

# THE INTERNATIONAL PETROLEUM INVESTMENT ENVIRONMENT: GLOBAL TRENDS AND PROSPECTS FOR NEW ZEALAND

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This paper is divided into four sections: an overview of international trends in the oil industry; an examination of the investment climate in New Zealand; an examination of recent and current trends in the New Zealand petroleum industry; and an assessment of future New Zealand oil industry trends based on current and proposed policy.

The analysis of international oil trends encompasses an examination of global supply, demand, price and investment trends over the past two decades. Of particular interest is the tendency for increasing investment outside OPEC and outside North America.

The assessment of the investment climate in New Zealand provides a national accounts perspective, as well as setting the performance of the New Zealand sharemarket in a global context. An economic outlook for the economy is also provided.

The trends examined with respect to New Zealand's oil industry cover volume and value of production, royalty payments, exploration and development expenditures, licence applications and wells drilled. The contribution of the oil industry to total energy production is compared with other energy sectors.

The assessment of future prospects of the industry takes into consideration several factors including petroleum mining taxation developments, Resource Management Law Reform conclusions, and any new resource pricing policies agreed by Cabinet.

This paper examines both global and local factors affecting petroleum investment in New Zealand, and assesses future prospects.

## INTERNATIONAL TRENDS

There have been three important turning points in international oil supply and demand since World War II; in 1973/74, 1978/79 and 1985/86 (Table 1). The first of these occurred when OPEC oil prices were quadrupled at the end of 1973, at the same time as the OPEC oil embargo. The second occurred as a result of Iranian revolution, and the third occurred when OPEC's oil pricing structure collapsed.

At the first turning point, demand growth was dampened in OECD countries; at the second turning point demand was hit significantly in OECD countries as a result of higher oil prices, and curtailed in non-OECD consumers. As a result of the price collapse, demand has grown nearly everywhere and world oil demand is rising at the rate of at least one million barrels a day every year.

Important features of world oil supply (Figs. 1 and 2) are:

- (a) The world's residual producers have been the OPEC countries, whose production in 1985 averaged only 55% of their peak production year (1977 at 31.68 mbd).
- (b) North American production peaked in 1973.

- (c) USSR production peaked in 1987.
- (d) The North Sea is close to its all time peak.
- (e) Production in non-OECD/CPE/OPEC (i.e. non-OPEC developing countries) has been the brightest star; trebling since 1972, with major increases in production (in Mexico, India, Egypt, Brazil, Malaysia, Oman etc.).

These supply/demand patterns have been heavily influenced by price changes. Up to 1973, oil demand was growing at 7% per annum, so there has been a complete sea-change since. To give an idea of the extent to which oil prices have changed since 1973, a few important prices and dates are provided (Table 2). In real terms, oil prices are nowadays lower than they were over 1974-78, being perhaps US\$6-7/bbl in 1973.

A resultant shift in prospecting activity to new areas, coupled with geological prospectivity and rising oil prices, had the effect of bringing forward oil supplies that might not otherwise have been tapped for a decade or more. These new supplies were generally outside the Middle East, particularly in the non-OPEC developing countries and in the North Sea; the latter being a comparatively expensive development. Many of these areas gave oil companies the prospect

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Production	1973	1975	1979	1985	1989
North America	13.05	11.67	11.88	12.38	11.4
Other OECD	0.88	1.08	2.86	4.65	4.6
USSR	8.49	9.71	11.63	11.88	12.5
Middle East	21.29	19.82	22.00	11.03	16.0
Other	14.70	13.44	17.37	18.03	19.5
<b>World Total</b>	<b>58.41</b>	<b>55.72</b>	<b>65.74</b>	<b>57.97</b>	<b>64.0</b>
Memo: OPEC	31.18	27.55	31.52	17.51	22.5
CPE	10.04	1.75	14.25	14.85	15.0
non-OECD/CPE/ OPEC	3.26	3.68	5.22	8.56	9.4
<b>Consumption</b>					
North America	19.70	18.37	20.93	17.54	19.3
Other OECD	20.84	18.89	20.87	16.86	18.2
USSR	6.63	7.42	8.68	9.07	9.1
Other	10.39	11.23	14.90	16.64	18.0
<b>World Total</b>	<b>57.56</b>	<b>55.91</b>	<b>65.38</b>	<b>60.11</b>	<b>64.6</b>

Sources:  
IEA/OECD World Energy Statistics and Balances 1971-87  
IEA/OECD Monthly Oil Market Report 1989, plus Ministry of Energy estimates  
(CPE = Centrally Planned Economies)

Table 1: Oil supply and demand.

of profitable investments, even though physical production costs would be much greater than in those Middle East and other OPEC countries which held (and still hold) the bulk of the world oil reserves. (The Middle East has 65% of world oil reserves, and OPEC member countries about 75%).

