

Geographic and economic setting

New Zealand comprises two main islands and several smaller ones, with a land area approximately equal to Great Britain or Japan.³ Like Japan, some 40% of New Zealand's area is mountainous. The population of New Zealand was 3.8 million in 2000; of which 86% live in urban areas. As in other OECD countries, the "baby boom" has left a population bulge which will reach pension age during the two decades after the year 2000.

The New Zealand economy is very dependent on exports and imports. Many of our exports are very dependent on energy inputs, including agricultural products, forest products, fish, and tourism. Also New Zealand exports methanol and aluminium which are in effect nearly pure energy. Twenty years ago we exported most of our products to the U.K. Now Asia is our largest market. Many of our largest energy businesses, as well as almost all our banks and financial institutions, are now overseas-owned. As profits flow overseas, New Zealand's burden of debt increases. All these factors make New Zealand vulnerable to world economic cycles.

New Zealand was relatively wealthy following the second world war, but was hit hard by the OPEC oil crises of the 1970s. Between 1975 and 1985, New Zealand's public debt increased sevenfold, inflation mounted, growth slowed and overseas debt grew. This helped stimulate the free-market policies that were introduced by the Labour Government after 1984. Government removed subsidies and controls, and restructured its trading departments into corporations. This was supposed to allow the forces of enterprise, self-interest and competition to generate efficiency and economic growth.

New Zealand's economic performance became worse after the free-market policies began in 1985. It recovered briefly but the stock market crash in 1987 hit the economy hard. In 1992 New Zealand suffered its most prolonged recession since the Second World War. The rate of economic growth then increased and unemployment fell, and New Zealand began to run fiscal surpluses. However in 1997 New Zealand's Asian markets were hit again by their fiscal crisis. This, together with our balance of payments deficit, put our international credit rating at risk. The table next page shows New Zealand's main economic indicators during the last decade.

The country's net overseas debt continues to grow steadily "The corporate sector overseas debt has been driving the increase in total overseas debt since 1993".⁴

New Zealand statistics give little information on the increase of foreign ownership in New Zealand's energy sector. Figures are given for 1999 and 2000; earlier figures are not available and the 2001 figure is confidential. Our discussion under Indicator 5 is based on information on New Zealand's "top 200 companies", and captures most but not all the flow of energy profits overseas.

New Zealand's ranking on the UNDP Human Development Index (HDI) was 19th in 2001, compared to 9th place in 1994. No values for the HDI indicators on income inequality were recorded for New Zealand in 2001.⁵ However the World Bank notes that of 49 countries with data on inequality over a long period, only China and New Zealand saw substantial increases in inequality.⁶ A report to New Zealand's Treasury concludes that New Zealand now has one of the highest levels of income inequality in the OECD. It links this trend directly to the economic reforms of the late 1980s and the changes in employment legislation and social welfare cuts of the 1990s, rather than natural business

³ Information from NZ Yearbook 2000 and Statistics NZ website, www.stats.govt.nz

⁴ StatisticsNZ "Hot of the Press, NZs Total Overseas Debt as at 31 March 2000 Highlights".

⁵ www.undp.org/hdr2001/indicator/cty_f_NZL.html

⁶ www.worldbank.org/html/dec/annual/docs/growth1.htm

cycles.⁷ A brief resurgence of economic growth in the mid 1990s did not diminish inequality.

Most New Zealanders did not support the revolutionary policies of restructuring and privatisation⁸. More recent independent analyses confirmed their judgement⁹.

Principal aggregates: 1990-99⁽¹⁾					
	Gross domestic product (GDP)	Gross national income (GNI)	National income (NI)	National disposable income (NDI)	GDP at 1995/96 prices
Year ended March					
1990	71,441	68,143	58,359	58,647	79,442
1991	73,113	70,379	60,015	60,181	79,443
1992	72,918	68,142	57,181	57,343	78,416
1993	75,274	71,410	60,088	60,199	79,320
1994	81,502	76,980	65,453	65,743	84,447
1995	87,321	81,366	69,433	69,653	88,963
1996	92,679	86,680	74,273	74,413	92,679
1997	96,911	89,647	76,782	77,539	95,502
1998	99,631	93,231	79,748	80,226	97,256
1999	101,169	96,192	82,063	82,421	97,369
2000	105,641	99,545	85,283	85,283	102,251
2001	112,316	105,046	89,841	89,841	104,982
(1) Includes stock valuation adjustment. GNI = GDP plus net primary incomes from the rest of the world.					
NI = GNI less consumption of fixed capital. NDI = NI plus net current transfers from the rest of the world.					

