



Embargoed until 10:45am – 5 December 2006

## New Zealand Energy Statistics

### September 2006 quarter

#### Highlights

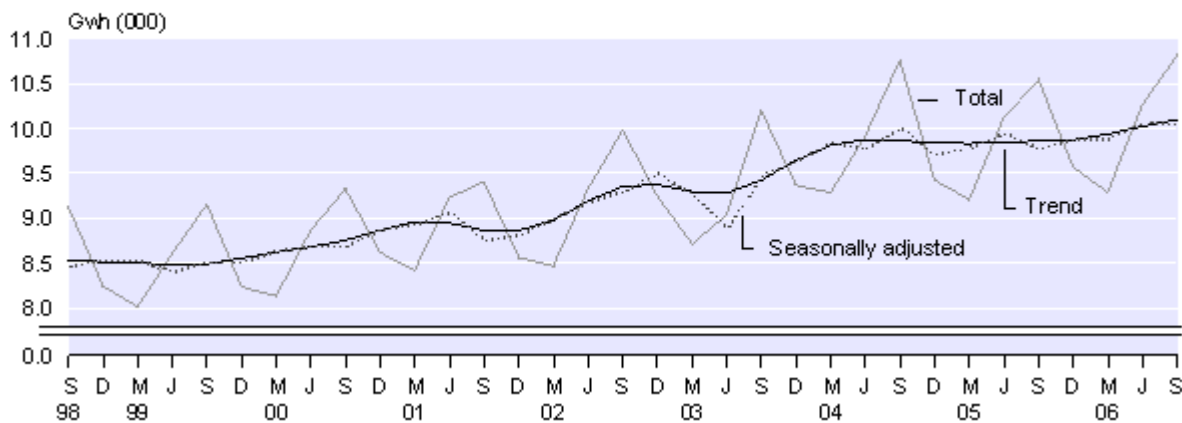
In the September 2006 quarter:

- Highest level of electricity generation for any quarter.
- Renewable resources generated 66 percent of total electricity.

In the September 2006 year:

- Hydro and wind generation supplied 57 percent of total electricity, the lowest for a September year.
- Gas production at lowest level since 1985.

Electricity Generation  
Quarterly



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5 December 2006  
Cat 73.900 Set 06/07 – 082

There is a companion Media Release published – [New Zealand Energy Statistics: September 2006 quarter](#).

# Commentary

## Electricity

### Quarter

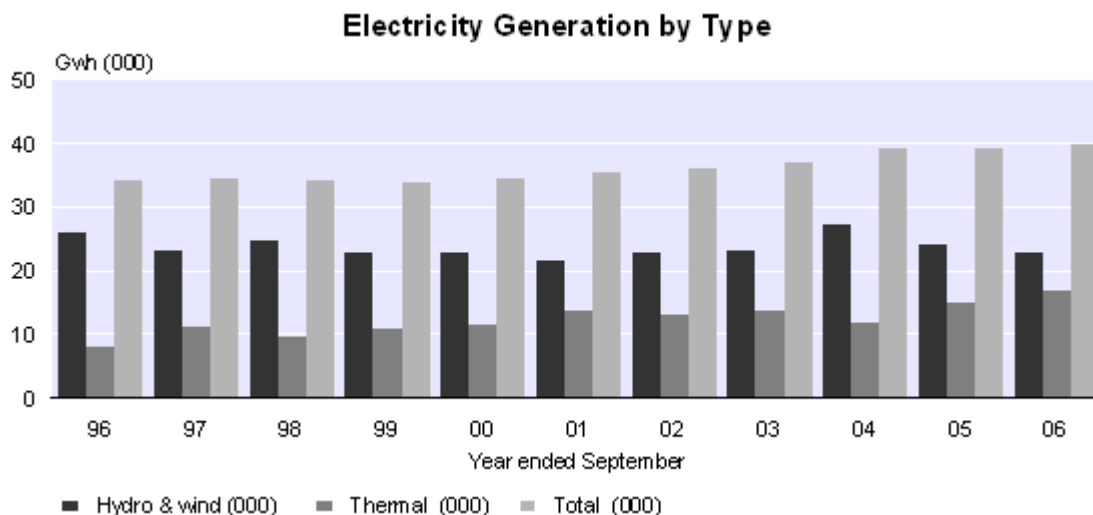
Total electricity generation in the September 2006 quarter was a record 10,809 gigawatt hours, 2.6 percent higher than in the September 2005 quarter. An 8.4 percent rise in hydro and wind generation this quarter was behind the increase. The September quarter has had the highest level of electricity generation in the annual cycle for the last 14 years.

