New Zealand

energy quarterly

June Quarter 2014

Released 25 September 2014
Issue 26

Image: Ballance Agri-Nutrients

The *New Zealand Energy Quarterly* provides quarterly data and analysis on energy supply, demand, prices and associated greenhouse gas emissions. This publication is part of the suite of energy publications produced by the Modelling and Sector Trends Team of the Ministry of Business, Innovation and Employment. It may be downloaded or subscribed to at www.med.govt.nz/sectors-industries/energy/energy-modelling/publications/new-zealand-energy-quarterly.

Inside This Quarterly

This edition of the *New Zealand Energy Quarterly* includes data through to the June quarter of 2014.

Key Indicators

	Change since the previous quarter (Mar 2014)	Change since the previous June quarter (Jun 2013)	Change since the June quarter 5 years ago (Jun 2009)
Oil Production	−4.9%	−6.0%	−29.0%
Oil Demand	−5.1%	3.2%	1.2%
Coal Production	−6.5%	−15.5%	−19.8%
Gas Production	11.4%	5.0%	30.2%
Petrol Price	−0.3%	2.6%	31.2%
Electricity Generation	5.2%	−0.7%	−3.2%
Renewable Share of Electricity Generation	−0.9%	10.4%	8.5%

A publication of the Ministry of Business, Innovation and Employment
ISSN 1178–2714 (online)

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

Electricity

www.med.govt.nz/sectors-industries/energy/energy-modelling/data/electricity

Generation

The amount of electricity generated in the June 2014 quarter was 0.7% lower than the same quarter last year. New Zealand's share of electricity production from renewable resources rose to 78.5% from 68.1%, when comparing this quarter with the June quarter 2013. Renewable generation rose due to increased geothermal and hydro generation.

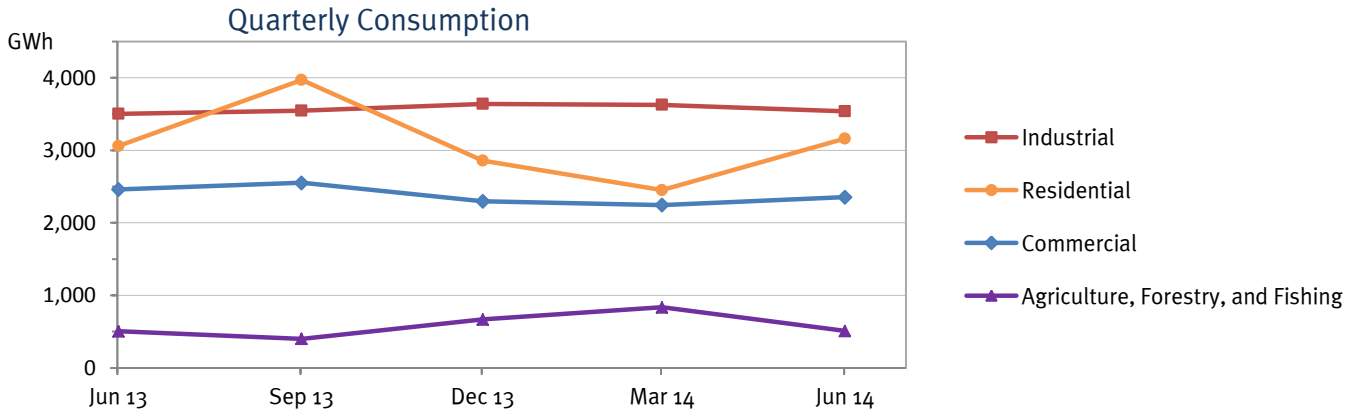
Geothermal generation increased by 17.9% in the June quarter 2014 when compared with the June quarter 2013. This was mainly due to Contact's new Te Mihi geothermal plant operating at full capacity. Quarterly hydro generation was up 14.7% from the last June quarter. Quarterly thermal generation continues to decline, down 33.0% from the same quarter last year.

Consumption

New quarterly consumption data from June 2013 onwards is presented in the graph below. Total consumption increased 0.4% in the June quarter 2014 when compared to the June quarter 2013. Over this period, residential consumption increased 3.3% while commercial consumption decreased 4.3%. This data is now available at the link above.