On the other hand, exploration and development expenditures in the US, which rose significantly in the late 1970s, peaked in 1981 at over 60% of world expenditures outside CPEs (Fig. 3). They have since more than halved, whereas expenditure in all other regions has on average fallen by less than 20% (Table 3). In other words, substantial expenditure continues to be made around the world on a more selective basis than hitherto.

In particular, unit costs have fallen with the decreasing availability of funds, meaning that the amount of exploration drilling able to be undertaken has not fallen to the same degree. Indeed, 1988 saw an expansion again of activity by some 15% (Table 4).

### NEW ZEALAND INVESTMENT CLIMATE

The dramatic shift in oil price expectations since 1985 has coincided with a flow of measures aimed at improving the competitiveness and efficiency of the NZ economy. The positive actions and impacts include:

- Floating of the NZ dollar.
- Commerce Act reform to promote competition (such as electricity supply).
- Deregulation of financial markets.
- Closer Economic Relations with Australia.
- The conversion of government owned trading organisations (such as electricity supply) to State owned enterprises (SOEs).
- The privatisation of the government's oil ventures.

- The lowering of tariff barriers.
- Taxation restructuring (with more indirect tax and lower company and personal taxes).
- Easier rules for foreign investment, and falling interest rates.
- A lower government deficit as a % of GDP.
- A current account surplus in the June 1989 year.
- Lower inflation than in most periods since 1970 (except during the price freeze).
- A turnaround in New Zealand's net external debt to a figure of 41% of GDP (Table 5).

Nevertheless there have also been negative aspects arising from the restructuring, particularly little economic growth,

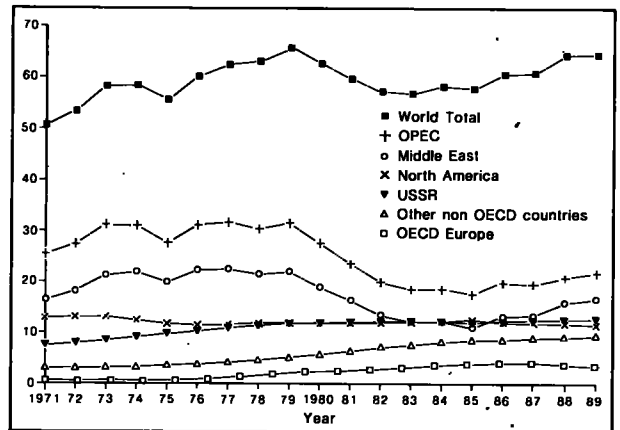


Fig. 1: World oil production.

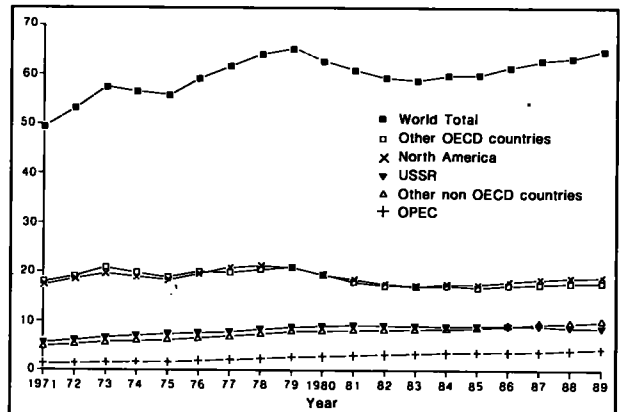


Fig. 2: World oil consumption.