Hydro and wind generation was 6,274 gigawatt hours and supplied 58 percent of the total electricity generated this quarter, compared with 55 percent in the previous September quarter. The contribution of different fuel types to the generation of electricity within each quarter can be volatile, being dependent on conditions such as the lake levels for hydro generation. The lake levels for this quarter were similar to those for the same quarter last year.

Thermal generation was 4,534 gigawatt hours in the September 2006 quarter, 4.6 percent lower than in September 2005 quarter. The biggest contributors to the decrease were coal and gas generation, down 13.0 percent and 4.8 percent, respectively. Offsetting this decrease was an increase for geothermal, up 14.5 percent.

In the September 2006 quarter 66 percent of electricity for sale was generated from renewable resources, which includes hydro, wind, geothermal and biomass. This compares with 62 percent in the September 2005 quarter and a record 77 percent in the September 2004 quarter.

After adjusting for seasonal variations, the volume of electricity generated in the September 2006 quarter fell 0.3 percent compared with the June 2006 quarter. This follows an increase of 2.0 percent in the June 2006 quarter.



## Annual

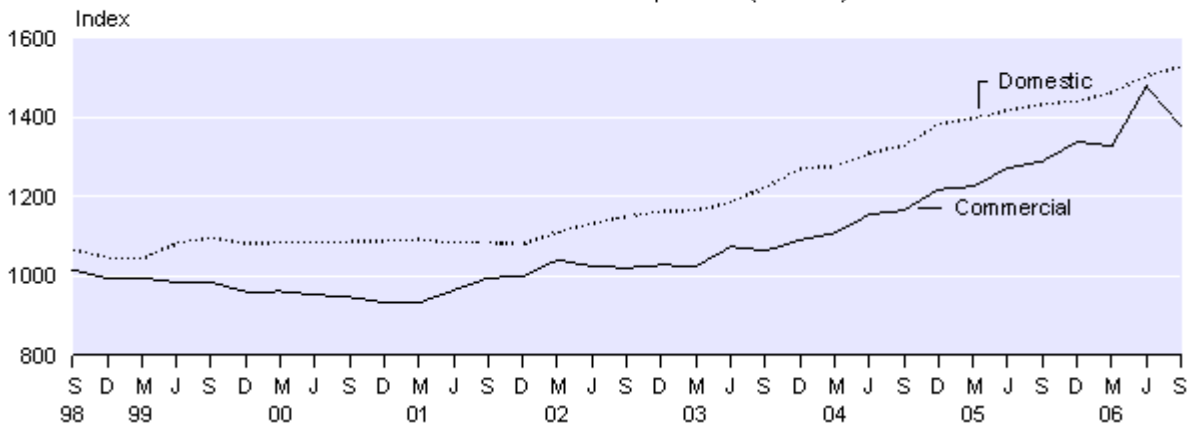
In the September 2006 year, total electricity generation was 39,920 gigawatt hours, 1.6 percent higher than in the September 2005 year. This is the highest level of electricity generation for any 12-month period since records began. Thermal generation increased by 1,953 gigawatt hours (12.9 percent), while hydro and wind generation decreased by 1,312 gigawatt hours (5.4 percent). In the September 2006 year, hydro and wind generation provided 57 percent of the total electricity generation, the lowest proportion ever recorded for a September year. The highest proportion ever recorded for a September year was 87 percent in 1980.

## Prices

Electricity prices for household consumers this quarter were up 1.5 percent compared with the June 2006 quarter, and up 6.6 percent compared with the previous September quarter. Prices for commercial electricity consumers fell 6.8 percent from the June 2006 quarter, and rose 6.8 percent compared with the September 2005 quarter. The large quarterly decrease (for commercial consumers) resulted from the largest ever increase in the June 2006 quarter together with lower prices for wholesale electricity. The *Producers Price Index: June 2006 quarter* cited reasons for the anomaly in the June 2006 quarter were market competition, adjustments to profit margins and high demand for electricity.

