its competition analysis the Commission has sought comment on the appropriate gas services markets. It is necessary to do so because section 52 of the Commerce Act requires the Commission to consider two issues, namely whether gas transmission and distribution services are supplied in a market in which competition is limited and whether control is necessary or desirable in the interests of acquirers.

34. By way of summary, PEANZ:

(a) agrees with the Commission's view that gas distribution markets are defined by the geographic regions within which each discrete distribution network is located; and

(b) considers that the geographic scope of gas transmission markets is not so easily defined.

(c) disagrees with the Commission's analysis that there are two discrete transmission markets, being:

(i) the provision of gas transmission services between North Taranaki and Huntly; and

(ii) the provision of gas transmission services for the rest of the North Island.

(d) considers that the relevant geographic markets could be any of the provision of gas transmission services:

(i) for the whole of the North Island;

(ii) between:

- Taranaki and Auckland/Northland

- Taranaki and Wellington/Palmerston North
- Taranaki and Rotorua/Tauranga/Gisborne region or

(iii) between the start and end points for each of the major transmission pipeline routes.

However, geographic market distinctions are unlikely to be particularly helpful in determining the question of market power.

35. If a gas purchaser needs gas at Kinleith, transporting it down a pipeline that goes to Auckland is not an alternative. Likewise, if a gas seller has contracted to sell gas to an end user in Auckland, a pipeline that goes south out of Taranaki is not an option. For this reason, unless there are two pipelines running parallel and having similar capacities, there is very little substitutability between one pipeline and another.

36. PEANZ disagrees with the Commission's suggestion that the Maui pipeline and the parallel NGC pipeline are substitutable and therefore would compete with each other. The difference in capacity between the two pipelines is significant. A gas user requiring anything other than a relatively small volumes of gas to be transported would not be able to use the NGC pipeline. As a consequence, PEANZ believes that the NGC pipeline will be a price taker once the Maui pipeline becomes open access. It will, at best, provide only minimal constraint on pricing and behaviour of the Maui pipeline.

37. New Zealand's transmission pipeline system is a point to point transmission system rather than a transmission network. Almost all of the regions where gas is available to end users have only one transmission pipeline transporting gas to that area. The exceptions to this are the Taranaki region, which because of its high concentration of gas production has a network of pipelines, and between North Taranaki and Huntly where there are two parallel transmission pipelines – the Maui pipeline and an NGC transmission pipeline.

38. There is no obvious geographic market delineation. The principal choices seem to be to either adopt a narrowly defined geographic market that identifies the regions at the start and end points of a transmission system, eg Taranaki to an identified distribution network, or to take a much wider view that encompasses the whole of all potential start and end points and define the market as the whole of the North Island.

39. The Commission has noted in the Draft Framework Paper (at paragraph 5.32) that the purpose of defining a market is to provide a framework within which to analyse the extent of competition or its antithesis, which is market power. The Commission refers to a quote from the judgment in *Queensland Wire Industries Pty Limited* (1989) 167 CLR, 177. Regardless of which geographic description of the market for transmission services is adopted, the fundamental fact remains that users of gas transmission services have very little ability to constrain the behaviour of transmission service providers. This will continue to be the case even when open access is available on the Maui pipeline. In addition, because the gas market lacks depth and tends to be concentrated in the upper half of the North Island, gas sellers have very little choice about who, or where, they sell gas and so have very

little flexibility to chose, or exercise any constraint on, transmission service providers.

## Is Price Control Necessary or Desirable?

40. As discussed in paragraphs 28-32, investment in new pipelines (field development pipelines) usually occurs as part of a gas field development. The extent to which a pipeline investment is required depends on the location of the gas field and the existing transmission infrastructure.

41. Field development pipelines are within the ambit of the Commission's Inquiry as they fall within the definition of "transmission system" identified by the Minister in his letter of 9 July 2003 to the Commission (adopting the definition of "transmission system" as that term is used in the Gas (Information Disclosure) Regulations 1997). PEANZ considers that field development pipelines are a distinct category of transmission pipeline and should be considered separately from multi-user transmission pipelines.

42. This is because field development pipelines:

(a) have been constructed as an integral component of the field development and form part of the production infrastructure rather than separate transmission facilities;

(b) will have been designed specifically around field optimisation and/or the gas supply arrangements underpinning development of the field;

(c) are part of the overall infrastructure cost of developing a field. A field economics assessment, taken prior to actual development, will have assessed total investment costs and factored this into any long term gas sales contract required before development can proceed;

(d) are a significant part of the capital base used to determine royalty payment under the 20% APR regime;

(e) for all of the above reasons, the capital cost recovery for field development pipelines is usually included as part of the delivered gas price in the gas supply arrangements entered into to underwrite and secure field development. There is no separate transmission arrangement;

(f) the significance of the field pipeline cost on the final delivered gas price will depend on the extent of pipeline infrastructure required (including factors such as topography, distance, capacity, access) relative to the size of the field and the total development cost of the field (which will include factors such as whether it is onshore or offshore and the complexity of well production).