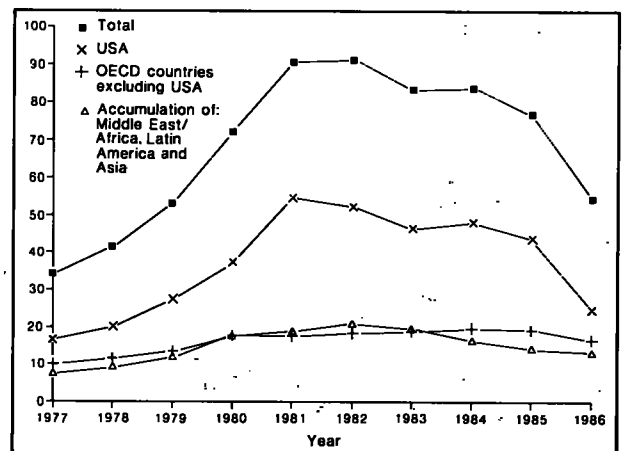


Fig. 3: Global oil exploration/production expenditures.

Mid 1973	\$2.75	US per barrel, Saudi Arabian
Jan 1974	\$10.84	Light crude official selling prices
Jan 1979	\$13.34	
Jan 1980	\$26	
Jan 1981	\$32	
Jan 1982	\$34	
Mar 1983	\$29	
Jan 1985	\$28	
1986	\$14	Estimated, spot average for crude
1987	\$17	
1988	\$14	

Table 2: Middle East light crude.

	1977	1981	1984	1985	1986
OECD except USA	9.9	17.7	19.6	19.4	16.6
Middle East/Africa	2.3	4.8	4.5	4.0	3.2
Latin America	3.7	10.6	8.1	7.0	7.0
Asia/Pacific	1.6	3.0	3.7	3.2	3.0
Sub-total	17.5	36.0	35.9	33.6	29.8
United States	16.6	54.7	8.1	43.6	24.8
Total outside CPE	34.1	90.7	84.0	77.2	54.6
% in USA	48.7	60.3	57.3	56.5	45.4

Source: Chase Manhattan Bank

Table 3: Global oil exploration/development (Expenditures: US\$ billion).

	1984	1985	1986	1987	1988
Middle East	155	112	128	95	122
Africa	295	284	247	251	232
Europe	690	715	678	495	570
Latin America	591	698	501	473	502
Far East/	751	660	505	505	716
Australasia					
Total Excl.	2482	2469	2059	1819	2142
China and Eastern					
Europe /USSR					
China	1150	1445	1430	1562	1642

Source: Petroconsultants

Table 4: Exploratory drilling (wells drilled).

company failures and near failures, high unemployment and rising government expenditures (in real terms).

The New Zealand share market was worse hit in the 16 October 1987 stock market collapse than most others. As at 30 June 1989, the Financial Times Actuaries World Indices (in local currencies) showed New Zealand's performance to be the worst of the 24 countries measured. It had fallen by 47% since October 1987, whereas the world index was now 10% higher than in October 1987, with fully two thirds of the country indices being in a better position than in October 1987. Table 6 sets out the relative performances. Since 30 June, however, the New Zealand sharemarket has generally sparkled, and has risen by over 20%.

The outlook for the New Zealand economy is positive, with much better terms of trade than for the last 15 years, and

with improvements expected in a number of economic indicators. That is not to say that there will not be areas of difficulty, such as commercial construction. The key to progress is undoubtedly productive investment in plant and machinery, and that should rise as investors and entrepreneurs perceive opportunities in a deregulated economy with consistent financial sector management.

## NEW ZEALAND'S OIL INDUSTRY

New Zealand's oil industry in 1988 can be summarised as follows (Table 7).

New Zealand is not a major oil producer, consumer, exporter or importer. Nevertheless crude oil/condensate production has been increasing on a consistent basis since the first material production year of 1970 when about 60 000 tonnes of Kapuni condensate were produced (Fig. 4). Since then, the new producers have been Maui condensate (1979), McKee etc. crude (1981) and Waihapa crude (1988).

Table 8 shows the trends in oil production (excluding synthetic gasoline production), wells drilled, seismic surveys and prospecting licences on issue. If one considers the Asia-Pacific region (excluding China) New Zealand produces just 1% of the oil, and 4% of the gas in the region. On the basis of Petroconsultants' figures, 2-3% of the exploration and appraisal wells in the region are drilled in New Zealand. To date New Zealand is a minor player ranked about half-way down in the list of countries in the region with oil production.