### Electricity Price Index

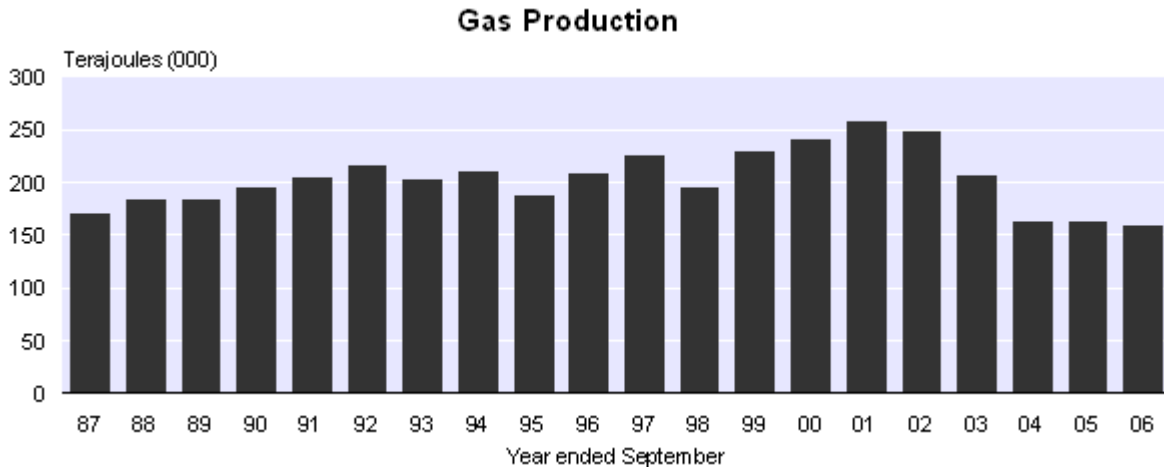
Base: December 1996 quarter (=1000)



## Gas

Gas production in the September 2006 quarter was 41,738 terajoules, a decrease of 6.7 percent compared with the previous September quarter.

For the September 2006 year gas production was 160,452 terajoules, 1.7 percent lower than in the September 2005 year. Gas production for a September year has continued to decrease since 2002 and is at its lowest level since 1985, when it was 130,361 terajoules.

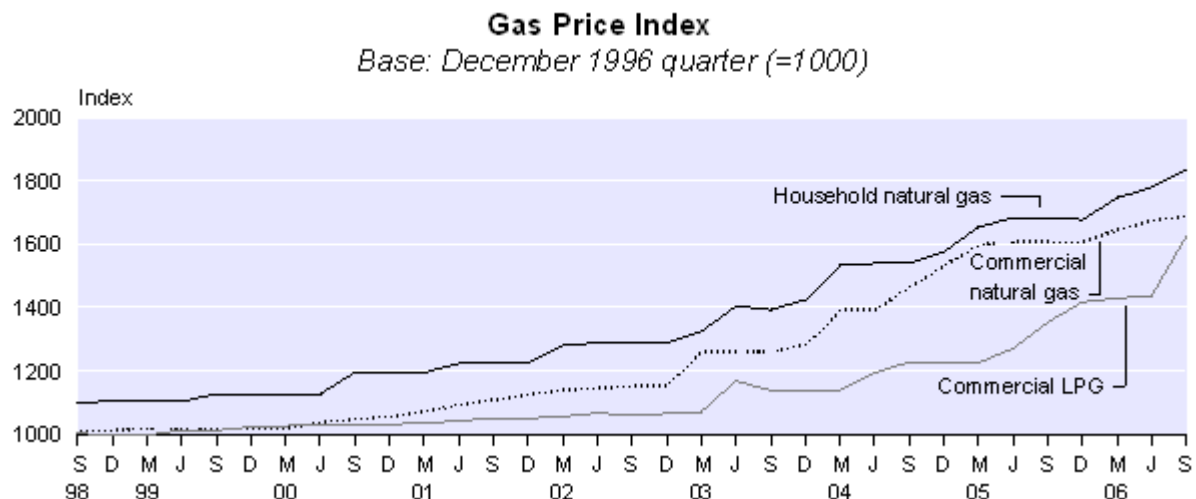


## Prices

Prices for commercial liquid petroleum gas (LPG) and natural gas, for both commercial and household consumers, rose this quarter and are at record levels for the third consecutive quarter.

