Energy consumption by fuel type and sector

This factsheet presents information about the indicator 'Total energy consumed, by fuel type and sector'. It describes changes in New Zealand's energy use over time.

Key facts

Oil was the predominant type of fuel consumed in New Zealand between 1990 and 2017. It was the major type of energy consumed in the domestic transport sector (99.9%) in 2017.

The domestic transport and the industrial sectors were the main consumers of energy in New Zealand between 1990 and 2017. Together, they contribute to almost three quarters of the total energy consumption in New Zealand.

New Zealand consumed 591 Petajoules (PJ) of energy in 2017, compared to 406 PJ in 1990.

Emissions produced by the energy sector can affect health

Emissions, such as greenhouse gases and particulate matter, produced by the consumption of energy contribute to climate change and affect air quality, leading to negative impacts on human health.

The burning of fossil fuels such as oil, gas and, coal produces harmful emissions, negatively affecting air quality and health. Furthermore, the burning of fossil fuel produces greenhouse gases, which are adding to climate change, which has an impact on public health (WHO 2013).

In 2017, the energy sector contributed almost 41% to New Zealand's greenhouse gas emissions, mainly through transport activities (Ministry for the Environment 2019).

Fuel types are providing energy for consumption. New Zealand uses a variety of fuel types:

- **Renewables** (ie, hydro-electricity, geothermal energy, biogas, wood, liquid biofuels, wind and solar power)
- **Non-renewables** (ie, fossil fuels like coal, oil, and gas)
- **Electricity** (Renewable and non-renewable fuel types are used to generate electricity, which then becomes a fuel type. In 2017, 82% of electricity was generated from renewables (Ministry for Business, Innovation & Employment 2018)).

Oil is the predominant type of fuel consumed in New Zealand

Table 1: Total energy consumption (PJ), by fuel type, 1990 and 2017

Fuel type	1990	2017	Mean change per year (%)
Oil	164.0	279.2	+2.0
Electricity	103.9	142.8	+1.2
Gas	67.8	78.0	+0.5
Renewables	41.0	66.6	+1.8
Coal	29.3	24.0	-0.7
Total	**406.0**	**590.5**	**+1.4**

Source: Ministry of Business, Innovation & Employment 2018

1 petajoule
Contains enough energy in regular petrol to drive...

30,000
cars for a year

Source: Ministry of Business, Innovation & Employment 2018

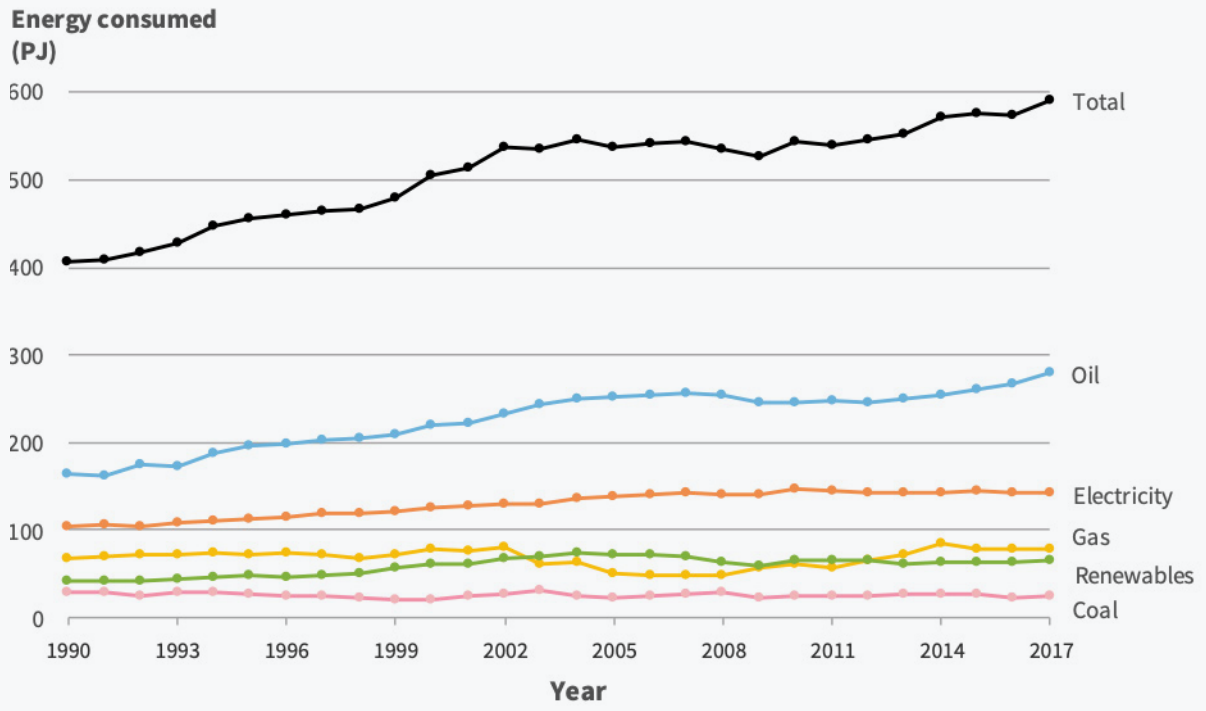
In 2017, New Zealand consumed almost 591 PJ of total energy (Table 1 and Figure 1). This is an increase of 1.4% per year between 1990 and 2017.