		Sep 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jun 14	Change Jun13-14
Total Generation (GWh)[1]		**11369** R	**10459** R	**9998**	**10529**	**11074**	**10266**	**9942**	**10459**	-0.7%
Renewable Generation	Hydro	6279 R	6299 R	5256	5085	6056 R	6418 R	5649 R	5830	14.7%
	Geothermal	1468	1451	1407	1482	1580 R	1584 R	1594 R	1747	17.9%
	Wind	459	597	436	457	587 R	520 R	502 R	487	6.7%
	Wood and Biogas	144	149	149	145	148	150	149	143	-1.5%
	Total	8349 R	8496 R	7248	7169	8371 R	8672 R	7895 R	8208	14.5%
Thermal Generation	Gas	2,188	1,403	2,168	2,414	2,176	1,376	1,690	1,718	-28.8%
	Coal	823	550	572	937	518	210	348	524	-44.1%
	Oil and Waste Heat	9	10	10	9	9	9	9	9	0.4%
	Total	3020	1963	2750	3360 R	2702	1595	2047	2251	-33.0%
Total Consumption (GWh)[2]					**9591**	**10535**	**9525**	**9219**	**9626**	0.4%
Agriculture, Forestry, and Fishing					505	400	668	835	509	0.8%
Industrial					3502	3547	3639	3627	3537	1.0%
Commercial					2461	2551	2297	2246	2354	-4.3%
Residential					3060	3970	2858	2451	3162	3.3%
Renewable %		**73.4%**	**81.2%**	**72.5%**	**68.1%**	**75.6%**	**84.5%**	**79.4%**	**78.5%**	
Greenhouse Gas Emissions	kt CO_2-e	1807 R	1258	1562	2010 R	1511	933	1187	1356	-32.5%
	kt CO_2-e/GWh	0.16	0.12	0.16	0.19	0.14	0.09	0.12	0.13	-32.1%

[1] Excludes generation used on-site for auxiliary services (e.g. lighting, coal grinders) and internal losses.
[2] Includes unallocated onsite consumption
R Data revised due to updated company returns



Oil

Crude oil, condensate and oil products

Crude production was 21 PJ this quarter, down 1 PJ from the March quarter and last year's June quarter. The vast majority of domestic crude production is exported (19 PJ this quarter).

Crude imports are processed at the Marsden Point refinery and were up 12 PJ to 63 PJ this quarter. There were maintenance shutdowns at the refinery during the previous two quarters.

Refinery output of petroleum products was down 4 PJ from last June quarter, to 56 PJ this quarter. Imports of products over the same period were up 7 PJ to 27 PJ.

Demand

Diesel demand continues to increase compared with the same quarter a year earlier. At 29 PJ this quarter, it is up 1 PJ on last year's June quarter. It has also been larger than petrol demand for almost three years. Petrol demand was steady at 26 PJ, the same as last quarter and last year's June quarter.

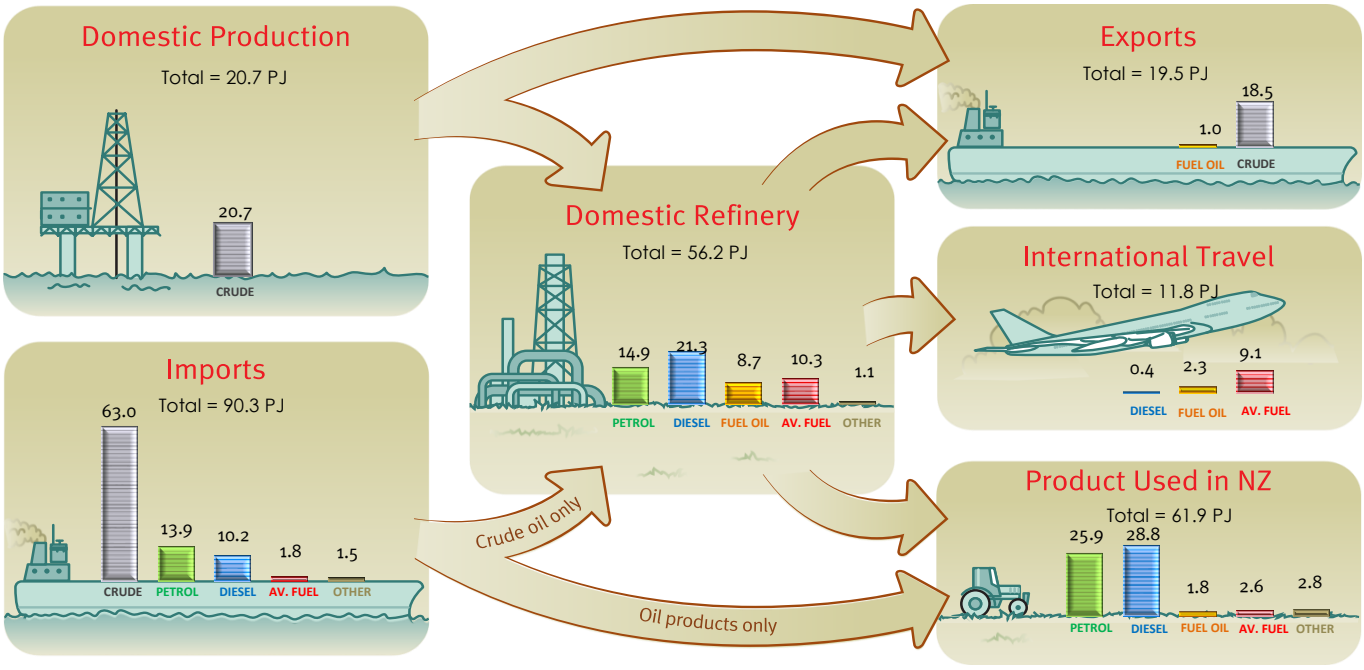
Quarterly Oil Production, Imports, Exports and Emissions