Commercial LPG prices rose 13.0 percent this quarter compared with the June 2006 quarter, and were 20.1 percent higher than in the September 2005 quarter. These increases were the highest ever recorded for commercial LPG. The *Producers Price Index: September 2006 quarter* cited reasons for the increase were that more LPG was imported at international prices, and higher transport costs.

The price of natural gas increased 0.8 percent for commercial and 3.1 percent for household consumers compared with the June 2006 quarter. Compared with the September 2005 quarter, prices increased 5.0 percent for commercial and 9.0 percent for household consumers.



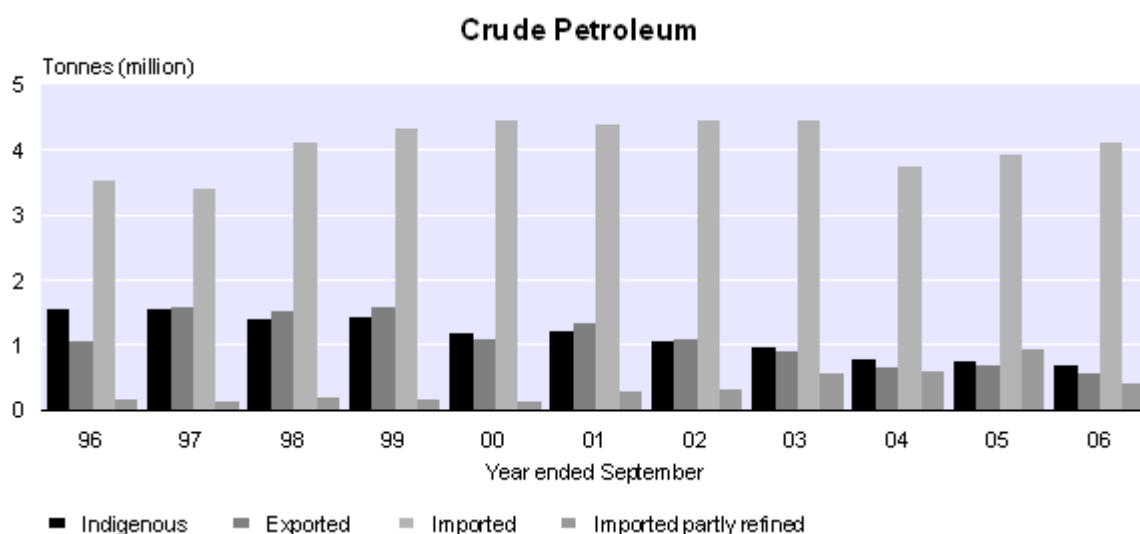
## Petroleum

### Crude petroleum production

The volume of domestic crude petroleum produced in the year ended September 2006 was 718,827 tonnes, a decrease of 7.5 percent compared with the year ended September 2005.

In the September 2006 year, 80 percent of the crude petroleum production was exported, the remainder being available for use as feedstock in the production of refined petroleum products.

The provisional estimate for imports of crude petroleum in the September 2006 year was 4.1 million tonnes, 5.4 percent higher than in the September 2005 year. In the same period, provisional figures for imports of partly-refined petroleum for further processing decreased by 54.6 percent to 436,111 tonnes.