[Source: *Statistics NZ*]

The drive to privatise essential services slowed, but did not stop, after the change in government in 1999. The effects of privatisation are still being discussed. One recent example is a series of papers by individual Treasury officials. One of these expressed disappointment at lack of ongoing productive and dynamic efficiency gains in the business sector, and poor growth rate considered likely to continue; the others criticised various aspects of the reforms. No Treasury supporters of the reforms contributed to the series.¹⁰

⁷ www.treasury.govt.nz/workingpapers/2000/00-13.asp

⁸ Royal Commission on Social Policy, 1988; can't find summary on any website

⁹ Kelsey, Jane, "The New Zealand Experiment", Auckland University Press, 1995, 1997

¹⁰ summarised in Easton "Of roast pork", Listener March 19 2002 p. 36; originals available at <http://www.treasury.govt.nz/workingpapers/2001/>

► Energy Sector

New Zealand's main indigenous energy resources are hydroelectricity, natural gas, condensate, a small amount of oil, and coal. In net energy terms, it is self-sufficient in all energy forms except oil.¹¹

Hydroelectricity supplied 87 PJ in 2000; natural gas supplied 235 PJ. About 100 PJ/yr of gas was converted to chemicals, mainly methanol for export. We imported about 240 PJ of oil, which supplied 42% of New Zealand's fossil fuels in the year. More than half of coal production is now exported. The condensate that comes from the gas fields earns more money by exporting it than by using it as a feedstock for New Zealand's refinery. Any increase in use of coal will now be under a cloud because of its greenhouse gas impacts.

Electricity is used extensively for home heating and water heating, as well as lighting, motors, and other uses which require electricity. Natural gas is reticulated in the North Island. About 45% of gas today is exported as methanol and another 40% used in thermal power generation.¹²

Before 1984, electricity was generated and transmitted by a Government department. Central Government was also heavily involved in coal and gas production. A levy of 25%, or sometimes more, on the bulk electricity tariff provided the money to expand the electricity system. The Ministry of Energy published annual energy plans from 1981 to 1985, giving information on resources of fossil fuels and sustainable energy resources, and government's plans for their development.

The public sector was drastically restructured from 1984 onwards.¹³ All government trading departments were converted to commercially-driven corporations. The Ministry of Energy was abolished in 1989. There remains a Minister of Energy, who is advised by officials in the Ministry of Economic Development.

In 1992 the local power distributors were restructured into companies. Government expected these to end up in private ownership, but the majority of communities decided to keep them in public ownership. Retail electricity prices rose because the companies valued their networks in a different way, which gave higher values. Prices from private companies rose still more, because mergers and takeovers were giving market values even higher than the new valuations.

Legislation in 1998 required local power companies to sell off either their retail and generation businesses, or their local networks. Network values rose yet again. The corresponding price rises are only beginning now, because most of the new companies promised price freezes for two to three years.

An amendment in 2000 allowed network owners to own renewable generating plants. This was too late to prevent the "fire sales" of all their small hydro power stations and wind farms (see discussion under indicator 4). This amendment also attempted to control the very high prices faced by small electricity users, but most companies found ways around that provision.

A competitive wholesale electricity market was developed by EMCO (now M-co), a company originally owned by the power companies, later sold to a South African company. The market was launched in 1996. In 1998, market participants began to

¹¹ The Dynamics of Energy Efficiency Trends in NZ, EECA Monitoring and Analysis Unit, 2000, p. i

¹² Energy Data File July 2001, summary available on MED website www.med.govt.nz

¹³ A full summary of electricity restructuring is at www.med.govt.nz/ers/electric/chronology/index.html

design ways to buy and sell security of transmission services. In 2000 Government carried out a major review of the electricity system. It concluded that self-regulation by the industry players would be more effective than relying on a regulator.

In the winter of 2001, a shortage of hydro energy led to skyrocketing spot prices. This led to a Government review of the operation of the wholesale electricity market.¹⁴ The review concluded that competition between the electricity generator-retailers was not working well, but that new governance arrangements should fix the problem. The cost of implementing the proposed self-regulation system is now estimated to be \$42m NZ per year.¹⁵

Deregulation has been much more complete in New Zealand than in other countries. There is no regulator at all for electricity or other essential industries. The Commission so far has been surprisingly tolerant of market power. It allowed Shell to buy out its largest competitor, Fletcher Energy - this gives Shell an iron grip on New Zealand's gas resource during the coming critical years when the successor to the Maui gas field is being planned (see discussion under indicator 5). So-called "light regulation" of the gas industry has been unsuccessful in preventing the main pipeline owner, Natural Gas Corporation, from exploiting its dominant position.¹⁶

"Governance" of the electricity industry is being set up with Government's blessing (and funding) by a committee of industry players. The aim is to make permanent the present experimental self-regulation system. Consumer representation on this committee has been ineffectual to date - the present regime clearly favours business interests at the expense of consumers and the environment. The governance arrangements were stalled "mainly because of differences between the players and stakeholders taking part"¹⁷.

