

# Significant events over the past two years in the New Zealand Petroleum Industry

## Dr Mike Patrick

*Executive Officer, Petroleum Exploration Association of New Zealand, PEANZ, PO Box 5227, Wellington. Ph (04) 472-1993, email peanz@xtra.co.nz*

## Introduction

The “mood” of the 2002 New Zealand Petroleum Conference was very much set in the opening stanzas, in particular by Tim Warren [Shell E&P International] when he noted that:

*“The biggest challenge New Zealand faces is the reality of international competition for E&P resources. As an industry we face shortages in technical staff, equipment, and most of all investment capital. Most companies who survived the oil price plummet of the mid 1990s have developed more disciplined approaches to making investments. As a result, New Zealand will be forced to compete on a global scale for available resources in order to meet the gas challenge of the post-Maui world.”*

A sobering summary of the industry’s openly-voiced concerns in earlier conferences and elsewhere, but a message never fully appreciated by those accountable for energy outcomes both within Government and also within major players in the energy sector until the electricity shocks of 2001-03 and the news of the Maui re-determination.

Notably since then Shell have advised their withdrawal from exploration in New Zealand in 2004, although they remain a major player in production. Other keynote contributions at the same Conference however were more encouraging – establishing a material focus area for a growing independent company through focused risk-taking [Chris Bush, Swift], and the note that New Zealand’s petroleum future will involve many small fields rather than the one giant [John Mork, Westech].

This paper briefly outlines the significant events for and within the industry in New Zealand over the period since the 2002 Conference, both from a “technical” perspective as well as a broader political/policy perspective.

## From the field

### Taranaki

Taranaki has, since the discovery of Kapuni, continued to be the main petroleum province of New Zealand, both in terms of exploration and production.

Onshore Taranaki continues to receive steady investment in exploration, and continuing development of some of the

lesser fields particularly by Swift. The only effort to add reserves in the major fields was the unsuccessful Kapuni-16. New owners of former of Fletcher Challenge Energy are now established on the ground.

The 2002 blocks offer rejuvenated prospecting activity, with the award of 21 new permits and the entry of some new companies, notably Tap Oil who participated with Indo Pacific and others in an extensive 3D seismic acquisition campaign. Some shallow 2D seismic was acquired by Greymouth Petroleum in eastern Taranaki, whilst GeoSphere conducted an extensive soil gas survey in South Taranaki.

Drilling along eastern margin, as well as Rimu/Kauri, has seen success at Kahili-1A but disappointment at Huinga, Makino, Tuihu, Opito and Patea. Shallower targets in central Taranaki, besides development wells in Kaimiro/Ngatoro (K-19, Goldie-2 and Tabla) have succeeded at Surrey and Cheal - with a noted impact of a lower-cost drilling approach introduced by South Pacific Drilling Ltd - but disappointed at Bluff-1 and Waiwiri-1. A wildcat well on the western side of the peninsula, Rahotu-1, was also plugged and abandoned.

After a puzzling 3-year hiatus in serious exploration investment in the offshore Taranaki, the 4-well drilling campaign with the Ocean Bounty in early 2003 provided resounding encouragement, with successful appraisal wells on Pohokura and Maari (where reserves were upgraded substantially) and indicated discoveries (not yet established as commercial) of oil at Tui and gas at Karewa.

Apart from the appraisal efforts at Pohokura and Maari, existing fields have been subject of considerable commercial activity but little if any development investment. The re-determination of Maui’s economically recoverable reserves has dominated the past 18 months, in particular the forthcoming allocation of remaining reserves and the implications of this for gas supply in New Zealand. Somewhat surprisingly, the reaction time of both the market and Government to this matter has been painfully slow, particularly in light of it being flagged by Shell in 2000 or 2001. The flow-down impact on Methanex, the largest gas user in the country, has been sharp and severe, and we have heard a number of politicians state that the use of gas for methanol production has been the major cause of the “Maui

problem”, which does nothing for attracting explorers to the country if, as a result of the re-determination, there is a perception that there is no significant market to sell gas to. Watch this space.....

Genesis has taken up most minority interests in Kupe, commissioned some scoping engineering, and invited bids for operatorship.

Participants in exploration have changed notably with the exit of Conoco Phillips, the increased involvement of OMV (acquiring an interest in Maui from Shell, and in Pohokura via Preussag to add to their operatorship of Maari), and the arrival of Transworld and more recently Mitsui into PEP 38460 with NZOG and AWE (who have extended their interests to the west with the only block awarded from the deep water blocks offer). Transworld is proving a resolute explorer, acquiring a large 3D survey on the back of the Tui encouragement and currently preparing for further drilling. The latest blocks offer may introduce further much-needed new blood

The deep-water blocks offer failed to draw interest beyond the shelf margin, disappointing for a Government which continues to claim that New Zealand has one of the best exploration regimes in the world (see below), and for TGS Nopec who had invested in a speculative seismic survey which formed the basis for the tender round.

