

Business options for managing Taranaki's declining fields

PL Barron

*Consultant, Areté Ltd, 62B Poplar Grove, New Plymouth, Telephone 0064-6-751 2649, Fax 0064-6-751 2619,
Email plb@clear.net.nz*

Abstract

New Zealand's E&P portfolio is characterised by assets that are in the middle to late phase of their productive life, those that are as yet undeveloped, and those that are but glimmers in the eyes of the geoscientists.

We do not have any fields in the early phase of production, and, other than the recent discoveries on the East Coast and offshore of south Taranaki (Maari), there seems little likelihood of significant new production over the next 3-5 years. And, while there is the excitement of the Taranaki Western Platform, the issue here remains to prove basic commerciality.

Thus New Zealand's E&P industry is facing the stark reality of declining production and limited exploration success. Therefore, existing operators are having to confront the challenge of achieving operating efficiency in an increasingly demanding business environment, while at the same time identifying and pursuing exploration opportunities.

One of the results of this is the growing acceptance that business survival (let alone growth) requires the industry to develop a new set of business models and relationships that reflect the reality of today's situation. This change is a move from "conventional" competition to one of "constructive competition". This paper seeks to identify some of the important issues facing New Zealand's petroleum industry as it wrestles with the continuing production decline over the next five years. In particular, it addresses issues of:

- competition – what it might and might not be;
- business relationships amongst suppliers, service providers and operators;
- relationship between the operators and the Crown;
- infrastructure optimisation – opportunities and challenges; and
- shape of the future industry in Taranaki.

This paper does not aim to provide absolute answers, but to prompt wider debate, and perhaps point some future direction as to the most effective way to realise value from the country's portfolio of producing assets.

Introduction

New Zealand's oil and gas industry is rapidly approaching a critical juncture in its history. This observation is driven by a range of issues and events, but is most sharply characterised by two key issues;

1. A declining production and reserves base, and
2. The emergence of new entrants.

While there are positive pointers in the recent discoveries and pending developments, there remains a gaping hole in the country's E&P portfolio which, if not filled, will herald a new energy crisis for the country.

The oil and gas industry produces around 2.3 million m³ of liquids and 200 PJ of natural gas each year, contributing in excess of \$2 billion p.a. to the economy, providing 60% of NZ's primary energy supply and thereby contributing a significant portion to the country's 88% self sufficiency in primary energy needs (Figure 1).

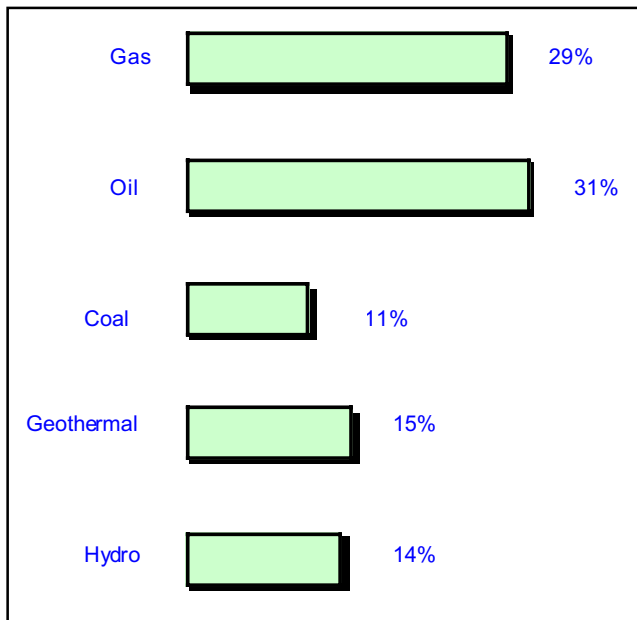


Figure 1: New Zealand's primary energy sources.

However, NZ is only 45% self sufficient in liquid fuels, and existing reserves are being depleted at a rate of around 15% pa. At this rate, and without further discoveries, within five years New Zealand will need to import in excess of 80% of its hydrocarbon liquids.