### Refined petroleum production

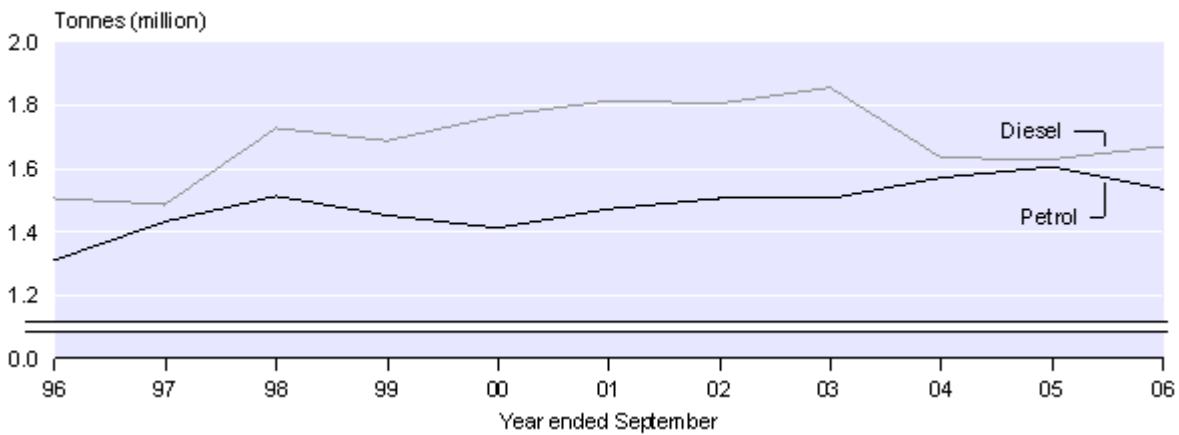
In the September 2006 quarter, a 0.8 percent increase was recorded in the production of refined petrol, when compared with the September 2005 quarter. Increased production of regular petrol was the sole contributor to the increase. Production of premium petrol decreased.

Production of refined diesel also decreased, down 7.1 percent this quarter compared with the previous September quarter.

The total volume of refined petrol produced in New Zealand in the year ended September 2006 was 1.53 million tonnes, 4.4 percent less than in the year ended September 2005. Decreases were recorded in the volume of both premium and regular petrol produced this year.

Production of refined diesel was 1.70 million tonnes in the year ended September 2006, 2.4 percent higher than in the September 2005 year.

## Refined Petroleum Product Production



## Petroleum deliveries

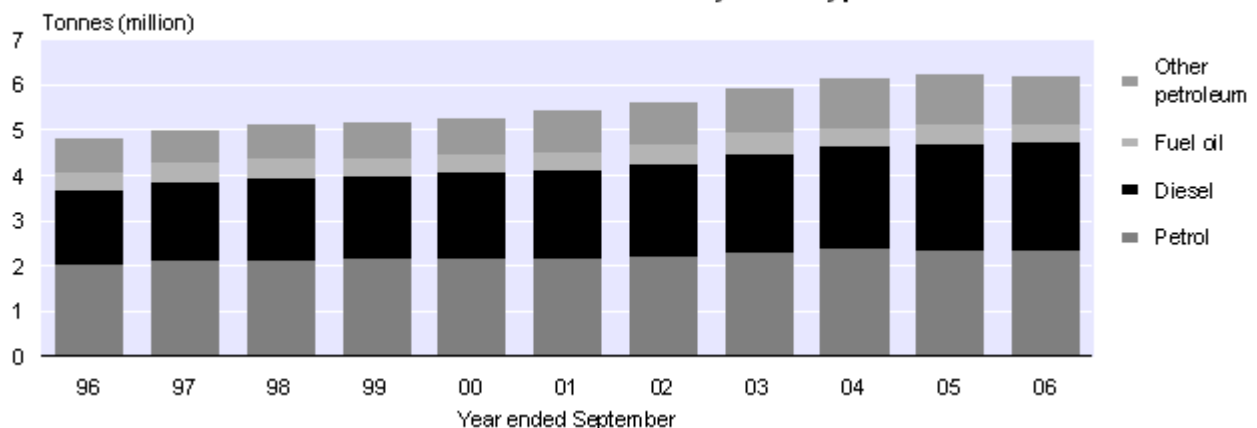
Total deliveries of petrol were 564,507 tonnes in the September 2006 quarter, 0.3 percent higher than in the September 2005 quarter.

Deliveries of diesel were 565,446 tonnes, 0.4 percent lower than in the previous September quarter. This is the first September quarter to have recorded a decrease in deliveries of diesel since September 1996.

The total volume of petrol delivered in the September 2006 year was 2.37 million tonnes, 0.2 percent lower than in the previous September year. Deliveries of diesel were 2.36 million tonnes, 1.5 percent higher over the same period.

In the September 2006 year, the total volume of petroleum products delivered, including fuel oils, aviation fuels and kerosene, was 6.21 million tonnes, down 0.4 percent compared with the September 2005 year. This is the first decrease for a September year since 1996.

