Energy in New Zealand 2026

2025 CALENDAR YEAR EDITION

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government
Te Kāwanatanga o Aotearoa

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Ministry of Business, Innovation and Employment (MBIE)
Hīkina Whakatutuki – Lifting to make successful

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Quick facts for 2025

Renewable sources made up **over 47%** of total primary energy supply, **a record high**

Total electricity generation capacity from renewables reached **9,098 MW** in 2025

32% of our total final consumption came from modern renewables**, another record high**

Coal stockpile at Huntly **over 1 million tonnes, highest since 2012**

Record high geothermal and solar production contributed to renewables making up over **88%** of electricity generation

Diesel consumption was enough to fill **1540 Olympic-size swimming pools**

Natural gas supply fell to 103 PJ, **lowest on record**

New Zealand's annual primary energy supply would supply the U.S for **three days**

A

Energy overview

Renewable generation reached its highest share in electricity generation since 1981, while total energy consumption fell to its lowest level since 2011 mainly due to lower industrial demand. Energy intensity hit a record low due to reduced use in the industrial and agricultural sectors.

Renewable energy supply increases to another record high

Total primary energy supply is the total amount of energy available for use in New Zealand, accounting for domestic production and trade. New Zealand's total primary energy supply[1] for 2025 was 827 PJ, a decrease of 1.6 per cent (13.1 PJ).

Production decreased slightly, down 0.9 per cent (5.20 PJ). Contributing to this decrease was lower natural gas production, which fell 14.4 per cent (17.2 PJ), as fields approach the end of their operational life. The production of solid biofuels for energy use also decreased, down 5.2 per cent (2.60 PJ) to the lowest level since 1994.

In contrast, coal production increased by 4.2 per cent (2.64 PJ). This was driven mainly by higher bituminous coal production following the reopening of the Tawhai Tunnel, which had been closed during 2024 and had limited production in that period.

Production from renewable energy sources also increased in 2025. Geothermal energy production rose by 5.0 per cent (11.4 PJ), while solar energy production increased by 56 per cent (1.37 PJ), reflecting continued growth in generation capacity. Hydro energy production was also up 2.1 per cent (1.77 PJ) with more favourable hydro conditions than 2024[2].

Overall, a record high 47.7 per cent of New Zealand's total primary energy supply in 2025 came from renewable energy sources, reflecting the continued increase in supply of renewables for electricity generation and declines in production of non-renewable energy sources (Figure A.1).

[1] Total primary energy supply refers to total domestic production plus imports, minus any exports or energy used in international transport. It also considers any changes in energy stock levels.

[2] https://www.ea.govt.nz/news/eye-on-electricity/strong-inflows-push-hydro-storage-above-nominal-full/