Oil is the only energy source in which New Zealand is not self sufficient. Net oil imports of 90 PJ represented only 17% of total primary energy requirements (TPER) of 528 PJ in 1988. On the other hand, crude/condensate and LPG production at 70 PJ represented a sizeable 13% of TPER.

Indigenous oil's contribution to TPER is now greater than that of coal (48 PJ) or wood (19 PJ) but less than that of gas (174 PJ) and electricity (254 PJ).

## FUTURE PROSPECTS

To continue to receive petroleum investment dollars, New Zealand must be regarded as a stable country, with terms and conditions for petroleum investment commensurate with its risk and geological prospectivity. New Zealand is competing for that investment with its neighbours. If oil prices were expected to rise, that would spur a general increase in exploration budgets, but, at the moment, investment has to be more selective relative to a \$15/bbl oil price.

There's no point in establishing a regime of licence and fiscal terms and conditions that will not survive or cope with future fluctuations in oil prices. Investors would see that any regime that was unbalanced would have to be revised again, and that means unnecessary uncertainty.

Several potential reforms are on the horizon, and I shall discuss these below.

## Petroleum mining taxation development

The Government has been reviewing the income tax regime relating to petroleum mining investment. A proposal has been made to capitalise all exploration costs, for income tax purposes, irrespective of the success or failure of any venture. A ten year straight line write-off of that capital

March year end (\$M)	1984	1985	1986	1987	1988	1989 <sup>1</sup>
Government	8226	12366	14427	21735	17257	16700
Reserve Bank	1162	1550	1168	1043	912	95
Govt corporations	2805	5249	5601	7211	6088	7000
Private	3885	5449	5228	7204	7920	6300
Total gross external debt	16078	24614	26424	37193	32447	30095
As percentage of gdp	47%	63%	59%	70%	55%	48%
Official reserves	1228	1940	2667	7544	5569	4003
Total net external debt	14950	22674	23757	29649	26878	26095
As percentage of gdp	44%	58%	53%	56%	45%	41%
Balance on current account	-1992	3244	3417	-2337	-2340	-1369
Fiscal balance <sup>2</sup>	-3101	NA	NA	-1052	467	1632

<sup>1</sup> DFC estimates

<sup>2</sup> Table 2 basis

<sup>3</sup> Long term debt (maturities over more than year)

Sources: Statistics Department and Reserve Bank, Dominion

Table 5: New Zealand's gross and net external debt<sup>3</sup>.

Country (local indices)	%change on Oct 18 1987	%change on pre-crash record high
Australia	-29	-34
Austria	+54	+29
Belgium	+27	+13
Canada	+5	-8
Denmark	+60	+34
Finland	+19	+15
France	+32	+6
West Germany	+0.7	-18
Hong Kong	-41	-43
Ireland	-4	-9
Italy	-1	-29
Japan	+26	+25
Malaysia	+8	-6
Mexico	+13	-0.8
Netherlands	+14	-1.5
New Zealand	-47	-51
Norway	+12	+8
Singapore	-6	-13
South Africa	-34	-39
Spain	+1	-5
Sweden	+34	+29
Switzerland	+6	+2
UK	-5	-9
USA	+15	-3
World	+10	+3

Based on June 28, 1989 Financial Times Actuaries World Indices (local currencies)

Table 6: Relative performance.

expenditure would then be allowed. It has been claimed that this would bring the taxation provisions applying to oil exploration more into line with those applying to other industries. The major argument for such a change is the desirability of a more neutral taxation system.

There are also arguments against such a move. One argument is that, because of the degree of risk involved in oil

	Thousands of tonnes per year	Thousands of barrels per day
<b>Production</b>		
Crude, condensate	1520	33.7
Synthetic gasoline	620	14.6
LPG	100	3.2
Total	2240	51.5
<b>Consumption</b>		
Internal	3580	79.2
International transport	503	10.4
Refinery fuel & loss	315	5.7
Total	4398	95.3

Source:

Energy Data Files; IEA/OECD Oil and Gas Statistics

Table 7: Production and demand.