Furthermore, about 85% of the hydrocarbon energy supply derives from the Maui gas field, a mature field in the early stages of decline. Current information suggests that Maui will reach end of life somewhere between 2008 and 2012.

As a result of the above, at the 1998 New Zealand Petroleum Conference, the then Minister of Energy challenged the

industry to achieve 75% self-sufficiency in oil by 2005, and to become a net exporter of oil by 2010. Our collective performance against these targets speaks for itself. While Pohokura, Rimu, Maari and Kupe are exciting, they do not of themselves fundamentally change the overall hydrocarbon reserves picture for New Zealand, a point noted by several commentators over recent times.

Thus, the fundamental challenge for the industry is to sustain its currently declining production base, while at the same time exploring for, and delivering reserves from new discoveries. In this respect, continued economic survival of the existing oil and gas infrastructure is critical to the success-economics of current and future exploration. Therefore, the stewardship of our declining assets, is one of the key tasks facing the industry, particularly the operators of that existing infrastructure.

For New Zealand's oil and gas industry to meet this challenge, there will need to be a significant change in the competitive dynamic of the industry, especially in Taranaki where the bulk of existing infrastructure resides. In particular, industry will need to be prepared to do business in a way that enhances existing opportunities, and more importantly creates new opportunities for both existing and new players.

This paper addresses some of these issues, and the options facing the industry in NZ today.

The NZ E&P portfolio

Figure 2 below illustrates the plight of New Zealand's current exploration and production portfolio in terms of the E&P cycle. All the producing fields are confined to the Taranaki