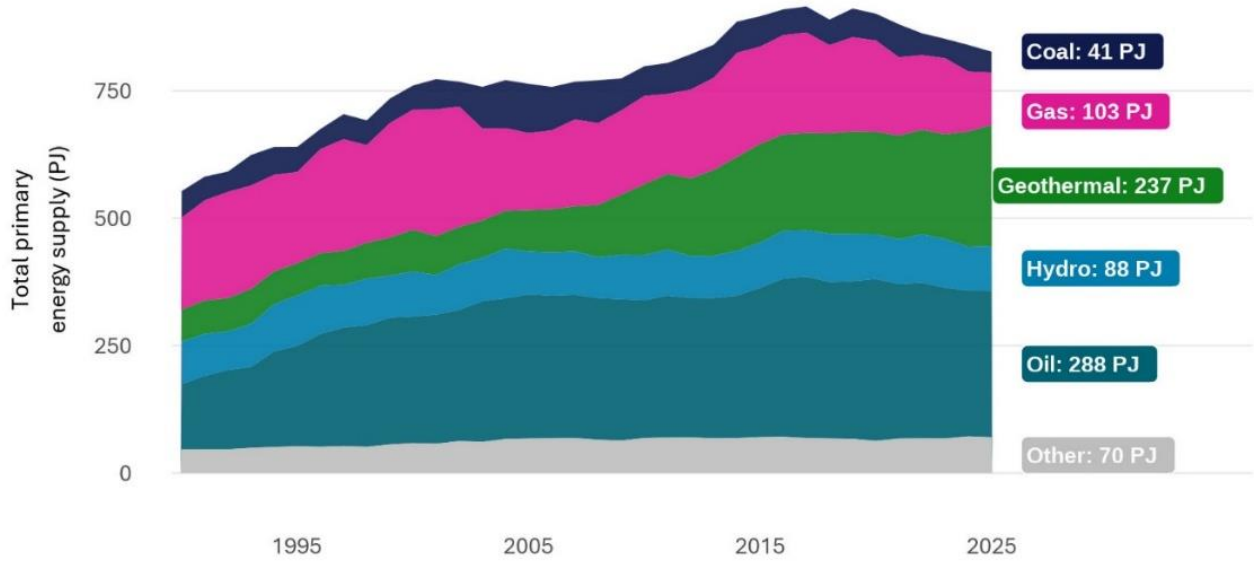


Figure A.1: Total primary energy supply by fuel type, by year.

Energy imports increase

National energy imports increased by 2.2 per cent (7.99 PJ). This was primarily driven by coal imports, which rose 29 per cent (6.44 PJ). Genesis Energy increased their imports of sub-bituminous coal in anticipation of a potential increased need for non-renewable generation to help meet electricity demand in winter 2025. This saw the coal stockpile at Huntly Power Station reach a 13 year high of 1.16 million tonnes[3]. LPG imports also increased, up 15 per cent (0.47 PJ) as New Zealand continues to rely more on imports amid declining domestic production due to fields reaching their end of life.

Energy self-sufficiency measures the ability for a country to meet its own energy supply needs through domestic production. A value of 100 per cent indicates that a country produces all the energy it needs, whereas values above or below 100 per cent indicate it is a net exporter or importer of energy. In 2025, national self-sufficiency increased slightly from 72.1 per cent to 72.6 per cent. Coal self-sufficiency rose from 121.3 per cent to 160.4 per cent, reflecting higher domestic production after the Tawhai Tunnel reopened in early 2025. Its closure during 2024 had reduced coal production and exports by disrupting a key transport route. This

[3] https://media.genesisenergy.co.nz/genesis/investor/2026/h1_fy26_interim_report.pdf

measure does not distinguish between energy produced for export and energy available for domestic use.

In contrast, LPG self-sufficiency decreased from 69.1 per cent to 62.8 per cent as domestic production falls and reliance on imports increases (Figure A.2).

