

AN OVERVIEW OF THE NEW ZEALAND PETROLEUM EXPLORATION SCENE AND THE ROLE OF GOVERNMENT IN PETROLEUM EXPLORATION

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Ownership of New Zealand's petroleum resources (oil, gas, condensate) is vested in the Crown. Accordingly, Government has a key role in exploration for and development of petroleum resources in New Zealand. The Ministry of Energy's Petroleum Unit is responsible for administration of government policy with respect to petroleum exploration. This paper discusses several of the Petroleum Unit's key areas of responsibility and outlines objectives and performance criteria to be met.

The main task of the Petroleum Unit is *the allocation of property rights* or, to use plain English, the issue of licences. This is done through advertising blocks on offer for competitive work programme bidding. Making sure the conditions are right to allow for competition is a major part of the Petroleum Unit's work and accordingly considerable resources are put into information and promotional material. The rationale for the allocation mechanism used, future licensing plans and performance objectives and criteria are outlined.

Ensuring the Government obtains a fair economic rent is another main task. The nature of the present economic rent is discussed.

Regulating and monitoring ongoing licensing activity is a further key area discussed.

The contribution of petroleum exploration and production to the New Zealand economy is also described. Over the last ten years, the petroleum industry has developed to the stage where it can now be described as approaching maturity.

The 1980s has seen the petroleum exploration and mining industry establish itself as a major contributor to the New Zealand economy. Today indigenous oil and gas supplies meet nearly 40% of New Zealand's energy requirements. Some 55% of New Zealand's transport fuel requirements are met from indigenous supplies of condensate, oil, LPG, CNG, and Synthetic petrol from gas. The industry is involved in expenditure in excess of \$200 million per annum on exploration and in excess of \$150 million per annum on development. Support services for exploration and development are being established more and more in New Zealand.

As the theme of this conference states, the oil exploration and mining industry is moving toward maturity. It is an industry in growth.

There are presently 44 petroleum prospecting licences and 11 petroleum mining licences on issue.

Predominantly these are located over the Taranaki Basin, which to date has had New Zealand's only commercial discoveries. Presently five Taranaki fields are producing: offshore the large Maui gas-condensate field; and onshore the Kapuni gas condensate field, the small Kaimiro gas field,

the McKee oil field and the Tikorangi Limestone oil-gas discovery at Waihapa.

Other discoveries in Taranaki are presently being appraised or further investigated. Onshore these are the Stratford, Ahuroa and Tariki discoveries and a new discovery at Kaimiro. Offshore the Kupe South oil-gas discovery and Kora oil-gas discovery are being investigated.

The Kupe South, Kora and Waihapa-Tikorangi Limestone discoveries in the last three years have significantly promoted exploration interest in the Taranaki region and New Zealand in general.

The Kupe South wells cumulatively tested at 10 000 barrels of oil per day and the Waihapa-Tikorangi Limestone discovery has been on long term production testing of 7000 to 8000 barrels of oil per day for over 12 months. The Kora-1 discovery well was the first well drilled by ARCO Petroleum NZ and tested at 660 barrels of oil per day.

Taranaki licensing rounds in each of the last three years have all attracted considerable interest.

New Zealand's other sedimentary basins remain relatively unexplored and are often referred to as frontier acreage.

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Over the last two years, following a successful promotion of blocks, thirteen licences were granted over the East Coast margin. Exploration activity here has predominantly been seismic surveying, seismic reprocessing and geological interpretation to date. There is considerable optimism and interest from explorers in this area, and well drilling is likely to occur in the next 18 months.

The licences on the East Coast margin are large in area reflecting the more frontier nature of exploration along this margin. They range in area from 3000 to 6000+ square km. This compares with Taranaki basin licences of 200 to 500 square km onshore and 600 to 2000 square km offshore.

Licences are also on issue over the North Wanganui, Southland, Westland and Nelson basins. The Southland and Nelson licences both saw exploration well drilling in the last 18 months. However the results were unsuccessful.

The Government has a key role in exploration for and development of petroleum resources in New Zealand. This is principally derived from ownership of all New Zealand's petroleum resources being vested in the Crown under the Petroleum Act 1937.

All petroleum exploration and development must be undertaken under the authority of the Petroleum Act, which has the objective to make better provision for the encouragement and regulation of mining for petroleum and to provide for matters incidental thereto.

Under the authority of the Petroleum Act the Government transfers its property rights to exploration companies in order to allow them to explore for and extract petroleum deposits.

Responsibility for the administration of the Petroleum Act lies principally with the Ministry of Energy. The Ministry's Petroleum Unit is accountable for those matters relating to the allocation of licences, the encouragement of petroleum exploration and the policing of conditions the Act requires licence holders to uphold.

I would like to introduce those working in the Petroleum Unit and will then discuss the work of the Unit and the nature of the petroleum licensing system in New Zealand.