## Elsewhere

Activity in New Zealand basins away from Taranaki has been somewhat haphazard, with the East Coast campaign that seemed so promising a few years ago losing its momentum. The emerging hope appears to be offshore Canterbury and the Great South Basin, but investment in the permits has been limited so far to seismic reprocessing and studies, with new seismic acquisition for Bounty scheduled.

Another resource receiving strong attention, including permit awards and studies, and recently test wells, has been coal seam gas, with several players active in this area including national coal miner Solid Energy.

## The future?

To paraphrase the great Winston Churchill, “*Are we at the beginning of the end or the end of the beginning?*”

Of concern is the exit of majors Shell and Conoco Phillips from exploration, and the non-entry of other major companies. New Zealand is currently very dependent on companies of the scale of OMV, Transworld and Swift (or smaller). Are these companies going to be able to muster the exploration capital required to realise the potential resources on New Zealand, particularly in the country’s vast oceanic domain which in some areas shows great potential?

## From the “barnyard”

What of the political/policy front, and its impact on the industry over the past two years?

Certainly the past two years has been one of considerable significance in terms of what political and policy moves have been set in train which impact directly on the industry – from the foreshore and seabed issue, the Waitangi tribunal claim to petroleum, the gas (and electricity) sector reforms, and legislation new and amended

With regard to gas, serious concern has been raised within the industry at what appears to be a major change in the official Government stance on the importance of indigenous natural gas production in the future, such that there is no potential for significant indigenous production in this country. The Ministry of Economic Development’s recently-released *NZ Energy Outlook to 2025*, an essential market information document for companies interested in investing in energy supply in New Zealand, makes very sombre reading for the petroleum industry. When coupled with:

- the small size of the New Zealand economy and gas market;
- the lack of gas infrastructure in most of New Zealand ;
- various statements from the Government and officials such as “Methanex being part of the [Maui] problem”, and an increased long-term role for renewable energy supplies yet with increasing quantities of coal being burnt in the interim (despite the Government’s proactive climate change stance);
- an apparent acceptance of LNG as a readily-available long-term solution without any in-depth analysis of its economic implications, such as exposure to the vagaries of international commodity prices, fluctuations in exchange rates and the business dynamics of international suppliers; and
- the lack of a coherent and comprehensive Government-led energy plan and strategy .....

..... then the attractiveness of this country for explorers is potentially diminished.

This apparent official position may effectively drive away investment in the critical frontier areas of New Zealand for fear of not being able to do anything with any gas discovered. To quote a recent McDouall Stuart report on the matter of future gas supply for the country:

The environment favours exploration companies more than at any time in the past 30 years. All gas can be sold at high (and rising) prices. Oil prices remain firm. Returns for explorers and their shareholders are strong. However this has not been anticipated by higher drilling activity.:

The government cannot rest on the mantra that NZ already has an attractive oil and gas regime – exploration capital has not been attracted. The consequences of failing to attract

and facilitate exploration, and so ensure continued domestic gas supply, could be a permanent burden on the NZ economy.

In many respects, what appears to be the official line reminds me of a song by US band REM, “*It’s the end of the world as we know it – and I feel fine*” – not fine however for our industry.

## What about oil?

Whilst the focus was very much on gas over the last two years, liquids seem to have dropped off the radar screen for anyone outside of the industry. Yet if the cynics were correct, and the invasion of Iraq was indeed simply on the grounds of securing oil reserves for the USA, then the world is about to change significantly for New Zealand in terms of liquid hydrocarbons. When world production can no longer meet demand, what chance do New Zealand companies and refiners have of competing in the international oil market, with the very high prices expected? Even if they could secure sufficient supplies, the costs to the economy as we know it would in all likelihood be severe, if not fatal.

Perhaps the country needs reminding of the oil shock of the 70’s and the consequence of relying on overseas energy supplies to meet our needs.

And to pre-empt comments re the international flavour of the liquids market and the fact that any producer could decide to sell indigenous oil here or overseas, I would simply note that in a time of supply shortfall or crisis, the Minister of Energy could easily and, in my view, quite justifiably invoke provisions within the Crown Minerals Act to require all indigenously-produced oil to be refined within New Zealand. Surely a “security blanket” that we hope we never need, but there just in case.