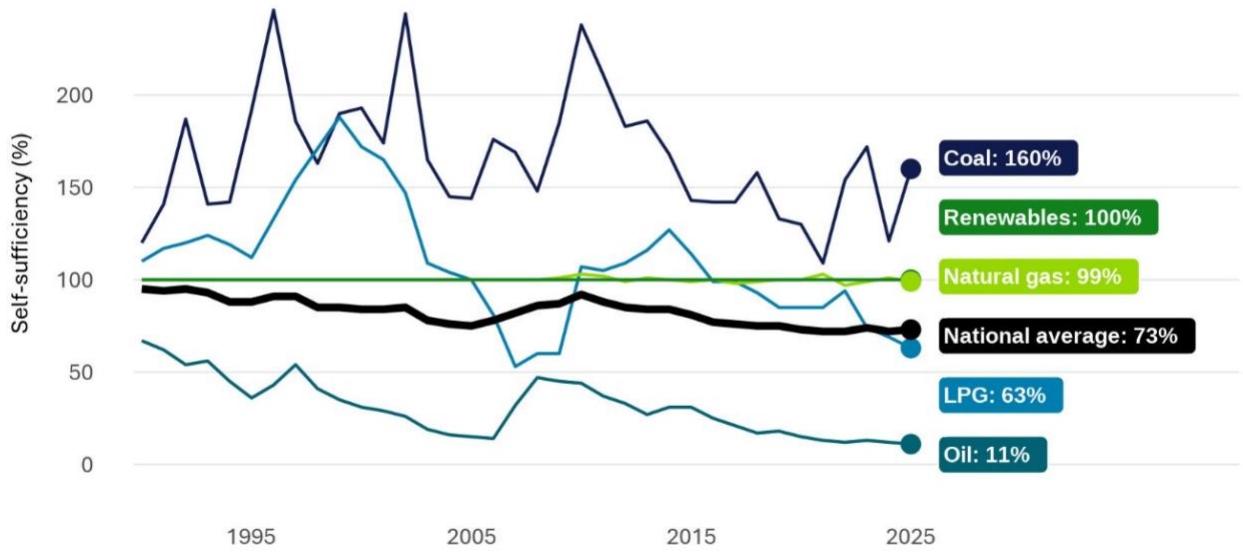


Figure A.2: Self-sufficiency by national average and energy types by year

Record high share of energy consumption from renewables

Total energy consumption decreased slightly by 1.2 per cent (6.25 PJ) to 523 PJ in 2025, its lowest level since 2011. This decline was largely driven by lower industrial demand, which fell 2.5 per cent (3.81 PJ). Within the industrial sector, the largest declines occurred in the chemical products subsector, down 14 per cent (2.11 PJ), and the non-metallic products subsector, was down 23 per cent (1.32 PJ). Reduced demand for non-renewable energy sources increased the share in total energy consumption coming from renewable sources to 31.8 per cent, an all-time high (Figure A.3).

The increase in renewable energy consumption was driven by a decrease in non-renewable demand. The food processing sector, which includes dairy and meat product processing, saw lower coal consumption. Fonterra continues their switch to renewable energy sources in their manufacturing processes, decreasing overall sub-bituminous coal consumption by 17 per cent (1.71 PJ) to 8.21 PJ, its lowest level on record. Further, bituminous coal consumption fell by 44 per cent (1.30 PJ) to 1.65 PJ, also a record low.

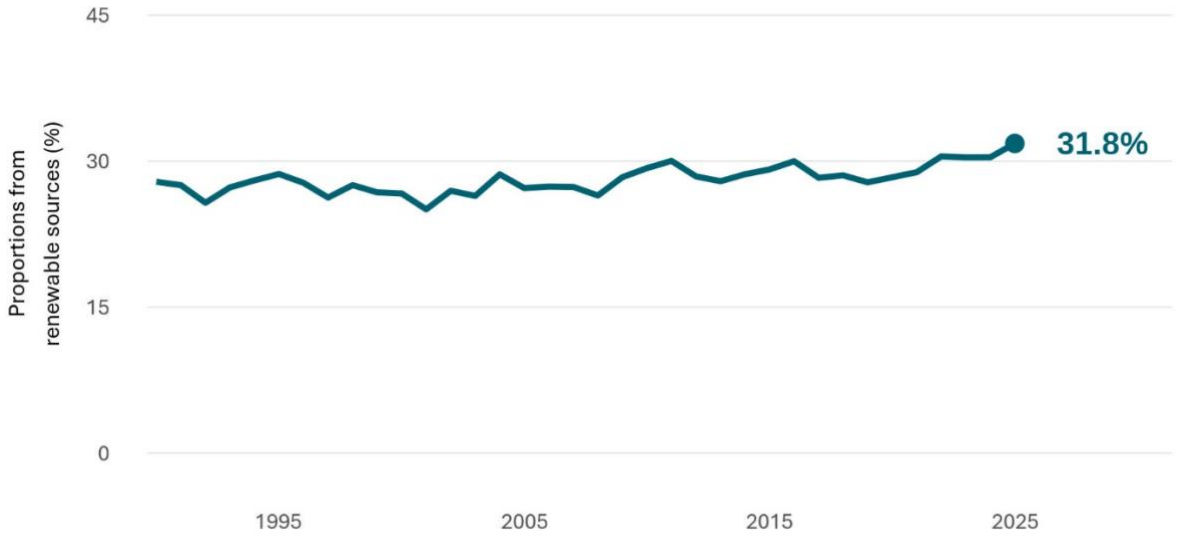


Figure A.3: Proportion of total energy consumption from renewable sources by year.