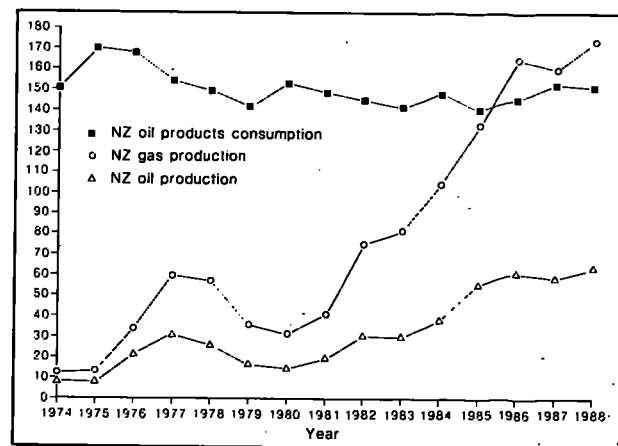


Fig. 4: New Zealand oil and gas production and oil products consumption.

exploration, a prompt write-off of investment expenditure is appropriate, at least when no oil or gas has been found.

	1972	1975	1978	1980	1982	1984	1985	1986	1987	1988
Exploration wells	NA	NA	6	2	2	12	15	14	7	
Appraisal wells	NA	NA	1	1	2	-	2	3	3	
Development wells *	NA	NA					1	1	6	
Seismic surveys (km)	NA	NA	839	1412	16396	5400	1740	4410	3749	
Property licences at issue	NA	NA	22-25	NA	39	33	NA	23	31	49
Oil production (Kt)	141	179	575	327	673	841	1227	1354	1292	1520
Net gas production (PJ)	12	15	59	37	81	113	145	175	169	184
1987										
Value oil & gas production		\$352M								
Royalties		\$21M								
Carried interests		\$34.5M								

\* Excludes 12 Maui A production wells

Sources: Energy Data File, MOE Petroleum Exploration in New Zealand, MOE October 1988 Overview Paper: Resource Allocation and Rent Recovery, MOE 1989

Table 8: Oil industry activity.

Against this it can be argued that the high risk investment should be rewarded by a higher rate of return; and that this higher return would be more common if market forces alone determined investment decisions. With a higher rate of return, no special tax concessions would be needed to attract investment.

It is indeed a plausible thesis that taxation concessions, worldwide, promote additional oil exploration, that they therefore increase the amount of oil discovered and that, to that extent, they depress prices and profits. Depressed profits, in this thesis, then become a motive for continued taxation concessions.

Even if this thesis is accepted, there is nothing that New Zealand, on its own, can do to change the situation. The New Zealand oil market is not isolated from the world oil market. The profits which can be made from oil mining in New Zealand are limited by the profits which are made from oil mining internationally. We cannot have our own local, higher, rate of return on oil mining investment; at least not without going back to a strictly regulated oil market.

Australia, Canada and the United Kingdom all allow exploration costs to be treated as current expenditure, and to be offset against the current year's income from other investments.

Even more generous treatment is given overseas for the development costs of wells (incurred after successful exploration has been completed). In Australia, these well-related construction costs are written off over ten years, or the life of the field; whichever is the shorter. In Canada, they qualify for a 30% diminishing basis write off, which is considerably more favourable to the taxpayer than ten years straight line.

#### Resource Management Law Reform conclusions

The Minister has already outlined the law reform exercise that the Government is undertaking. I would like to make a few comments on some of the objectives the Ministry of Energy\* is seeking from the resource management law reform (RMLR) process.

**Objectives** The key objectives applying to these residual functions will be to create an efficient framework of property rights for the allocation and pricing of rights to the Crown's mineral and energy resources, and to recover an equitable share of the economic rent arising from the development of the Crown's resources.

**Resource management** The new Act and its procedures will place a greater emphasis on the management of Crown owned resources. Because the characteristics of the resources and their markets vary, it is intended that there will be a choice of pricing and allocation methods available to ensure the objectives of this part of the Act are achieved.

It is proposed that central government will prepare resource or mineral management strategies which will describe the methods by which particular resources will be priced and allocated in different places. In preparing the strategies, the Minister must have regard to the objectives for the management of Crown mineral and energy resources (efficiency and economic rent) and to the rate of depletion of the resource.