Energy consumption per one million people increased by almost three PJ between 1990 and 2017. In 1990, New Zealand consumed 119 PJ per one million people and in 2017 New Zealand consumed 122 PJ per one million people (Stats NZ 2019).

The consumption of oil as a fuel type increased the most (mean change of 2.0% per year) between 1990 and 2017, whereas the consumption of coal declined by an average of 0.7% per year.

Oil has remained the predominant type of fuel consumed in New Zealand since 1990 (Figure 1).

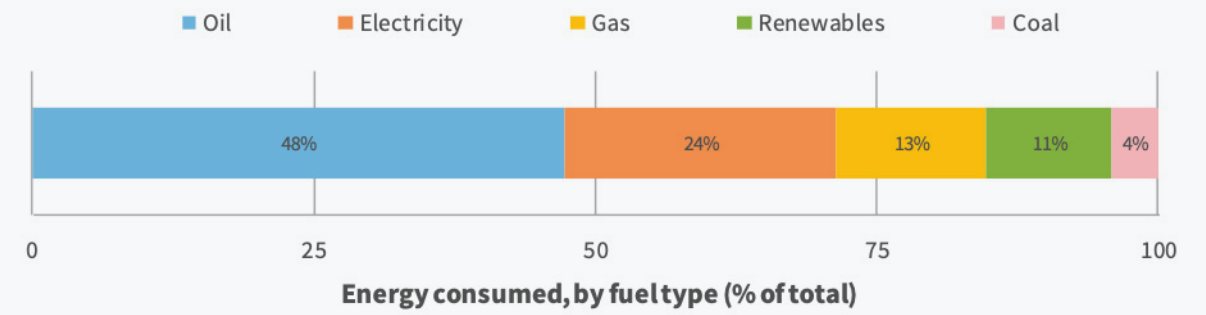
Figure 1: Total energy consumption (PJ), total and by fuel type, 1990–2017



Source: Source: Ministry of Business, Innovation & Employment 2018

In 2017 almost half of all energy consumed was from oil (47.3%) (Figure 2), increasing from 40.4% in 1990.

Figure 2: Total energy consumption (%), by fuel type, 2017



Source: Ministry of Business, Innovation & Employment 2018

Domestic transport sector was the biggest consumer of energy in 2017

Fuel types are providing energy, which is consumed across five sectors: the domestic transport, industrial, residential, commercial and public services and the agriculture, forestry, and fishing sector.

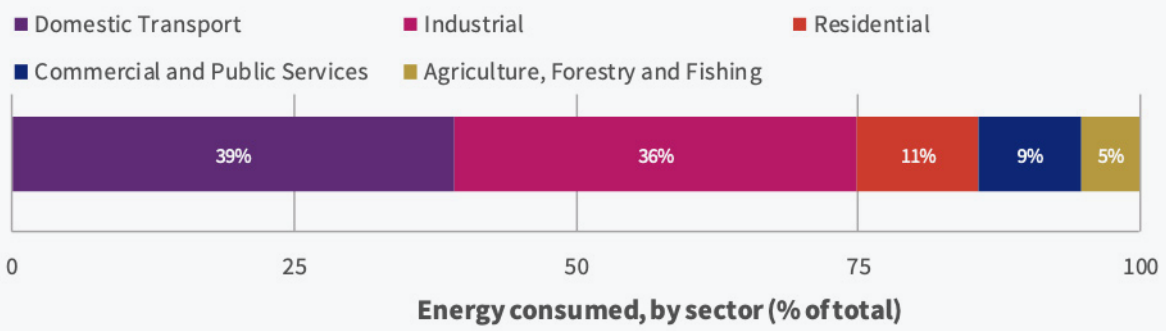
Table 2: Total energy consumption (PJ), by sector, 1990 and 2017

Sector	1990	2017	Mean change per year (%)
Domestic Transport	129.2	231.5	+2.2
Industrial	165.9	210.5	+0.9
Residential	55.3	63.9	+0.5
Commercial and Public Services	34.9	53.9	+1.6
Agriculture, Forestry and Fishing	20.8	30.7	+1.5
Total	**406.0**	**590.5**	**+1.4**

Source: Ministry of Business, Innovation & Employment 2018

The domestic transport (39.2%) and industrial (35.7%) sectors were the biggest consumers of energy in 2017 (Table 2 and Figure 3).