Energy intensity gives an indication of the relationship between energy use and economic growth by telling us the amount of energy required to produce each dollar of gross domestic product (GDP).

National average intensity has improved slightly, from 1.88 MJ/NZ$ in 2024 to 1.86 MJ/NZ$ in 2025. The majority of sectors improved, with the chemicals and metals sector seeing the largest decrease from 9.02 MJ/NZ$ to 8.55 MJ/NZ$. Further, the agriculture, forestry, and fishing sectors decreased from 2.07 MJ/NZ$ to 2.00 MJ/NZ$, while the commercial and industrial (including chemicals and metals) sectors saw minimal changes (Figure A.4).

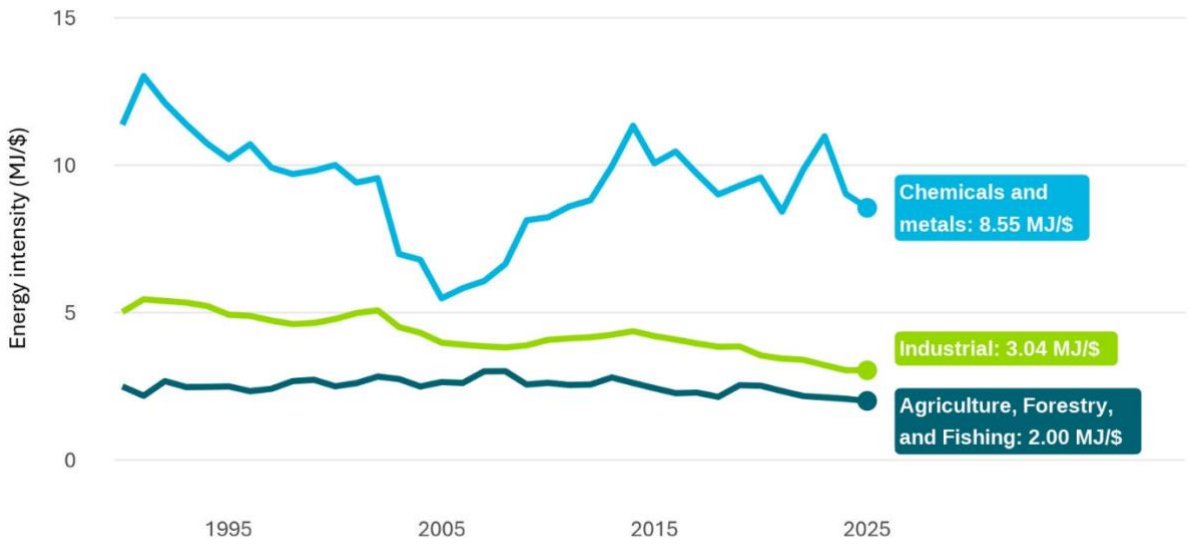


Figure A.4: Energy intensity by energy type and year.

B

Electricity

Record levels of geothermal and solar generation, driven by growth in generation capacity and reduced reliance on thermal generation. As a result, 88.5 per cent of electricity generated in 2025 came from renewable sources.

Growing electric vehicle uptake contributed to increased demand for electricity in the transport sector in 2025. Industrial demand also increased, reflecting the end of New Zealand Aluminium Smelters' demand response from winter 2024 alongside the ongoing impacts of electrification. In contrast, demand by the agriculture and residential sectors fell, with national consumption increasing slightly on 2024 levels.

Background

Most of New Zealand's electricity generation comes from renewable sources:

- **Hydroelectric** generation has been a part of New Zealand's energy system for over 100 years and continues to provide a large share of our electricity needs. At over 5,000 MW, hydro accounts for around half of national generation capacity, with most of it found in the South Island.
- **Geothermal** generation in New Zealand began over 55 years ago with the opening of the Wairakei Power Station in November 1958. Most of New Zealand's installed capacity is in the Taupō Volcanic Zone. Geothermal plants run as baseload, meaning that they are unable to quickly increase or decrease their generation output.
- **Wind** generation has grown quickly as a source of electricity in New Zealand with the first wind farm commissioned in 1997. The largest wind farms are in the North Island.
- **Solar** is a relatively new source of electricity generation in New Zealand. Households and businesses have their own solar panels for on-site generation ('distributed solar') but there are also large-scale (or 'utility-scale') solar farms feeding into New Zealand's national grid. The first solar farm connected to the national grid in 2025.