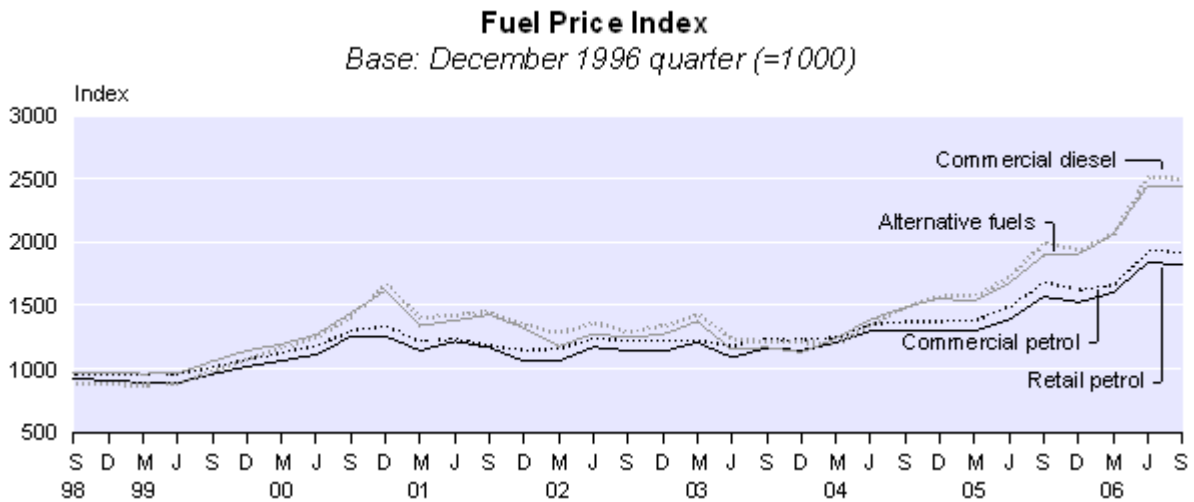
## Petroleum Deliveries by Fuel Type



## Prices

For household consumers, petrol prices fell 0.8 percent and alternative motor fuels remained unchanged in the September 2006 quarter compared with the June 2006 quarter. When comparing the latest quarter with the September quarter last year, petrol prices were up 16.0 percent and alternative motor fuel prices were up 28.9 percent.

In the September 2006 quarter, commercial consumers experienced price decreases for both petrol (down 1.2 percent) and diesel (down 1.0 percent), compared with the previous quarter. When comparing the September 2006 quarter with the September 2005 quarter, prices have increased 13.8 percent for petrol and 24.7 percent for diesel.



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# Technical notes

## Background

The New Zealand Energy Statistics comprise six surveys of the production of energy commodities:

- Electricity Generation
- Geothermal Steam Production by End Use
- Gas Production
- Crude Petroleum Production
- Petrol Production
- Petroleum Deliveries by Fuel Type

plus the indexes relating to energy commodities from the Consumers Price Index and Producers Price Index.

## Electricity generation

This survey is a monthly census of electricity generators, and measures the volume in gigawatt hours (GWh) of electricity generated, by fuel source type, as represented by sales to external users. Small private cogeneration plants that supply electricity for on-site users with no sales to external users are not captured in the Electricity Generation Survey. The published series record the volumes of hydro and wind, thermal, and total electricity generation, as well as providing seasonally adjusted and trend series. Figures for hydro generation have included a small quantity of generation by wind. As part of an updated electricity series, reference has now been made to the inclusion of this generation type. See below for details of seasonally adjusted estimates.

## Geothermal steam production

Production of geothermal steam data are collected quarterly from enterprises engaged in extracting geothermal steam to supply to external users. The production of geothermal steam harnessed for purposes such as generating electricity for on-site users is not captured in the Geothermal Steam Production by End Use Survey.

## Gas production

The Gas Production Survey measures the monthly volume of gas extracted in New Zealand. The survey in its present form began in 1974, and additional oil/gas fields have been added to the survey when they start producing commercially. Data previously available from production censuses are not strictly comparable with data from the present monthly survey. Prior to 1990, data for gas production included gas manufactured at gas works, but this has been discontinued following the cessation of this form of production.