Australia recognises the security significance of liquid hydrocarbons, and the need to be as close to 100% self-sufficient if at all possible – perhaps New Zealand needs to wake up and do likewise, for despite the move towards renewable energy supplies, the hydrogen economy and the like, the next five to twenty years are going to one of the most crucial periods in this country’s history. Some commentators have likened it to the pre-Kapuni and Maui era. Back in those days, Government invited oil exploration giants BP and Shell to come to New Zealand and explore, on terms favourable enough for them to accept the invitation.

Maybe the time is right for similar Government moves? Certainly the very fabric of why and how we do business in New Zealand needs to be critically assessed, re-evaluated, and if need-be the systems and policies put in place to ensure that indigenous petroleum production meets as much as possible of this country’s demand for these products.

## Have we been on the right track?

There seems to be a belief within Government circles that intervention is required because of some market failure, when in fact a more pertinent observation is that the transition to a post-Maui environment has been made extremely difficult

because of an imperfect market and as well the lack of adequate forward energy planning – to quote a CAE report from late 2003:

*..... after twenty years of neglect, the New Zealand energy sector is now once more at a cross-roads not dissimilar to where it was in the 1970s, prior to Maui and when several large, coal-fired power stations or nuclear power were being considered.*

I am very concerned that rather than developing coherent national energy policy and strategy, the Government is more preoccupied with the workings of the downstream retail gas and electricity markets as a surrogate. This includes the two major investigations by the Commerce Commission (joint selling of Pohokura gas, and gas pipelines control & pricing).

This is largely being done with inadequate meaningful engagement with the upstream exploration and production sector. Policies and regulations are being promoted and introduced on a “one-sided” basis without proper appreciation of the role this sector has in the overall equation, nor what is needed to urgently promote increased exploration activity. This is reinforced by the fact that Government officials are proposing rules for increased petroleum reserves information disclosure without any understanding of the uncertainties surrounding reserves estimation, commercial sensitivity of information, and how the petroleum industry works in terms of its general business model.

Do we still have time to put in place the policies, systems, mechanisms, and changes needed to significantly increase levels of exploration, and thereby attempt to avoid in particular the predicted major gas shortfalls in at least the long term? Many commentators would agree that there will indeed be shortfalls over the next five to ten years, even if Methanex departs the country, and that as a consequence thermal electricity generation will become dominated by coal, and the country’s electricity supply will be unduly exposed to an even greater extent to the periodic constraints on hydroelectric generation.

Government’s seemingly *ad hoc* decisions of late however would tend to suggest a sense of panic rather than well-reasoned urgency. To date we have seen Government moves to incentivise renewable electricity supplies with sellable “carbon credits”, purchase (at a significant cost) so-called 1-in-60 dry year reserve electricity generation capacity, and even to invest, via one of its SOEs, over a billion dollars on electricity projects in Australia. And of course Government money is readily available for making high-profile movies in this country. A salient question therefore is “*what if even a part of that money had been invested in exploration and/or related infrastructure?*”.

I believe increased exploration and ensuing successful discoveries can be achieved but only as long as Government and its officials send the “right signals to the market”. However a lot more needs to be done to work through the issues and barriers facing the industry, with the aim of developing a package of preferred measures which would, if

put in place, act as an encouragement for increased exploration and gas production and thereby a restored inventory of indigenous petroleum resources.

But is the Government the only concern here? Some commentators have pointed the finger squarely at the industry itself, and its penchant for squabbling over the spoils, the divvying up of the pie rather than cohesively growing the pie. Some have claimed that this is as much a “turn-off” for increased exploration investment as any Government “mis-management”. If true then surely it’s time for us to change the game plan, and thereby become masters of our own destinies rather than simply expecting, and relying upon Government to make the rules for us.

## So where to from here?

What is the future for exploration in New Zealand? With regard to oil, I must admit to being optimistic, largely based however on activity to date in the “tried and true” province of onshore and near-shore Taranaki. But the untapped potential of our deeper oceanic domain appears beyond our reach at the moment.

I believe coal seam gas will play a small but significant role in future energy supply, but in terms of indigenously-produced natural gas, it appears to me that in the absence of carefully-crafted Government incentivisation, including with infrastructure, then the picture is not rosy.

I am eagerly hoping to be proven wrong. Maybe the forthcoming Northland bidding round will throw up something, someone of significance.....

## References

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## Author

Mike is an environmental scientist who has worked in all sectors of that “industry” including central and regional government, and as a consultant. His experience with the petroleum industry dates from the heady days of “Think Big” in Taranaki, and the ensuing onshore and offshore exploration activity (both as a regulator and as a consultant). He is currently the Executive Officer for PEANZ and is based in Wellington.