In most years, over 80 per cent of electricity is generated from renewable sources. The remainder of electricity generation comes from the combustion of non-renewable sources such as **coal, oil, and natural gas**. These fuels account for around a fifth of New Zealand's annual electricity generation.

Battery Energy Storage Systems (**BESS**) are a new and growing technology in New Zealand that can store electricity and discharge it back into the grid as required. BESS improves grid stability, security of supply and resilience of the power system.

Around a third of New Zealand's electricity is used by households and around another third by industrial sectors. Most of our industrial electricity demand comes from the basic metals, food processing, and wood processing sectors. The aluminium smelter at Tiwai Point is the largest single user of electricity in the country. The commercial sector consumes around a quarter of New Zealand's electricity demand. The remaining demand comes from the agriculture, forestry, and fishing sectors as well as transport.

Electricity generation from renewable sources reaches new high

In 2025, 44,140 gigawatt hours (GWh) of electricity were generated in New Zealand, an increase of 0.4 per cent from 2024.

88.5 per cent of electricity generated in 2025 came from renewable sources, an increase from 85.5 per cent in 2024 (Figure B.1). This is the highest share of electricity generated from renewable sources since 1981. This increase in generation from renewable sources was driven by new capacity such as geothermal and solar (Figure B.2).

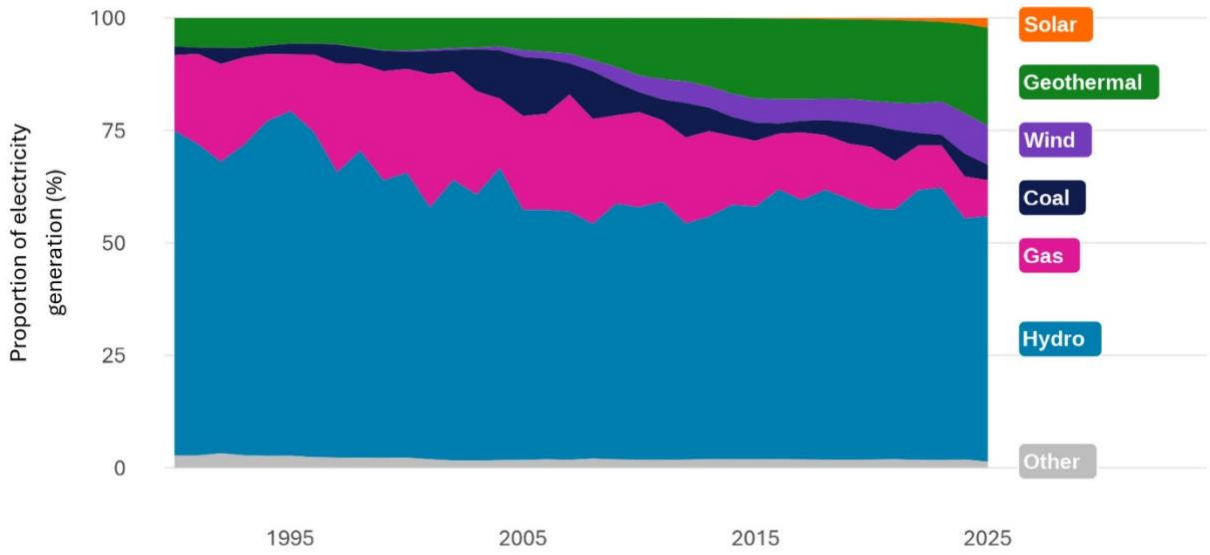


Figure B.1: The proportion of total electricity generation from each fuel type, by year.