Units: Petajoules (PJ)		Sep 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jun 14
Domestic Crude Oil Supply	Production	23.5	18.7	19.6	22.0	17.9	15.5	21.7 R	20.7
	Imports	63.7	64.1	62.6	58.6	64.1	57.8	51.1	63.0
	Exports	21.7	19.0	15.5	20.8	16.7	13.8	20.0 R	18.5
Oil Product Supply	Refinery output	62.7 R	61.5 R	54.5 R	60.1 R	62.1 R	51.4 R	51.9 R	56.3
	Imports	16.1 R	18.2 R	26.1	20.3	14.6	31.9	29.4 R	27.3
	Exports	3.9	2.0	0.5	3.7	3.3	2.1	0.0	1.0
Oil Product Demand	Total Petrol	25.7	27.6	26.8	25.8	25.8	27.7	26.4	25.9
	Diesel	26.4	29.6	28.9	27.7	27.9	31.7	30.2	28.8
	Others[1]	6.9	8.5	11.9	6.5 R	6.8	6.3	8.6 R	7.2
Liquid Biofuel Demand	Total biofuel	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Liquid Fuel Emissions	(kt CO_2)	3936	4357	4272 R	4005 R	4045 R	4411 R	4242 R	4097

1 Includes fuel oil, aviation fuel, kerosene, bitumen, lubricants and other oil products.

R Data revised due to updated company returns

Oil Energy Flows*, June Quarter 2014



* Stock changes and statistical differences are not accounted for in this diagram.

Gas

Production

Gas production was up 6 PJ this quarter, and supply was up 5 PJ. Compared with the same quarter a year earlier, production was up 3 PJ and supply up 2 PJ. Pohokura and Maui provided the majority of this gas.

Reinjected gas at Pohokura rose to its highest recorded quarterly level in the June quarter, and total reinjected gas rose to 5 PJ.