## Crude petroleum production

This survey records the volume of crude petroleum condensate and naphtha (excluding natural gas and liquid petroleum gas (LPG)) extracted in New Zealand.

## **Petroleum production by fuel type**

The Petroleum Production Survey measures the monthly volume of petroleum products refined in New Zealand from indigenous crude petroleum, imported crude, and imported semi-refined petroleum:

- Refined petrol
  - Premium (96 octane or greater)
  - Regular (91 octane)
- Diesel (auto gas oil)
- Other oil products (for example aviation fuel, kerosene, heavy and light fuel oils).

## **Petroleum deliveries by fuel type**

The Petroleum Deliveries by Fuel Type Survey collates the volumes of petroleum fuel products which are distributed to resellers and direct to industry by all the oil companies operating in New Zealand. The fuel products delivered include the outputs of the refinery plus imported fully-refined petroleum products.

## **Energy price indexes**

The energy price indexes measure changes in prices paid by commercial or household consumers.

### **Coverage and calculation**

The household price indexes are collected as part of the Consumers Price Index and represent prices that householders pay. Prices are surveyed in 15 urban areas. Monthly prices are collected for electricity, gas, and alternative motor fuels. Coal and firewood prices are collected in the middle part of the quarter. Petrol prices are collected weekly, having been collected twice monthly prior to April 2002.

The commercial price indexes are collected as part of the Commodity Price Survey (Producers Price Index). Prices are collected mainly by postal survey, with respondents supplying the price at the mid-point of the quarter. Electricity, LPG and natural gas prices are collected from local supply companies and include delivery costs. Bulk diesel and petrol prices, including delivery, are collected from oil companies for several locations around New Zealand. Coal prices are collected from mining companies and exclude delivery costs.

Indexes for commercial electricity and natural gas have been redeveloped as part of the redevelopment of the Producers Price Index. These indexes are now based on a 'typical-consumer' approach. Power companies are asked to supply a single price for each of three specified levels of consumption. The three levels represent small, medium and large consumers. The amount of electricity, time of consumption and line capacity are specified.

The indexes are Laspeyres base-weighted price index series. The weightings are determined by the relative importance of commodities and businesses within the industry. Information from various surveys, censuses and other sources has been used to determine the weightings.

## Other price indexes

Other energy price indexes and energy industry indexes are published as part of the Producers Price Index, the Farm Expenses Price Index and the Consumers Price Index. Unpublished energy price indexes at a lower level of aggregation are also available, at a small charge to cover dissemination.

## Seasonally adjusted estimates

Seasonal adjustment aims to eliminate the impact of regular seasonal events (such as winter) on time series. This makes the data for adjacent quarters more comparable. All seasonally adjusted figures are subject to revision each quarter. This enables the seasonal component to be better estimated and removed from the series. The largest revisions will occur in the quarters prior to the current quarter.

From September 1998, X-12-ARIMA has been used to produce the seasonally adjusted and trend estimates, rather than X-11-ARIMA. X-12-ARIMA is an updated version of X-11-ARIMA, developed at the US Bureau of the Census. For completeness and for comparative purposes, the back series has been revised using X-12-ARIMA also. This methodology change has resulted in some additional revisions to previously released figures, due to the slightly different treatment of outliers in the newer package. An extra adjustment has been made for the outliers in 1992 due to the power 'crisis'. These changes have been implemented to ensure that the high quality of the seasonal adjustment process is maintained.

## More information

Follow the links from the Technical notes of this release on the Statistics New Zealand website for more information on:

[Electricity](#)

[Gas](#)

[Geothermal](#)

[Petrol](#)

[Crude Petroleum](#)

[Petroleum Deliveries](#)

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## Timing

Timed statistical releases are delivered using postal and electronic services provided by third parties. Delivery of these releases may be delayed by circumstances outside the control of Statistics NZ. Statistics NZ accepts no responsibility for any such delays.

### Next release ...

*New Zealand Energy Statistics: December 2006 quarter* will be released on 9 March 2007.

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## Tables

The following tables can be downloaded from the Statistics New Zealand website in Excel 97 format. If you do not have access to Excel 97 or higher, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

### List of tables

1. Quarterly New Zealand energy statistics
2. Year ended September New Zealand energy statistics
3. Energy price indexes