Geothermal generation increased 10 per cent on 2024, reaching a record 9,631 GWh in 2025. The commissioning of the geothermal plants Tauhara (May 2024), Te Huka 3 (October 2024) and TOPP2 (December 2025), contributed to the record level of geothermal generation.

Solar generation increased 66 per cent on 2024 levels, with annual generation from solar reaching a record 959 GWh in 2025. This was driven by an increase in generating capacity, with solar generation capacity increasing 52 per cent on 2024 levels to a total of 830 MW. In January 2025, Lodestone's Te Herenga o Te Rā near Waiotahe, with a capacity of 33 MW, became the first solar farm in New Zealand to be directly connected to the national grid. Several other utility-scale plants came online and contributed to the increase in solar generation, such as Lauriston (November 2024), Te Puna Mauri ō Omaru (December 2024), Pukenui (October 2025), Taiohi (October 2025) and Pāmu Rā ki Whitianga (November 2025). Solar capacity and generation are expected to continue an increasing trend over the next few years, with many grid-connected solar plants currently under construction or in planning. The

Electricity Authority's generation investment pipeline shows New Zealand's solar capacity is expected to grow by 930 MW in the next three years from committed projects[4].

Despite declining 3.3 per cent on 2024 levels, wind generation remained strong at 3,811 GWh. This was the second-highest annual wind generation figure on record, behind 2024's record of 3,940 GWh.

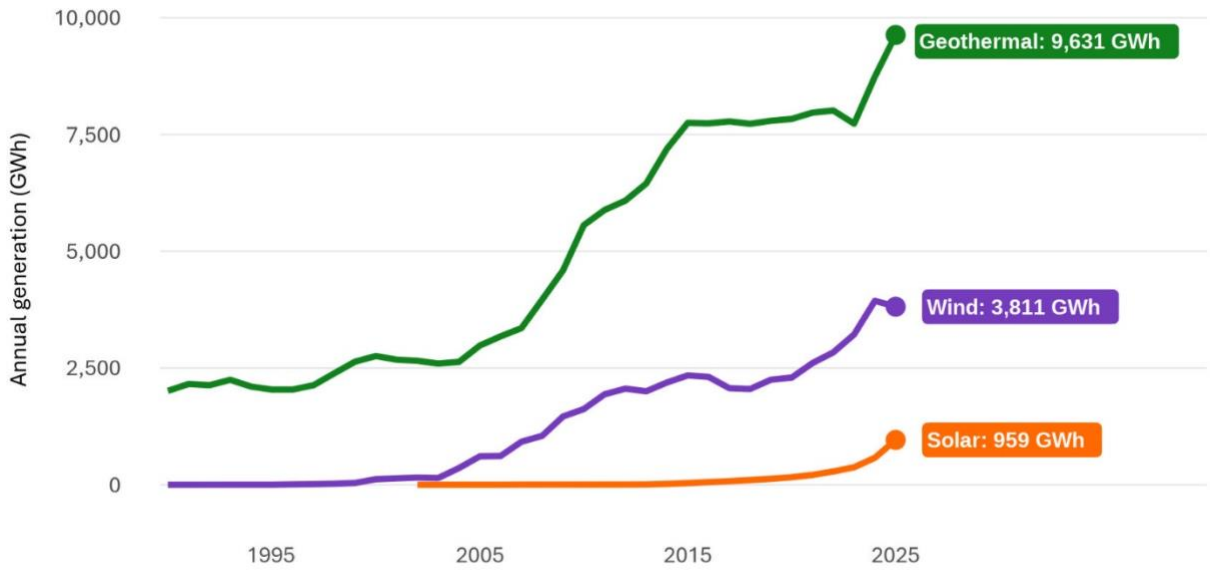


Figure B.2: Electricity generation from geothermal, wind, and solar sources, by year.

Record low inflows for early 2025 quarters

Total hydro generation in 2025 increased 2.1 per cent to 24,079 GWh from 2024. Hydro generation was relatively low in 2024 due to unfavourable hydrological conditions, notably during the winter months.