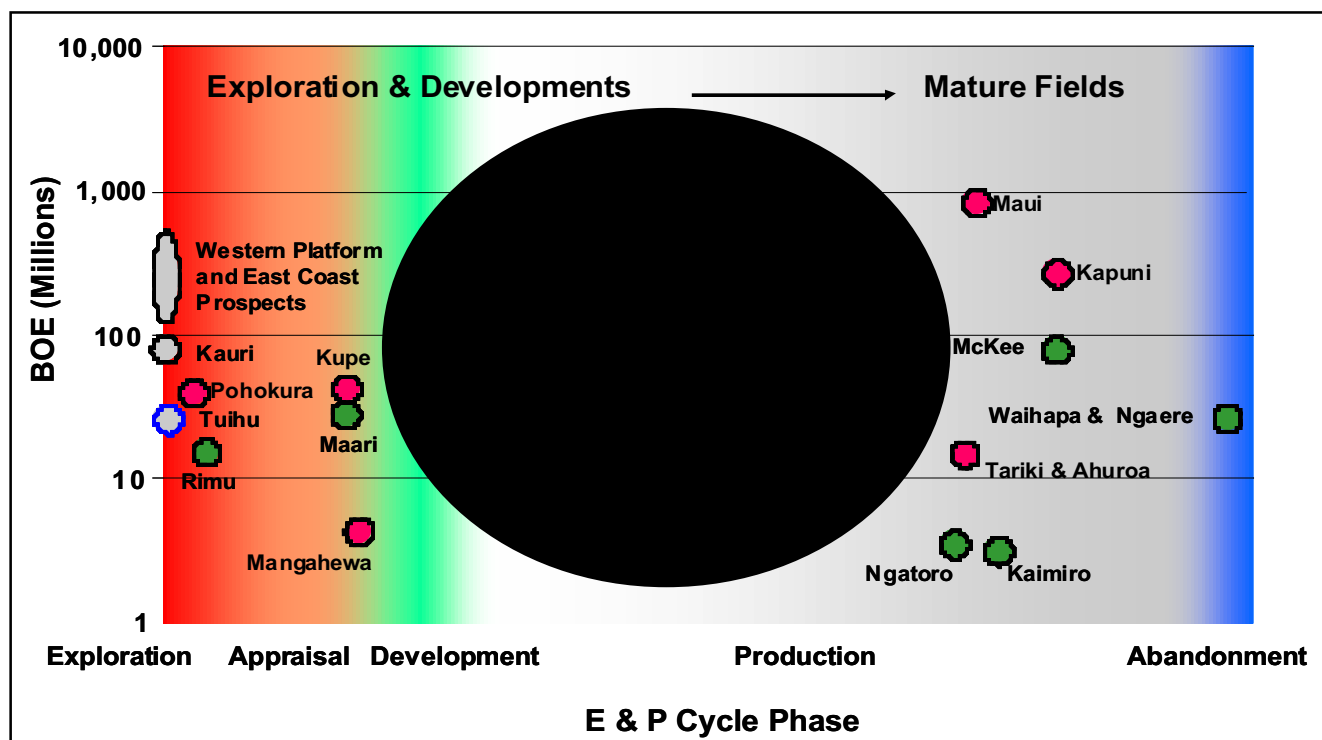


Figure 2: New Zealand's E&P portfolio.

Basin, and all are mature, and declining, with some in the very late stages of field-life.

At the other end of the cycle, while there are a few discoveries, none of these has yet moved into the development phase. Furthermore, the scale of these discoveries is relatively modest in terms of supplanting the country's O&G supply deficit. The concerning part of this picture in terms of the E&P cycle, is the growing gap in the portfolio inventory. The lag time from discovery to production (generally 2-10 years), combined with the commercial challenges of placing gas to market, can only exacerbate this problem. Therefore, even with the best of luck, and most constructive of negotiations, it is difficult to see any fundamental change in this picture over the next 3-5 years. The implications of this are that with every passing day the hole in the country's portfolio is getting larger, and unless the industry acts quickly to bring existing discoveries to market, and to make further discoveries, New Zealand will not have an oil and gas industry.

The implications for the national economy are significant, particularly given the long-term global supply-deficit and associated higher prices now forecast by some leading analysts. In the short to medium term, these drivers can only lead the country to seek ways to encourage explorers in order to avert a new energy crisis for the country.

The exception to this would be a significant oil discovery close to infrastructure such as the Western Platform of the Taranaki Basin, the potential for which is far greater now than it ever has been. Not only is there a significantly more positive view of prospectivity in this area, but there are several companies actively working this acreage.

Further countering the "gloomy" perspective is the marked increase in interest by international companies in exploring for hydrocarbons in New Zealand. Recent exploration activity, supported by discoveries in the East Coast and Taranaki basins of the North Island, have led to an enhanced view of prospectivity by the both the local and international industries. The presence of these new entrants to New Zealand should play a critical part in future success.

So, while NZ's E&P industry is small scale, has a declining production base, erratic exploration activity with relatively few recent discoveries and even fewer developments, there remains every reason to be positive about the future. The eight basins are seriously under-explored and are littered with many very good prospects, which has seen a resurgence of exploration interest and activity both nationally and internationally, especially offshore Taranaki and on the East Coast.

Another key aspect is the increasing diversity of the industry population with the entrance of new players that affords fresh perspectives and ideas. Also, the fiscal regime remains attractive, being amongst the most attractive in the world.

Challenges

In 1995, Rene Huck of Schlumberger Oilfield Services commented:

"...for the first time in history, the oil industry is having to take a good hard look at itself and ask - are we efficient enough?"

The message today remains the same, and assumes sharp reality in the context of New Zealand's producing fields in Taranaki. In February 2000, speaking at an industry forum in Taranaki, Dr Lloyd Taylor expressed the following sentiment:

"Taranaki's oil and gas industry will not survive beyond the next decade if it does not change to remain competitive."

Against this backdrop, the New Zealand industry faces a number of key challenges:

- reserves replacement;
- extending economic life;
- diversifying the gene pool;
- constructing new industry and commercial relationships;
- managing change and expectations; and
- technology.