Consumption

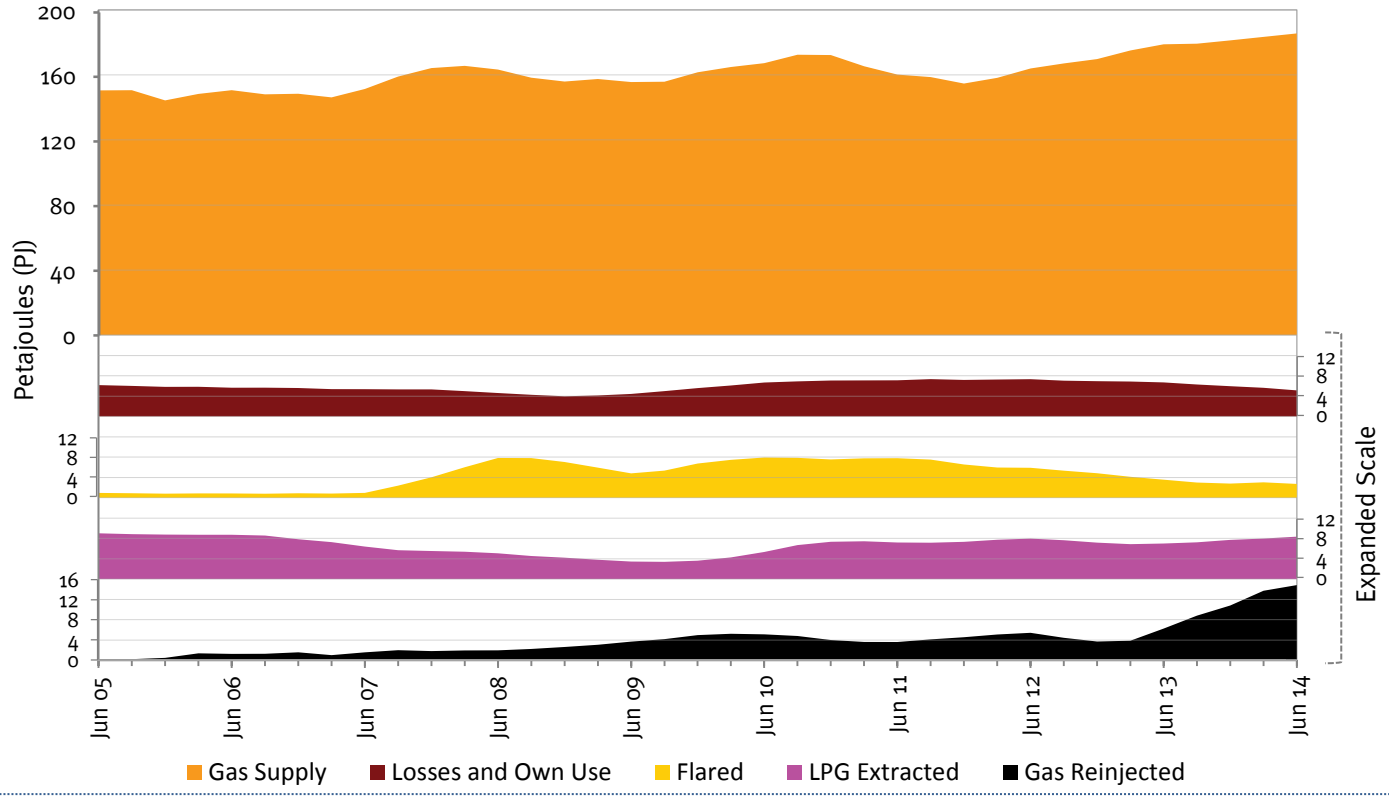
Non-energy use of gas (e.g. feedstock for the production of methanol and ammonia/urea) was up 1 PJ on the March quarter, to 15 PJ. Methanex's three production trains in Taranaki are all operational after the Waitara Valley plant restarted in October 2013.

Quarterly Gas Production and Emissions

Units: Petajoules (PJ)	Sep 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jun 14
Gas Production	53.6	44.5	47.9	56.4	55.8	48.5	53.1	59.2
Gas Reinjected	0.4	0.5	1.5	3.8	3.0	2.4	4.4	5.0
LPG Extracted	2.0	1.4	1.6	2.0	2.2	1.9	1.8	2.4
Flared	1.1	0.7	0.7	0.9	0.6	0.5	1.0	0.6
Losses and Own Use	1.8	1.5	1.6	1.8	1.4	1.2	1.3	1.2
Gas Supply	48.3	40.3	42.4	47.8	48.6	42.4	44.5	50.0
Estimated Gas Consumption Emissions (kt CO_2)	630	513	403 [R]	522 [R]	616 [R]	505	402 [R]	608

[R] Data revised due to updated company returns

Annual Gas Production (Four-Quarter Moving Total)



Coal

Production and Supply

Coal production was down 7% since the previous quarter and 16% since the same quarter last year. Production of bituminous and sub-bituminous coal was lower compared with the June 2013 quarter.

Exports remained the same as last quarter, but were down 14% from the same quarter last year. All coal exported was coking coal.