43. The gas field/production characteristics of the field development pipelines is recognised in the Gas (Information Disclosure) Regulations. Although the definition of transmission system captures these pipelines, they are then exempted

from compliance with the disclosure obligations under the regulations – refer to section30 and schedule 2.

44. Price control would be inappropriate for field development pipelines because they are part of the overall production infrastructure of a specific gas field.

## Transport as a Component of the Delivered Price of Gas

45. Maintaining stability and growth in the wholesale gas market is a critical factor for the long term sustainability of gas exploration and production in New Zealand and to minimise disruption of the overall energy market. Transmission and distribution are integral aspects of the gas market as they are the means by which gas is delivered and consequently transmission and distribution pricing are significant factors in the delivered price of gas.

46. Major industrial and commercial users will always assess and compare the delivered cost of gas with alternative fuel options, in particular electricity. In general, the energy value of gas is a smaller proportion of an end user's gas cost than the delivery cost. The actual proportions will obviously be dependent on the distance that the gas is transported.

47. There are a number of key issues for the exploration sector around the delivered price of gas. These are:

(a) When a gas field developer is looking to secure a purchaser for its gas, it will be competing with other gas sellers (who may be in either the production or wholesale market). Competition should be based around the energy component of gas. Transport, as a component of the delivered price of gas, should be available on a level playing field for all sellers seeking to sell to the same customer.

(b) The delivered price of gas, including transport, must be competitive with other alternative energy options available to an end user. Alternative energy options are a natural constraint on the long term price of gas as a competitive fuel. If pricing of the transport component of the delivered price permits excessive or unnecessary profit taking by the transport providers, this reduces the return available to the explorer/producer. This affects well economics and a field which otherwise may be developed will not be. In the medium to long term, these factors impact on exploration incentives and highlight the issues discussed at paragraph 16 above.

(c) At the same time there is an important balance to be struck between over recovery and under recovery by transport providers. Explorers and producers are dependent on the transmission and distribution sectors to contribute to the growth and development of the gas sector. This means that transmission and distribution providers need appropriate returns on capital invested to provide an incentive for them to continue to invest in their pipeline systems – both maintenance and new investment to grow and expand the coverage of their networks.

(d) If the Commission does consider that some form of price control would be desirable, it will be important that the form of price control adopted does not distort incentives for new investment and does not provide disincentives for future exploration, especially in frontier basins where new discoveries are likely to be located significant distances away from existing infrastructure.

(e) Any regulatory framework being considered should be simple and low cost. The gas market is not large and there is limited scope in the delivered gas price to sustain additional transaction costs in the form of a complex or time consuming price control regime. If transaction costs are high, not all of these will be able to be passed on to the gas consumer and so are likely to ultimately represent a reduction in the price that can be achieved by the field developer. This has flow-through consequences for field development economics and will have a long term impact on overall exploration levels in New Zealand.

PEANZ is happy to elaborate on any aspect of this submission, should this be of assistance to the Commission.

## Appendix A

### Membership Status at 12 August 2003

***Company***

*Petroleum producers:*
Shell Petroleum Mining Company Limited
Todd Energy
Swift Energy NZ Limited
OMV

*Petroleum explorers:*
Preussag Energie GmbH (now OMV)
Westech Energy NZ
Genesis Power
Bridge Petroleum
Delta Oil Taranaki Pty
Horizon Oil Pty
Kenham Holdings Limited

*Associate Members – companies*:
Auld Brewer Mazengarb McEwen
Bell Gully
BTW Associates
Chapman Tripp Sheffield Young
Ernst & Young
GeoSphere Exploration Limited
Halliburton NZ Limited
IGNS: Hydrocarbons & Information Services
Kensington Swan
Marsh McLennan
Minter Ellison Rudd Watts
Oil Drilling & Exploration
Parker Drilling
Phillips Fox
Plant & Platform Consultants Limited
PriceWaterhouseCoopers
Russell McVeagh
Shell Todd Oil Services Limited
Simpson Grierson
URS New Zealand

*Associate Members – individuals*:
Gavin Adlam
Arete
Brooklands Energy Consultants Limited
Geological Research Limited
Richard Hale (Hale & Twomey Limited)
Exploration Strategy (Chris Haslam)
Dr Peter Kamp
Logan Consulting
David Manhire
Resource Solutions
Jason Thomas (Awaroa Partners)
Wairarapa Geological Services