While the primary challenge of the industry is to replace reserves, it is vital to preserve the opportunities and economics of existing fields and assets during the intervening period between exploration and new production. This demands "operational excellence" across the full spectrum of field operatorship - aggressive management of operating costs and the creation of the "cost culture"; strong capital discipline; maintenance of an effective level of plant integrity; maintenance of the safety culture; and enhancement of environmental vigilance.

The emergence of new entrants into the industry will play a critical role in determining the long-term outcome for the industry. Their presence will inevitably lead to pressures on existing alliances and relationships, and lead to the formation of new strategic alliances and the construction of new relationships between new entrants, and between new and existing players. Ultimate success will require a change in competitive behaviour that will require players to share risk in the exploration phase, and develop constructive commercial arrangements in the development and production phase.

Lastly, sustaining declining fields requires application of innovative, but appropriate technology. In this respect the limitations of the local service industry, and logistical challenges, demand a cautious, and highly selective approach in terms of applying new technologies. This does not mean being conservative, but rather, being smart about what new technologies are applied.

Issues

Within the context of these challenges there are a number of specific issues facing the industry in New Zealand.

Fiscal incentives

The fiscal regime in New Zealand is widely acknowledged as one of the most constructive in the world. However, that should not mean that we rest on our laurels. There are two areas where the regime must be improved in order to facilitate industry success.

Firstly, a mechanism needs to be found that sensibly assures that “twilight” fields remain competitive for as long as possible. The late-life management of an oil and gas field is probably the most difficult phase of a field’s life. It is certainly not the “sexy” end of the business, and these assets generally only get the attention when problems arise - there are few stories of people who have “made” their name in late-life field management. Attention tends to be focussed on opportunities and developments in new areas, with mature-field opportunities tending to be relegated to lower priorities. Nevertheless, there is opportunity and value to be derived from effective management of mature fields, and in this respect, there is alignment of the interests of both the Government and the oil companies to maximise the value potential of the assets. All other things being equal, the critical component in the value equation of a mature field is cost, and included as part of that cost is the cost of royalty and tax. The day that production revenue falls below the marginal operating cost, that well or field gets shut in. Some of New Zealand’s producing fields are approaching end-of-life, and it would seem to be a commercial imperative that both industry and Government seek a mutually beneficial royalties arrangement for such fields. Such a mechanism could be to establish a base economic production level for the asset with a declining royalty with declining production.

Secondly, the appraisal phase of a field involves significant cost and uncertainty. While there is provision for immediate tax write-down in the event of failure, there are many cases in the world where development economics are finely balanced. Kupe is a classic example. If the Government were to establish the kind of regime adopted by the UK for marginally economic fields, this could facilitate the development of such fields.

The place to conduct such discussions and negotiations could be through PEANZ.

Infrastructure access

While infrastructure (i.e. processing plant and facilities, storage, pipelines, port facilities) access is critical, the emerging supply-demand gap has the potential to create infrastructure access opportunities. Outside Taranaki there is little support infrastructure, so discoveries and subsequent development in new basins will naturally have to carry consequential costs.

Within Taranaki, infrastructure ownership lies with the established players (Fletcher Challenge Energy, Shell, Todd, NGC, and NZOG). In the past, existing players have been in a position to maximise economic rent from new entrants, new discoveries or new developments. However, with the

depletion of existing fields and resulting capacity in the surface system, these facilities’ owners are likely to increasingly compete for processing rights from new discoveries. This development raises the question of the possibility of commercial separation between the surface and subsurface assets. However, it would take a lot of goodwill between existing players to realise such an outcome, and because the overall infrastructure is still small, access arrangements to key assets such as the Maui infrastructure, (pipelines and offshore facilities) will present challenges for all players.

Within the industry, access to infrastructure is likely to result in tensions, and the development of effective infrastructure access models will become a key issues over the next 2-5 years.