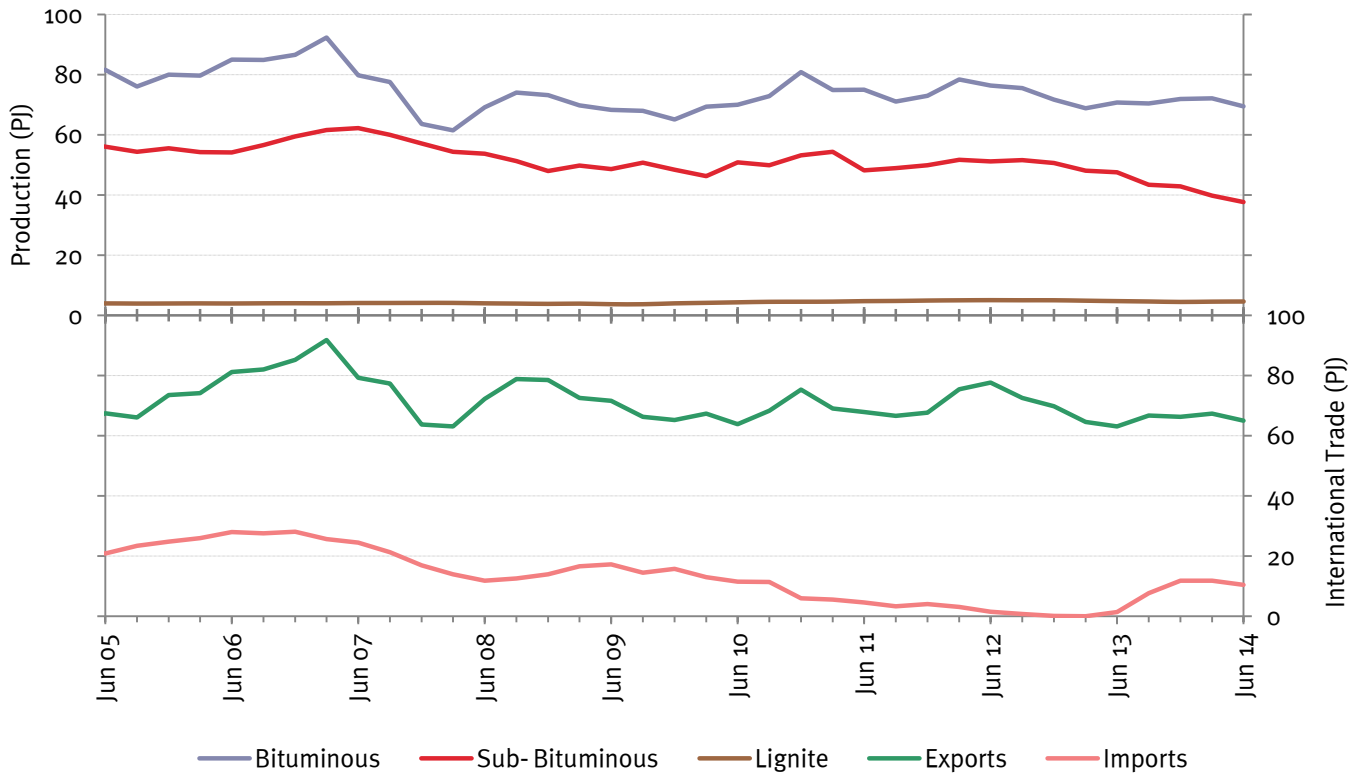
Coal use for electricity generation is historically highest in the June quarter. June quarter coal use for electricity generation followed this seasonal trend and was nearly double the March quarter, but still down by more than 50% on the same quarter last year. In the June 2013 quarter, hydro inflows were relatively low and generation from Huntly power station increased. Since then, a second coal unit at Huntly has been mothballed, and reliable renewable baseload has increased.

Quarterly Coal Production, Imports and Exports

Units: kilotonnes (kt)	Sep 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jun 14
Production	**1197**	**1164**	**1224** R	**1198** R	**1031** R	**1172** R	**1082**	**1012**
Bituminous	557	505	544	637	546 R	552	553	550
Sub-bituminous	583	560	593 R	496 R	435 R	531 R	436	393
Lignite	57	99	87	65	49	89	93	68
Imports	0	0	0	64	275 R	181 R	0	0
Exports	434	557	443	564	547	542	486	487

R Data revised due to updated company returns

Annual Coal Production by Rank, Exports and Imports (Four- Quarter Moving Total)



Residential Electricity Prices and Demand

http://www.med.govt.nz/sectors-industries/energy/energy-modelling/data/prices/electricity- prices

Residential electricity price monitoring

Last quarter we published revised electricity price statistics from the year ending 31 March 2002, through to the year ending 31 March 2014. These statistics showed the average electricity price paid for the year ended March 2014 was 27.59 cents per kilowatt hour (c/kWh) which was 2.3 percent higher than for the previous year ending March.