The Petroleum Unit consists of six people, including myself, the Manager of the Unit. Chris Connell and Ann McSweeney are the two geologists employed in the Unit. They are involved in all matters to do with licensing and work programmes. They also have responsibility for data lodgement and provide advice as requested on joint venture matters. Shirley Weir is our investigating officer responsible for finances and deposits and bond lodgements, all matters pertaining to pipelines authorisations and Shirley also is involved in petroleum licensing matters in particular assignments of interest. Millie Ferris is the assistant Editor of *Petroleum Exploration in New Zealand News* and responsible for the publication of this magazine. Millie has also been the Conference Secretary for this 1989 Exploration Conference. Providing us all with back-up support, lastly is Geoff Oram our clerical assistant. And attached to the Unit is our typist Koula Toulis.

The main task or output of the Petroleum Unit is licensing. Licensing is essentially the allocation of a property right

by the Government. This property right is tradeable and enforceable by law.

The allocation system employed in New Zealand for petroleum exploration resulting in petroleum prospecting licences is staged competitive work programme bidding.

A competitive system allows more players the opportunity to bid for access to explore for petroleum and allows that party which values the resource exploration opportunity most, to obtain the right to explore.

The licensing process begins with a *blocks offer*. Blocks available for licensing are defined by the Petroleum Unit and are advertised in the publication *Petroleum Exploration in New Zealand News*. Where to have a blocks offer is determined by the Petroleum Unit and may be initiated to encourage exploration interest in an area or may result from a request from an exploration company to advertise a particular area.

Exploration companies may trigger a blocks offer by making what is called a *notification of interest* in an area. This means that companies are not solely dependent on the Ministry determining that there may be exploration interest in an area and thus promoting a blocks offer. However, if a notification of interest is made a company is expected to bid for the block.

The Petroleum Unit has a performance objective that there is constantly to be acreage available for petroleum prospecting licence application.

Presently there is acreage available for bid offshore Taranaki. The closing date for the 24 blocks available here is 27 October 1989.

Just advertised are fifteen blocks onshore and offshore over the Canterbury Basin and four reconnaissance blocks over the Chatham Rise. Canterbury hasn't been licensed since the early 1980s. There have been some interesting findings there in the past. I refer you to *Petroleum Exploration in New Zealand News*, August and July editions for details of these offers.

For a new blocks offer round at least six months is allowed between advertising the round and the closing date for bids. This time frame allows sufficient time for evaluation of data and at the same time does not penalise the keen explorer, time-wise, from being able to commence exploration.

Blocks which remain unlicensed after an initial round often are readvertised shortly after the award of new licences. This allows companies which may have missed out with their applications to have a second opportunity to obtain acreage in the area and there seems also to be general interest from companies in a readvertisement. For a readvertisement there may be a shorter period of evaluation of three or four months.

How to apply for a licence is outlined in New Zealand's *Petroleum Prospectus* and in each issue of the magazine *Petroleum Exploration in New Zealand News*. For those who are not familiar with the process I invite you to obtain a copy of the Prospectus and magazine from the Information Desk and Ministry of Energy display.

The most important part of the licence application is the *work programme bid*, which if successful becomes the

Second Schedule to the Petroleum Prospecting Licence issued.

As noted, staged work programme bids are the accepted approach. These are such that at a defined period of time the exploration company makes an option to proceed to further exploration or to surrender the licence.

There is often confusion about the nature of a staged work programme bid so I shall provide an example. Let us say I am an explorer and have applied for a licence in an area where there has been some but not much previous exploration undertaken and there is not a great deal known about the area. I have made a staged work programme bid as follows on the expectation of a 1 October 1989 licence being issued.

My bid might look like this:

- (a) (i) Prior to 1 October 1990: undertake x kilometres of seismic reprocessing, shoot x kilometres of regional seismic and review and interpret the results; and (ii) *either* commit to (b) below; *or* surrender the licence.
- (b) (i) Prior to 1 October 1991: shoot x kilometres of detailed seismic and review and interpret the results; and (ii) *either* commit to (c) below; *or* surrender the licence.
- (c) (i) Prior to 1 October 1992: drill one exploration well to economic basement; and (ii) *either* submit a new work programme for the remainder of the licence term; *or* surrender the licence.

The Petroleum Unit aims to process all prospecting licence applications within two months of receipt and has a performance target which must be met of processing applications within three months. To date we have not failed to meet this.

This Unit also operates on a cost recovery basis and accordingly there is a licence application fee of \$1000 plus GST.

If your licence application is successful, the Minister of Energy will write to you *offering* you a licence over the defined block upon certain terms and conditions.

The work programme that you bid, perhaps slightly modified to reflect the accepted licensing jargon, will be incorporated into the licence's Second Schedule. Also the Crown's economic rent will be defined in the Second Schedule.

Ensuring the Government, as owner of the nation's petroleum resources, obtains a fair economic rent is as important a licensing outcome for the Petroleum Unit as ensuring the legally enforceable property right.