Rationalisation of infrastructure management in Taranaki

Not only is Taranaki geographically compact, but the level of production derived from onshore fields is relatively small. Onshore production amounts to less than 20,000 barrels of liquid per day, with gas production about 40-50 PJ pa. Offshore, the only production is from Maui, which produces around 25,000 barrels of liquids per day and 160 PJ pa of gas.

Four oil and gas operators - Fletcher Challenge Energy, Shell Todd Oil Services Ltd, New Zealand Oil and Gas, and NGC presently deliver this production. Given the scale of the overall operations, the question is whether, in a mature field environment, one operator could manage the assets, thereby reducing duplicated costs. Clearly this is a sensitive point, and for some if not all of the operators, a strategic issue. But, given that most of the onshore fields are in late decline, the economic case would likely be fairly compelling.

There are a number of variations on the theme, but the one that appears to have a favourable hearing is the establishment of a new operating company (i.e. excluding sub-surface assets), owned by the existing players, which operates the surface facilities for the various field owners.

The practicality of this would likely require the separation of surface and subsurface assets, and it is difficult to see resolution of all the issues surrounding such a change. What will likely happen for the mature assets over the next two years, is that an “operator of choice” will emerge in Taranaki, and that operator will develop long-term arrangements with the new entrants for operation and processing of all New Zealand discoveries.

Sharing of non-competitive services and resources

However, even if there were to be no rationalisation of infrastructure management, the issue of greater sharing resources for non-competitive, or marginally competitive activities is an obvious synergy. Logistical activities are a

good example, namely warehousing, procurement, product storage, and aspects of field operations. This is happening to some extent, but continuing mistrust between some of the operators seems to be inhibiting progress.

Furthermore, the rewards are considered relatively small, compared with the weighting ascribed to the principles at issue. Nevertheless, when assessing the value of synergies, one can only see what one can see! This can be likened to an iceberg, where in fact one can only see one ninth of what is really there. This “iceberg effect”, i.e. what leads on from synergies, has the potential to create significant value to individual companies, and to the industry as a whole.

Importantly, the benefits of sharing of non-competitive services go beyond the narrow confines of the oil and gas companies. New Zealand does not have a strong oil & gas service industry base. The small scale of the local oil & gas industry, combined with its remote location discourages suppliers from establishing a long-term presence in the country. Many international suppliers and service providers are simply not interested in doing work in New Zealand unless it is part of a major project. Thus, securing anything other than routine oil & gas services carries with it a cost premium, particularly if related to drilling, well services or major development activities.

This is exemplified by the mobilisation cost for an offshore drilling unit of between US\$4m and US\$10m depending on the vessel’s point of origin. Heavy-lift barges attract similar mobilisation fees. Thus the flag-fall charge simply to get such equipment to NZ is a major cost in itself.

The other area where suppliers can play a key role is in knowledge-based disciplines. The ‘home grown’ knowledge base is small, and, notwithstanding the growing number of New Zealand-based oil and gas consultants, these people are largely derived from the same gene pool. In the long run, such inter-breeding can only harm local industry, and it becomes vital for the country to attract new talent with new ideas. In this respect, the activities of companies like Swift Energy, Westech, Vanco, and Spectrum Exploration have provided a spark not hitherto seen for some years.

‘Marketing’ of New Zealand

The Ministry of Commerce (now the Ministry of Economic Development) has been consistently active in marketing New Zealand as an attractive and prospective area for new entrants. Their efforts appear to be realising good results with the recent entrance by a number of companies, and they are to be commended on their efforts in a highly competitive environment. The industry could take a lead from the MOC and more actively promote the benefits and opportunities of doing business in New Zealand. Again, PEANZ could well carve out a useful role for itself here.

Resource management Act (RMA) and Tangata Whenua issues

Combining discussion of these two items into a couple of brief paragraphs has the potential to diminish their relevance

and importance of two of the more critical issues facing the industry. However, extensive discussion is not the purpose of this paper.