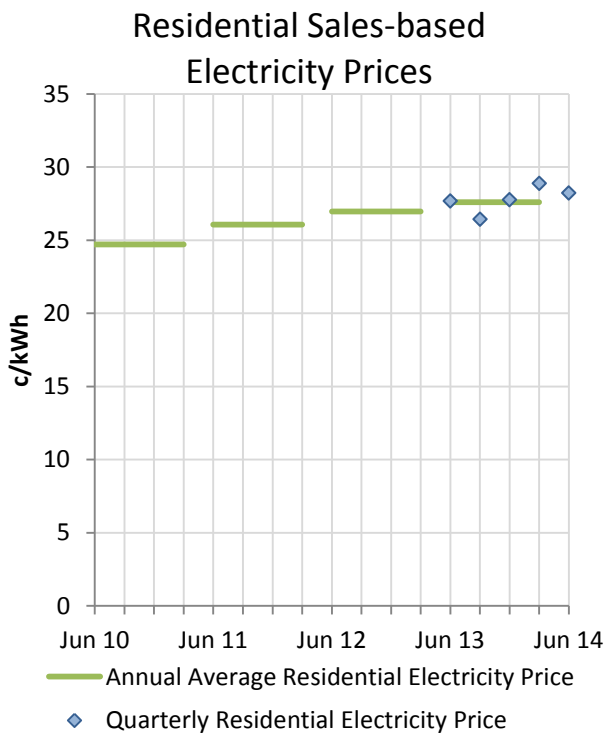
In addition to the annual sales-based electricity prices, from this quarter onwards we are also publishing a new series of quarterly sales-based prices. These provide a timely indication of the impact of recent electricity price movements on what households have actually paid for electricity. The new quarterly prices are calculated on the same basis as the annual figures. The amount of net revenue[1] from electricity sales is divided by the associated quarterly electricity consumption to get an average price paid in c/kWh. In addition to being impacted by changes in prices and rates of discounting, the average sales based electricity prices also varies with changes in demand between periods.

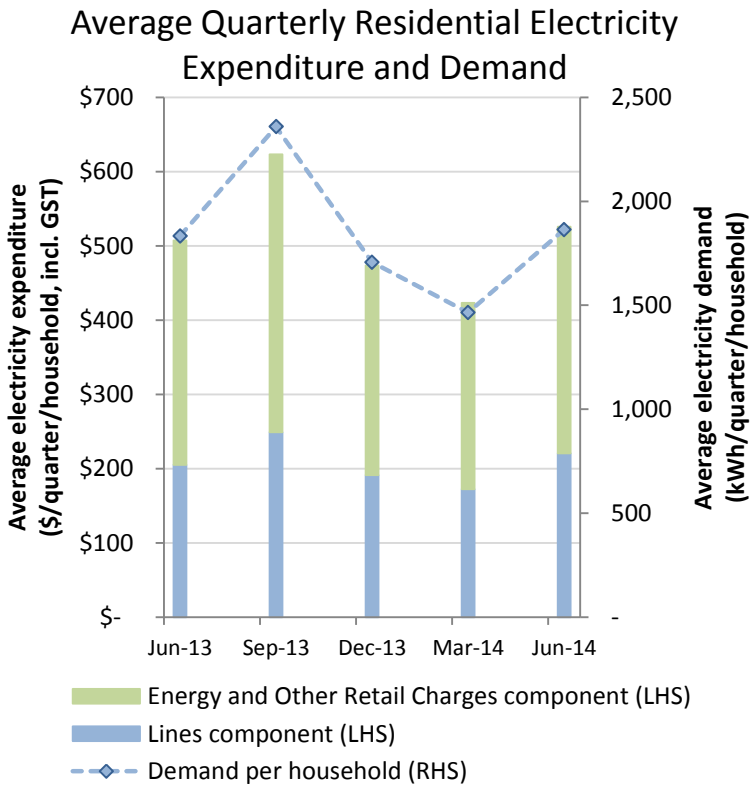
The quarterly average price paid varies throughout the year with household electricity consumption, as shown in the graph below (bottom left). This is largely because of fixed daily charges. When households use more units of electricity (e.g. in winter), the fixed cost is spread across a larger number of units. Because of this, the average price paid is highest in summer and lowest in winter. Variations in average household electricity expenditure and the average electricity demand are shown in the chart below (bottom right).