In the four years since our last report to HELIO, public unease about electricity supply has increased markedly. The system set up to allow customers to switch power companies has worked poorly. The rate of switching peaked at over 70,000 in the month of June 2000, but fell to 13,000 in January 2002.¹⁸ Many customers are being switched to other retailers without their approval.¹⁹

An independent report confirms that the wholesale market is readily manipulated for profit²⁰. The failure of so-called "competition" to benefit small consumers, low-income consumers and rural consumers was thoroughly explained by the American Public Power Association; it describes the pressures on the New Zealand industry accurately.²¹

On the positive side, the Energy Efficiency and Conservation Authority (EECA) was established in 1992 as an independent government agency, to implement practical measures for achieving greater energy efficiency in New Zealand. Its brief was soon extended to the promotion of new renewable energy resources. It established a voluntary energy-efficiency programme for companies, now involving some 700 businesses. For residential energy efficiency it distributed \$9 million over five years to supply low-cost energy efficiency improvements in some 48,000 homes. Many of these

¹⁴ www.electricityinquiry.govt.nz

¹⁵ "Power regime estimated to cost \$42m", Dominion 2 April, 2002

¹⁶ NZ Herald 6 April 2002.

¹⁷ "Electricity board a year behind schedule", Dominion 20 March 2002.

¹⁸ "Electricity Market regains stability", Dominion 27 February, 2002

¹⁹ "Customers switched without their approval, says Genesis", Dominion 29 April, 2002

²⁰ www.med.govt.nz/ers/electric/hedgemarkets/index.html

²¹ "Price Discrimination, Electronic Redlining and Price Fixing in Deregulated Electric Power, attached to CAFCA submission to the winter review: www.electricityinquiry.govt.nz/submissions/index.html; look for submission #245.

programmes were operated by local power companies or the trusts that owned the companies, and separate local trusts supporting energy efficiency have also been formed.

In 2000 EECA was given a basis in statute, and its funding increased to \$46 million over a 5-year period. It published a National Energy Efficiency and Conservation Strategy in 2001, after extensive consultation with the public. It has expanded its criteria for residential energy initiatives beyond purely saving kilowatt-hours, to include health and employment benefits. It has worked to improve the energy efficiency provisions in the building code, though these are still not stringent. It has developed minimum energy performance standards for major household appliances, to be introduced this year.

Locally owned power companies keenly supported new renewable electricity generation. Between 1996 and 1999, they installed enough wind power, geothermal, and landfill gas generation to meet 2/3 of the electricity demand growth in that time (see indicator 4). Further expansion was stifled by the installation of almost 1000 MW of large-scale gas-fired generation. But local network companies are again considering renewable energy - some have recently joined the New Zealand Photovoltaic Association.

Energy research and development now receives public-good funding of approximately 6 million dollars/year²². In 2000, this funding was allocated in approximately equal shares to fossil fuels, renewable energy and energy efficiency, geothermal energy, and "other" - in earlier years research on petroleum and coal resources received by far the greatest share of funding. The pendulum continues to swing towards funding of sustainable energy research.

The future shape of New Zealand's primary energy supply is now very uncertain. The giant Maui gas field, commissioned in 1979, provided up to half New Zealand's primary energy in the 1980s. Late in 2001 Shell International, the company that owns the field, announced that reserves were declining faster than expected. They expect the field to shut down in 2007, two years earlier than had been planned. Unless petroleum exploration suddenly becomes more successful in finding gas than it was in the last 30 years, New Zealand will face some hard choices. New power stations may have to be run on coal or even liquefied natural gas (LNG - strongly advocated by Shell).

Industry spokespersons insist that a new power station is needed by 2005. Such decisions are being made on purely commercial grounds, and energy officials support that approach. But environmental groups have appealed against the resource consents granted for two of the three proposed combined cycle gas turbines stations. Bankers are unlikely to finance a new power station unless the company has firm contracts for both fuel supply and sale of electricity. In practice this means the company must sell to its own customers. So much for competition! (See indicator 3). A coal-fired power station would be a cheaper option by commercial standards, but would make nonsense of any commitment to the Kyoto protocol.

Meanwhile advocates of sustainability are proceeding down a separate track. Public support for this is strong and increasing - many sustainable options are now cheaper than many on the mainline track; also they employ New Zealanders and keep profits in the country. Sustainable options are small-scale and cannot capture the monopoly profits that are now rife in both gas and electricity. But they have not been a commercial success. The cartels created through industry self-regulation can quickly and legally deal to any initiatives in energy efficiency or renewable energy as soon as they present a real commercial threat. Complaints about predatory pricing, gaming on the spot market to hike spot prices, and use of network bottlenecks to shut out competition, have fallen on deaf ears. Exhaustive lobbying has failed to achieve government support for a market that treats mainline energy businesses and sustainable ones on an equal footing.

²² NZ Yearbook 2000

Unless industry self-regulation is replaced by effective regulation for the public interest, there would seem to be little future for more than token initiatives in sustainable energy in New Zealand.