Figure 3: Total energy consumption (%), by sector, 2017



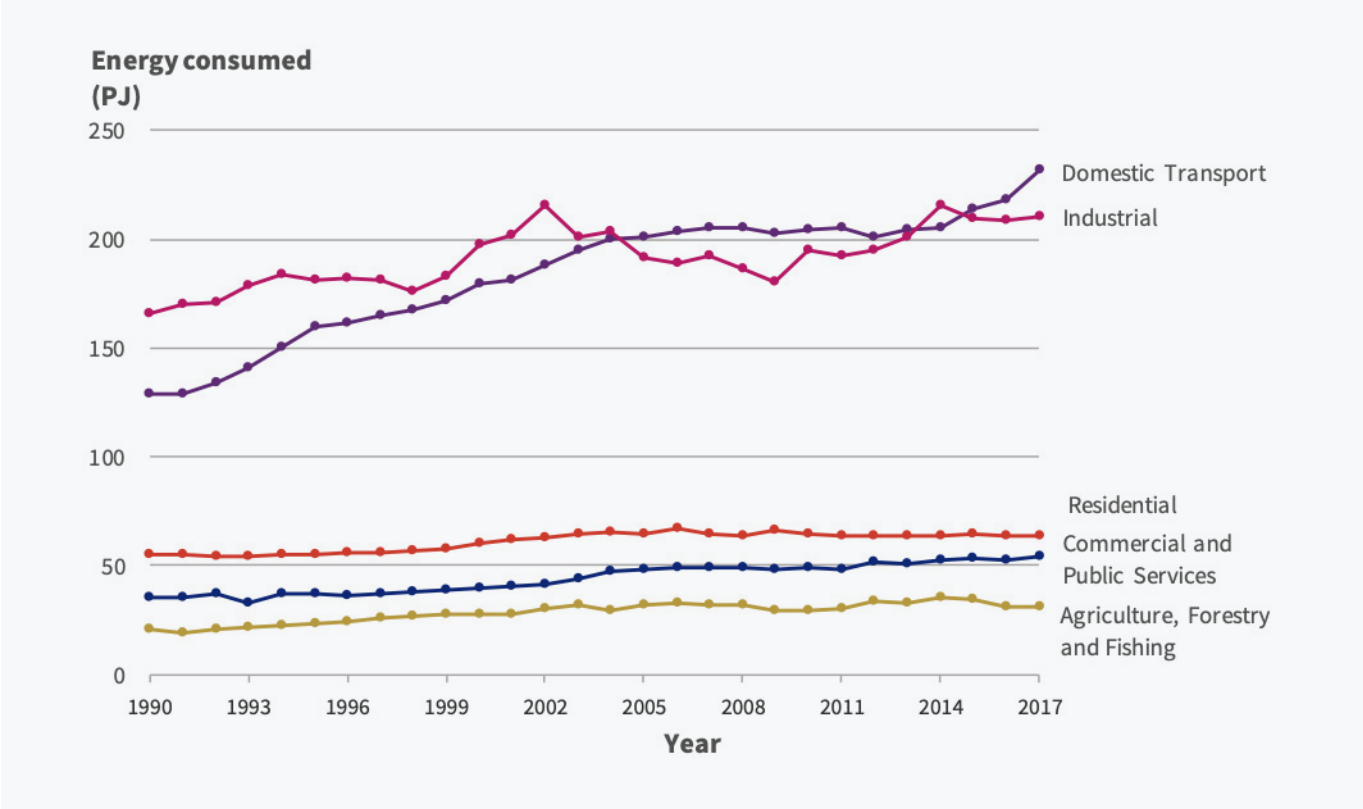
Source: Ministry of Business, Innovation & Employment 2018

Domestic transport and industrial sector were the main energy consumers from 1990

From 1990 to 2017, the domestic transport and industrial sectors were the main energy consumers in New Zealand (Figure 4). Together, these two sectors contribute to three quarters of the total energy consumption in New Zealand. Domestic transport was the biggest consumer of energy since 2013, when it overtook the industrial sector.

The largest increase in energy consumption between 1990 and 2017 was in the domestic transport sector (mean change of 2.2% per year), the smallest increase was seen in the residential sector (mean change of 0.5% per year) (Table 2 and Figure 4).