Turning first to the RMA, the act itself appears to be positively regarded across the legal, political and industrial spectrum. However, there are real concerns within the industry as to the way in which the act is being administered from a practical perspective. This concern is sharply focussed at the exploration end of the business where “due process” can consume several months and potentially years. Where environmental and community effects are sustained over a prolonged period, one can understand the need for an extensive evaluation, consultation and communication process. However, in the case of an exploration well, where the drilling activity is often confined to a few weeks at the most, and where the effects are not extraordinary, a prolonged approval process is simply going to deter exploration activity.

Tangata Whenua issues are in my view the most critical of issues facing both the industry and Government over the next 10-20 years. Maori claims to resource rights have been recognised in several areas, and it simply a matter of time before the issue of rights to minerals must be addressed. The current industry position is to defer the matter to the Crown on the basis that the Crown owns the minerals in the ground. However, value from the resource is only achieved through “partnership” between industry and the Crown, thus such deference is not sustainable in the long term. The ultimate reality is that all three will need to get together to thrash out a workable protocol. Again - a role for PEANZ?

Competitive attitudes

For over 50 years the dominance of a few players in a highly regulated environment limited the rivalry between competitors. However, the 1987-1990 exit of the Government and BP from the upstream business, and subsequent regulatory and fiscal changes have created an opportunity for new entrants. The door was further opened to new entrants by the introduction of the Government’s AFO system, which allowed any company to seek an exploration permit over almost any open acreage in New Zealand.

In a curious way, the changes in the regulatory and fiscal environment simply intensified rivalry (ref. Figure 3) between the traditional players, with much of the game being played in the country’s law courts. This tendency is a matter of growing concern amongst industry leaders. It seems that the local players have been engrossed in competing with each other to secure the biggest slice of a diminishing pie, while the new entrants have quietly gone about the business of exploration, focussing on devising the recipe for a new and bigger pie.

In this respect, one of the most fundamental pre-requisites for future industry survival and revival, are the development of constructive competition, and a preparedness to share value in order to create more value. This would be a competitive environment driven by the desire to create new ideas and realisations; an environment that looks towards what could be, rather than what is. The goal is to create a bigger pie, and