Due to these fluctuations, comparisons for the sales-based price indicators are made for the same quarter of the previous year.

Latest quarterly price movements

The new quarterly price data shows that the average price paid for electricity by households in the June quarter 2014 was 2.0% higher than in the June quarter 2013. This was driven by an average increase in lines charges of around 5.9% in April 2014, offset by a small reduction (around 0.7%) in energy and other costs (including retail margins).





[1] Net revenue is total revenue after taking into account multi-product discounts, prompt payment discounts, incentive credits, and other credits given to customers.

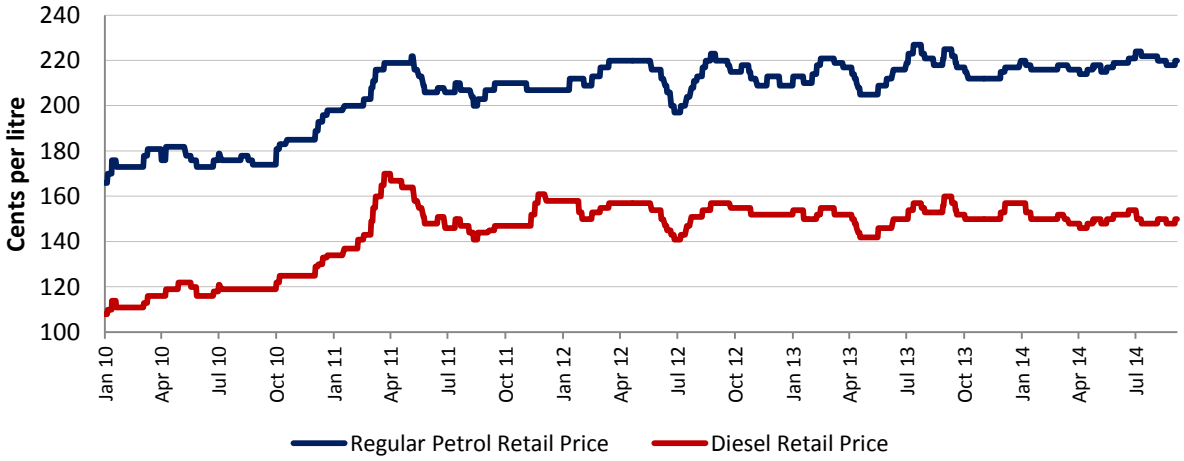
Petrol and Diesel Prices

www.med.govt.nz/sectors-industries/energy/energy-modelling/data/prices

Petrol and Diesel Prices

Prices for regular petrol and diesel since January 2010 are shown in the graph below. The prices are monitored daily in the main centres. A horizontal line indicates no price movement in the period. Since April 2011, prices have been relatively stable. Regular petrol prices have ranged between 200 and 227 cents per litre, while diesel retail prices have ranged between 140 and 160 cents per litre.

Petrol and Diesel Retail Prices



Petrol Price Breakdown

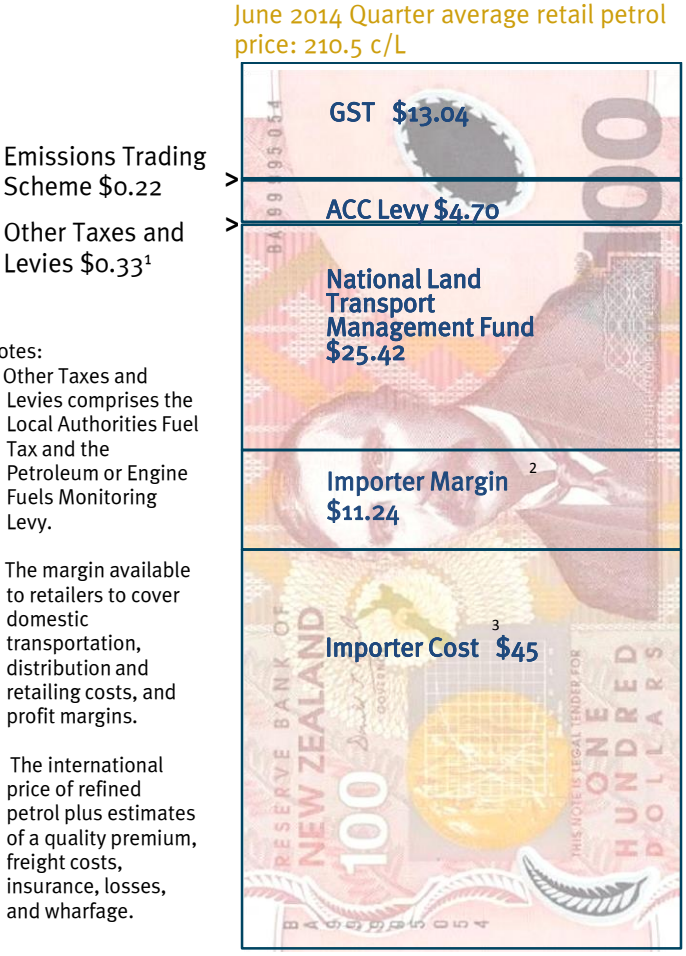
The figure on the right shows the components of $100 spent on regular petrol. The energy element is relatively small compared to other costs.