Figure 4: Total energy consumption (PJ), by sector, 1990–2017



Source: Ministry of Business, Innovation & Employment 2018

Oil is the major fuel type in the domestic transport sector

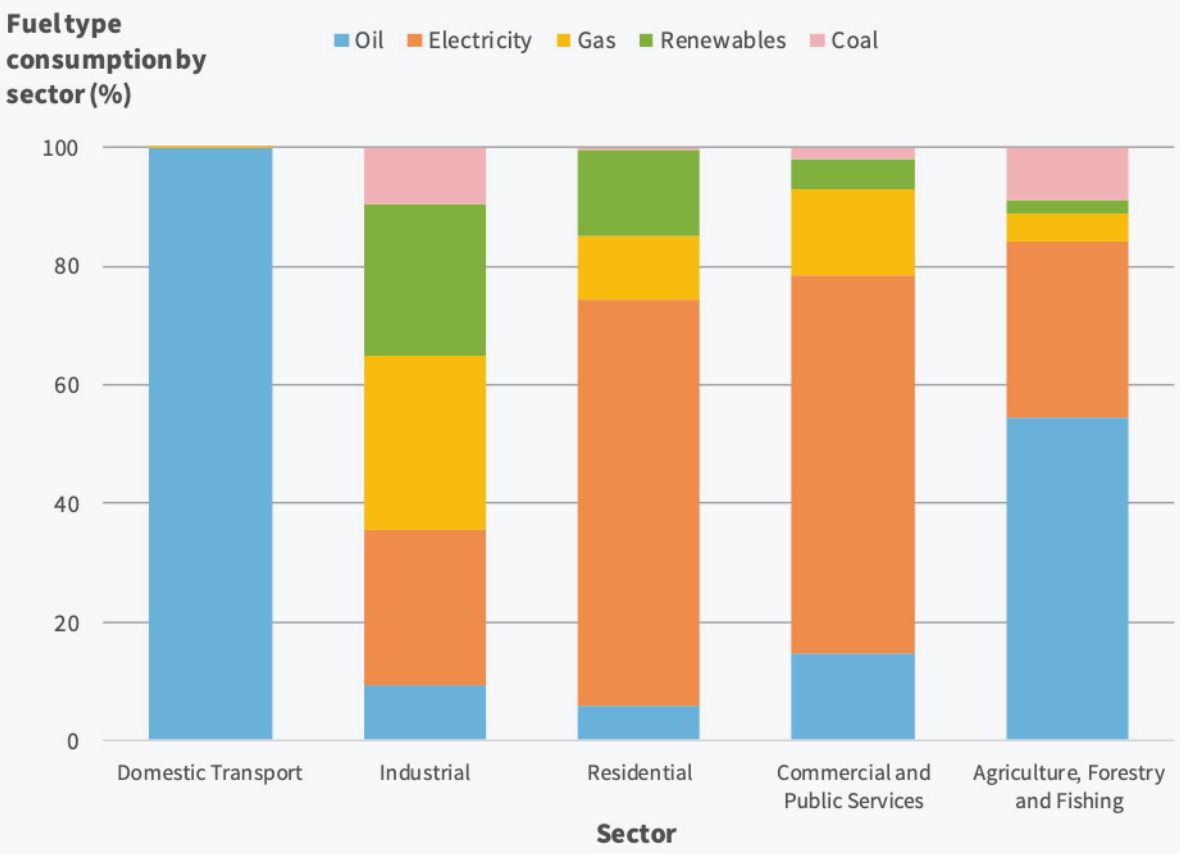
Oil was the major type of fuel consumed in the domestic transport (99.9%) as well as the agriculture, forestry and fishing sector (54.6%) in 2017 (Figure 5). Electricity was the major type of fuel consumed in the commercial and public services (63.7%) as well as residential sector (68.7%).

Almost all energy in the biggest consuming sector, the domestic transport sector, comes from burning the fossil fuel oil (eg, diesel or petrol for motor vehicles). This dependency on oil produces harmful emissions and greenhouse gases affecting air quality, the climate and public health.

Further information

For more information about domestic transport and motor vehicles Motor vehicles

Figure 5: Total energy consumption (%), by sector and fuel type, 2017



Note: This chart shows the percentage of fuel type consumed based on the total energy consumed in each sector.
Source: Ministry of Business, Innovation & Employment 2018

Data for this factsheet

Data for this indicator comes from the annual *Energy in New Zealand* report published by the Ministry of Business, Innovation & Employment (Ministry of Business, Innovation & Employment 2018).

References

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Other climate change topics include

Temperature

Drought

Monitoring the health effects of climate change

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Further information

For descriptive information about the data **Total Energy Consumption**

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