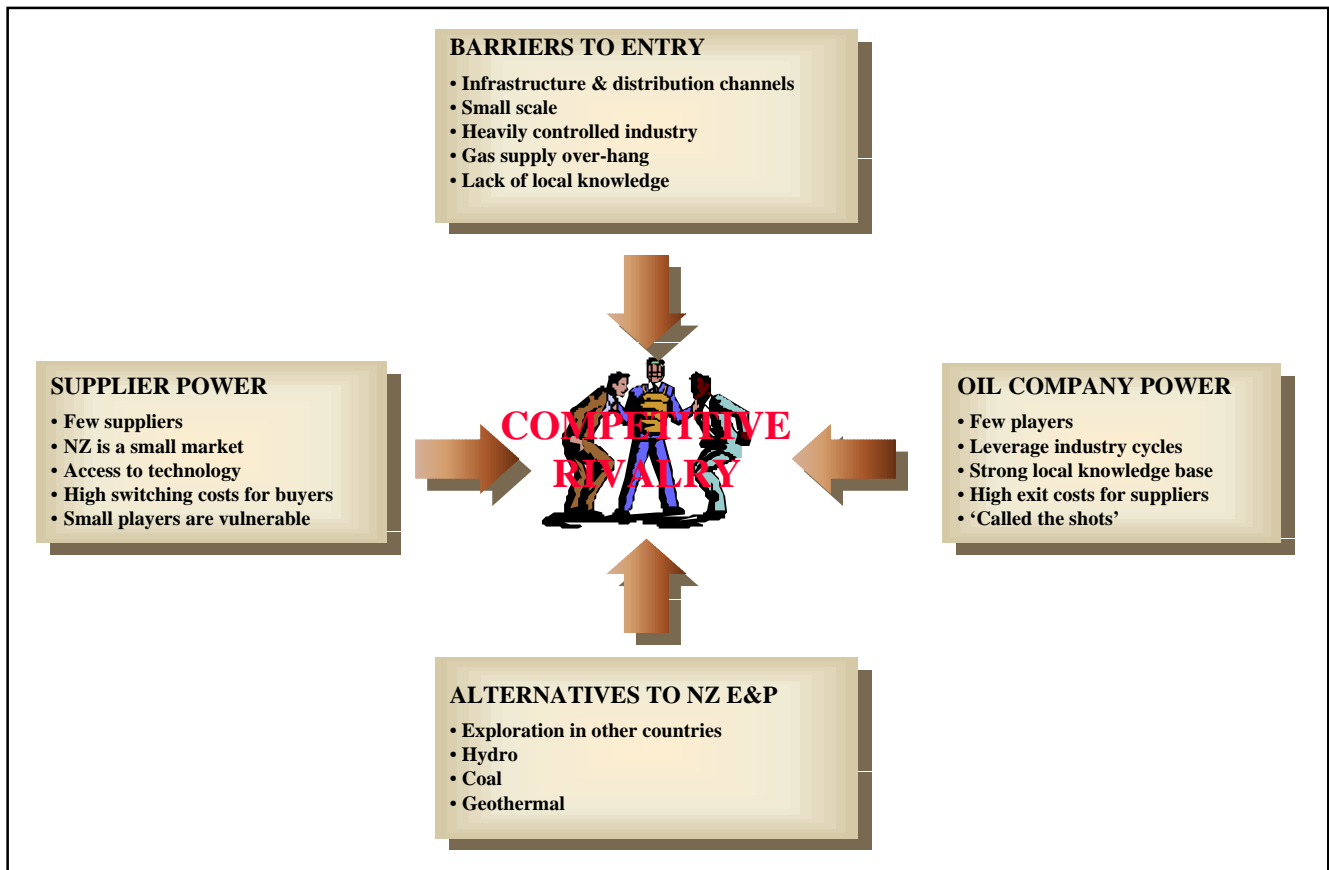


Figure 3: Historical model of New Zealand's competitive environment.