The Crown's economic rent is obtained in three fashions: Firstly, a 12.5% ad valorem royalty is payable on all petroleum produced.

Secondly, the Government through the Minister of Energy takes an 11% carried interest in the prospecting licence. The 11% carried interest is a full participatory interest and the Minister of Energy accordingly is part of the joint venture and a signatory to the joint venture operating agreement. The carried interest converts to a contributory interest when a discovery is made and the licence joint venture determines that it will develop and produce the discovery. In

brief, the 11% carry is a risk free entitlement the Crown takes to participate in the development of a discovery.

Part of the economic rent is the lodgement of data as required under the Petroleum Act.

You will of course as a licensee have to abide by the Petroleum Act in all dealings related to your licence.

Before the licence is issued there must be a bond or deposit of \$250 000 lodged. This is a guarantee that the licensees will meet the obligations of their licence commitments. The bond/deposit is very reasonable when you put it into perspective of the cost of the exploration work. For example, if an explorationist was committed to an offshore well and then did not drill it, the Government would be able to take the bond of \$250 000 but would miss out on exploration work in excess of \$5 million. A maximum period of four months is extended between the Minister agreeing to grant the licence and the company having to lodge the bond or deposit and thus the licence being issued.

Ensuring that you have the ability to raise a bond which can be lodged with the Government for at least six years should be determined before licence application. The Government views with extreme concern the non-issue of a block because the successful applicant consequently could not raise a bond. It means that the other serious contenders for the block have been prejudiced in their application assessment. When applying for a licence the financial capability of the company to undertake the exploration work programme needs to be demonstrated. For Officials this is one of the most difficult criteria to assess and the ability to lodge a bond or deposit is often referred to as our ultimate test.

As well as demonstrating financial capability, the applicants for a licence must also demonstrate technical capability to undertake the proposed exploration programme.

A last point on applying for a petroleum prospecting licence is to note that if the applicants would like to give a *presentation* of the rationale for the application, the Petroleum Unit will always be pleased to receive this. There is no compulsion on a presentation but increasingly with the extensive work being put into evaluating acreage prior to application companies are asking to give a presentation. Petroleum Unit and New Zealand Geological Survey staff attend the presentation and find it very helpful in later assessing the application.

When a licence is granted there is regular contact between the licensees, particularly the operator, and the Petroleum Unit.

Firstly, monthly reports on activity in the prospecting licence are required. I should advise that the Petroleum Unit is currently undertaking a first review of the Petroleum Regulations 1978 and proposes to replace monthly reports with three monthly or quarterly reports. Monthly reporting appears to be just a little too frequent to allow meaningful reporting.

The present monthly and proposed quarterly reports allow for monitoring of petroleum prospecting activity which is another of the important objectives of the licensing system. For the Government, having a licensing system is a systematic way of obtaining information on the nation's petroleum resources.

If a licensee wishes to farm-out or transfer his interests again this involves contact with the Petroleum Unit. Assignments of interest require the Minister of Energy's approval but are straightforward to process usually. There is a processing fee of \$300 plus GST. The performance target is that assignments of interest are processed and recorded in the licence register within one month.

If a licensee strikes difficulties in meeting work programme obligations there is also the opportunity to amend the licence Second Schedule work programme, but this will not be agreed to by the Minister unless there are exceptional circumstances.

A primary principle followed is that of fair play. In a competitive work programme bidding situation it is not appropriate for an applicant to make a fantastic bid and then within six months having been successful and obtained a licence want to amend it, to a lesser work programme because it was unrealistic. To date this has not occurred but it is something the Petroleum Unit is aware of. The principle of fair play is such that the successful bidders should not be penalised further.

The second major output of the Petroleum Unit is summarised as Petroleum Promotion and Information. This output is intricately related to Petroleum licensing and essentially involves making sure the market place has access to information on the petroleum regime and petroleum exploration industry in New Zealand to allow for competition in the licensing process. This output has the

ancillary outcome of providing information to the Government and community on the industry. This information would probably not otherwise be produced.

I am talking here about production of *Petroleum Exploration in New Zealand News*, the *Petroleum Prospectus*, *Geological Information Pamphlets*, the *Concessions Map* and *Petroleum Wells in New Zealand*. I would urge those who are unfamiliar with any of these publications to visit the Ministry of Energy stand.

Promotional activities also include organising this Conference, and there have been specific promotions to North America and Europe visiting companies to advise them on exploration opportunities in New Zealand. Petroleum Unit staff are always available to talk to new explorers when visiting New Zealand and encourage them to make an appointment to see us. The Petroleum Unit is proud of its information and promotion work and has had some good feedback. Feedback is very much welcomed.

I would like to conclude on that note. Feedback on promotion and information work and licensing is something that is valued. In particular the Petroleum Unit would welcome company opinions on the licensing process and the way blocks are chosen for advertisement and advertised, and the time allowed for evaluation.

It is great to see so many people here at the Conference and interested in petroleum exploration in New Zealand. I hope you have a wonderful time.