The strategies will be open for public comment and, after consideration of public submissions, approved for public notification by the Minister. On the application of any person or body, the Planning Tribunal may conduct an inquiry and make a report and recommendation to the Minister on whether the objectives applying to resource management strategies have been appropriately considered and weighed. The strategy will then be approved by Order in Council and attain the force and effect of a regulation. Amendments to the strategy will follow a similar procedure, either after five years in force or on the instigation of the Minister of Energy.

Resources will then be allocated in terms of the strategy and there will be no public input to each individual application. If an application or a competitive tender meets the criteria described in the management strategy, it is envisaged that the allocation of the lease should be a formality. The resource management strategies should ensure that there is flexibility in resource management, and that the resource

\*Now Ministry of Commerce.

managers are publicly accountable for their choice of pricing and allocation regime, while ensuring that firms have certainty as to the conditions under which they will be making investment decisions.

**Pricing and allocation** On approval of the strategy, the Ministry will be obliged to allocate and price resources in accordance with it. The rules will be set for the period of operation of the strategy, and allocations made during its currency will form part of the ongoing contract between the Crown and the developer irrespective of subsequent changes to the strategy. Providing applicants can meet the terms of the strategy and requirements as to registration etc, a lease will be obtainable on a confidential basis without public input.

The exercise of the lease will, however, be subject to obtaining any necessary planning consent and water rights from local and regional government and the consent of the surface landowner. This is already the case for geothermal and petroleum developments.

It is proposed that a variety of pricing and allocative methods be provided for in the Act. We have yet to develop the detail of the methods proposed but there are a number of overseas examples which illustrate the options we consider may be useful.

Allocative systems can be either competitive or non-competitive. There are two competitive methods; cash bonus bidding (for which we are able to use either US or Australian legislation as models) and staged work programme bidding (for which we are using the Petroleum Act as a model). The non-competitive system is illustrated by the existing *first come, first served* provisions of the Mining and Coal Mines Acts.

Work is continuing on rent recovery systems. Our preference at this stage, however, is for a broad empowering provision similar to those currently existing, with the detail of the methods described in the resource management strategy regulations. This discretion would enable us to tailor the royalty provisions to the economics of particular resources and individual projects. While it is only fair that the public of New Zealand recovers a share of the rent arising from the development of its resources, the level at which this is set needs to take into account the respective risks adopted by the resource owner and developer, and the economics of the particular project. Hence the need for flexibility, both in the

level and the means by which royalties are paid.

**Conclusions** The deregulation and restructuring of the energy economy, plus the rationalisation of resource management law, means that New Zealand is offering investors and potential investors in the petroleum sector a message of consistency and fairness. In contrast to the 1970s, when exploration here tended to be dominated offshore by the pioneering Maui discovery, and onshore by an active state-run company which obtained a stranglehold on prospecting rights in the more attractive areas, the door is open for anyone who believes that the petroleum sector offers a better potential return than any rival investment they might be considering.

Downstream, successful efforts have been made to open up markets, deregulate activities such as oil refining, and to promote efficiency through market-led shake-ups of areas such as coastal shipping.

The move to a liberal tax regime, with emphasis on taxation neutrality and on spreading the tax base through a *Goods and Services* tax is a very positive one for the industry. Admittedly, the concept of treating petroleum as a favoured sector with special tax concessions is now gone. There is no such thing as a favoured sector as far as the IRD is concerned. Anyone with any involvement in the North Sea will be well aware that primary generosity with taxes can be clear justification for taking another slice. Thus, while you won't get many tax carrots to lure you into the petroleum sector in New Zealand, you can be pretty confident that taxation neutrality also means you'll get fair treatment if you start making money.

The reform of resources law needs to be seen against the background of overall policy changes. If you have any doubts about the effectiveness or direction of the new resources regime, bear in mind that it is directed by the same principles of neutral taxation and sectoral deregulation that have guided other Government policies.

In removing price and profit controls from petroleum refining and marketing, the Government has made it clear that it sees no reason to treat the downstream sector any differently from other manufacturing and trading activities where realistic competition exists. Resource management law reform is intended to have the same effect at the upstream end of the industry.