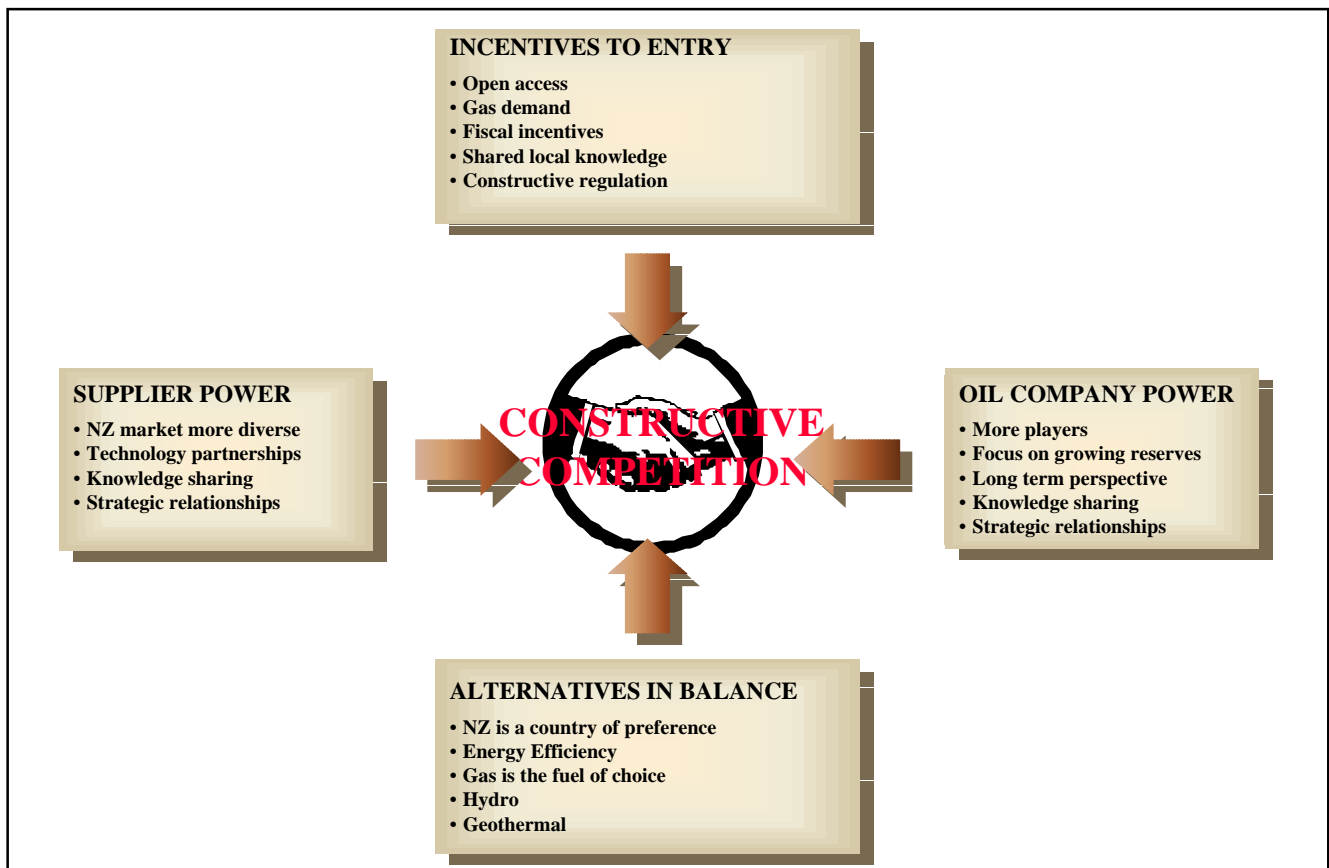


Figure 4: The competitive environment of the future.

in so doing, for players (service industry, explorers and producers alike) to recognise value, and take pragmatic decisions to enhance the chances of creating the bigger pie.

Conclusion

In summary, the stewardship of our declining assets is as important right now as the imperative to embark on exploration. Particularly in Taranaki, the economics of future reserves will be very dependent on the existence of the present infrastructure, and the preparedness of existing infrastructure owners to provide access. As a country, we have an opportunity to apply the lessons from other experiences to develop such an environment. And, while to some this may appear a naïve and utopic aspiration, I am strongly of the view that we must continue to move away from the adversarial and litigious models and behaviours, or we will simply perpetuate the squabble over lingering crumbs. It will be others who dine on the cake.

Acknowledgements

While this paper reflects the views of the author, it also reflects comments, opinions and ideas of a wide range of people within the New Zealand industry. In preparing the paper, I interviewed some 30 people across the entire spectrum of the industry, including senior executives in oil companies, service companies, industry bodies, the Government, and community stakeholders.

What was interesting was not so much the variety of perspectives, but the strong degree of alignment on the main challenges and issues facing the industry, and the desire to see a more constructive competitive environment develop in the country.

I gratefully acknowledge the time, consideration and frankness of those people.

Author

PHILIP BARRON is an experienced senior executive who has been involved with the international energy industry for over 20 years, working firstly with Shell International for thirteen years and latterly with Fletcher Challenge Energy. In mid 1999, he established his own consultancy, Aretê Ltd and has since worked closely with a number of hydrocarbon operators and service companies in New Zealand and Australia. He has been involved in the entire exploration and production spectrum, with particular business experience in the areas of project management, strategic planning, contract negotiation, joint venture management, risk and safety management, project economics, and line management of both large (>100) and small multi-discipline and multi-functional teams. He has worked on a range of offshore and onshore developments including projects in the North Sea, Southeast Asia and Australasia, both in the operated and non-operated role.