The regular petrol price remained largely stable compared with the last two quarters. The average retail petrol price for the quarter was 210.5 cents per litre (c/l) in the June 2014 quarter. Importer costs decreased by 1% while importer margins rose by 2% over the quarter. July 1st 2014 saw the increase of the National Land Transport Management Fund by 3 c/l to 56.5 c/l.

The gross importer margin is the difference between the retail price (excluding taxes) and the landed cost of the fuel (including freight and wharfage). It is the margin available to retailers to cover distribution costs within New Zealand, as well as fuel retailing costs and their own retail margin.

The retail price used in this breakdown is a quarterly average from Statistics New Zealand and includes an estimate of fuel-docket discounting.

June 2014 Quarter average retail petrol price: 210.5 c/L



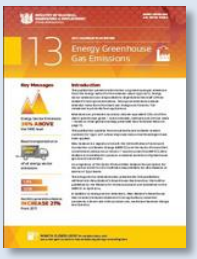
Notes:

1. Other Taxes and Levies comprises the Local Authorities Fuel Tax and the Petroleum or Engine Fuels Monitoring Levy.
2. The margin available to retailers to cover domestic transportation, distribution and retailing costs, and profit margins.
3. The international price of refined petrol plus estimates of a quality premium, freight costs, insurance, losses, and wharfage.

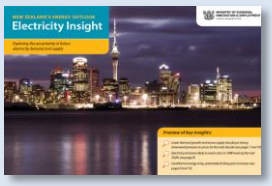
FURTHER READING

Modelling and Sector Trends Energy Publications

Energy in New Zealand provides comprehensive information on New Zealand's energy supply, demand, reserves and prices, mostly as national aggregates.



New Zealand Energy Greenhouse Gas Emissions provides detailed inventory information on carbon dioxide equivalent emissions from New Zealand's energy sector and industrial processes.



New Zealand's Energy Outlook: Electricity Insight explores the long- term future for electricity in New Zealand using scenario analysis.

The *New Zealand Energy Snapshot* provides a handy pocket-sized overview and insight into New Zealand's energy sector.

The *New Zealand Energy Quarterly* provides quarterly energy statistics and trend data on energy supply, demand, prices and associated greenhouse gas emissions.

Website

The *New Zealand Energy Quarterly* is available in PDF format through the Economic Development information (EDI) website: www.med.govt.nz/sectors-industries/energy/energy-modelling/publications/new-zealand-energy-quarterly.

More detailed information is available through the Energy Data section of the EDI website: www.med.govt.nz/sectors-industries/energy/energy-modelling/data. Updated tables and charts may also be downloaded in Excel format.

Conversion factors and definitions of terms are available online at: www.med.govt.nz/sectors-industries/energy/energy-modelling/publications/energy-data-file.

Data Sources

The *New Zealand Energy Quarterly* is compiled using a range of surveys and returns provided by oil, gas, coal and electricity companies, and other government agencies. In some cases, provisional figures are used, which are amended once updated data become available.

Next Release

The next edition of the *New Zealand Energy Quarterly* is scheduled for release December 2014.

Please forward any enquiries to:

Modelling and Sector Trends
Infrastructure and Resource Markets
Ministry of Business, Innovation and Employment
PO Box 1473, Wellington, New Zealand
Email: energyinfo@mbie.govt.nz

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

New Zealand Government