Hydro generation in the first half of 2025 was lower than the same period in 2024, reflecting low inflows. Transpower reported record low inflows during January and February, resulting in the March 2025 quarter having the lowest quarterly hydro generation since the June 2012 quarter and the lowest March quarter hydro generation since 1987. To compensate for reduced hydro generation, coal generation increased by 54 per cent compared to the March 2024 quarter.

[4] https://www.ea.govt.nz/data-and-insights/charts-and-dashboards/generation-investment-pipeline

Conditions improved later in the year. Hydro generation in the September 2025 quarter was 23 per cent higher than the September 2024 quarter. The December 2025 quarter also experienced strong inflows, with hydro generation in the quarter up 8.0 per cent on the December 2024 quarter (Figure B.3).

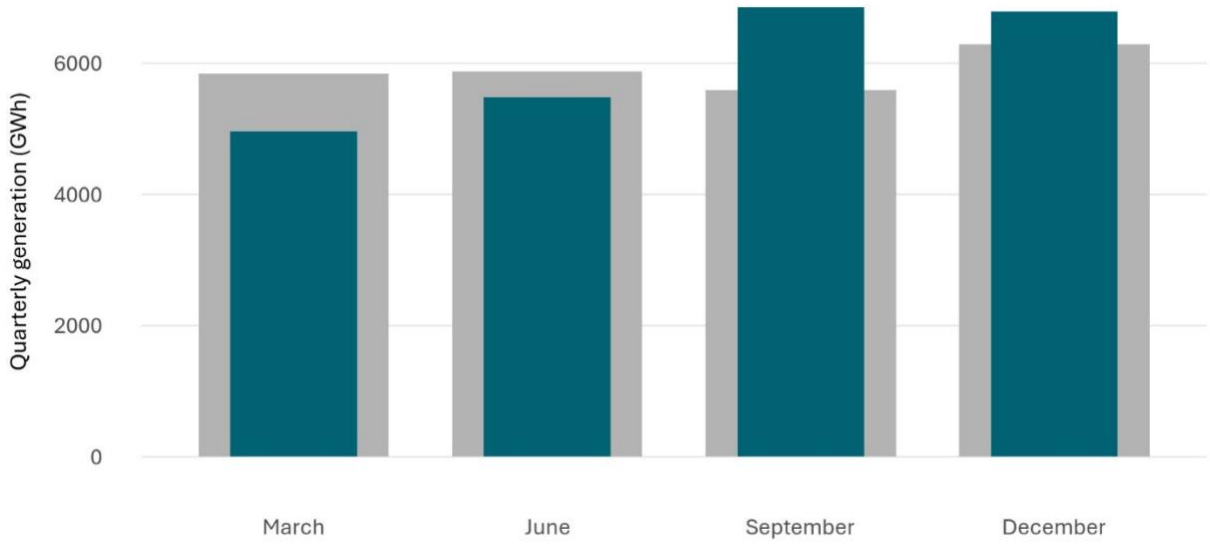


Figure B.3: Quarterly hydro generation in 2025 (teal bars), compared to quarterly hydro generation in 2024 (grey bars).

Gas generation at record low since 1981

With high renewable generation in 2025, the need for generation from non-renewable sources reduced. The 2024 calendar year had seen increases in coal, oil and gas generation in response to low hydro inflows. In 2025, coal generation decreased by 32 per cent to 1,523 GWh, oil generation dropped 76 per cent to 6 GWh and gas generation dropped 13 per cent to 3,538 GWh.

At 3,538 GWh, 2025 saw the lowest amount of gas generation in New Zealand since 1981. Contributing to the decreases in gas generation were less available gas supply and reduced operation of gas-powered generation plants. Genesis Energy's Huntly Unit 5 had a three-month outage from October to December 2025, for scheduled maintenance. This allowed gas to be reallocated to other gas users in the market[5]. Contact Energy's Taranaki Combined Cycle (TCC) gas generation plant was initially scheduled for closure at the end of 2024 due to

[5] https://www.genesisenergy.co.nz/about/news/genesis-extends-unit-5-outage-to-support-gas-consumers

declining gas supply. However, TCC was made available until the end of 2025 to support security of supply through the winter[6].

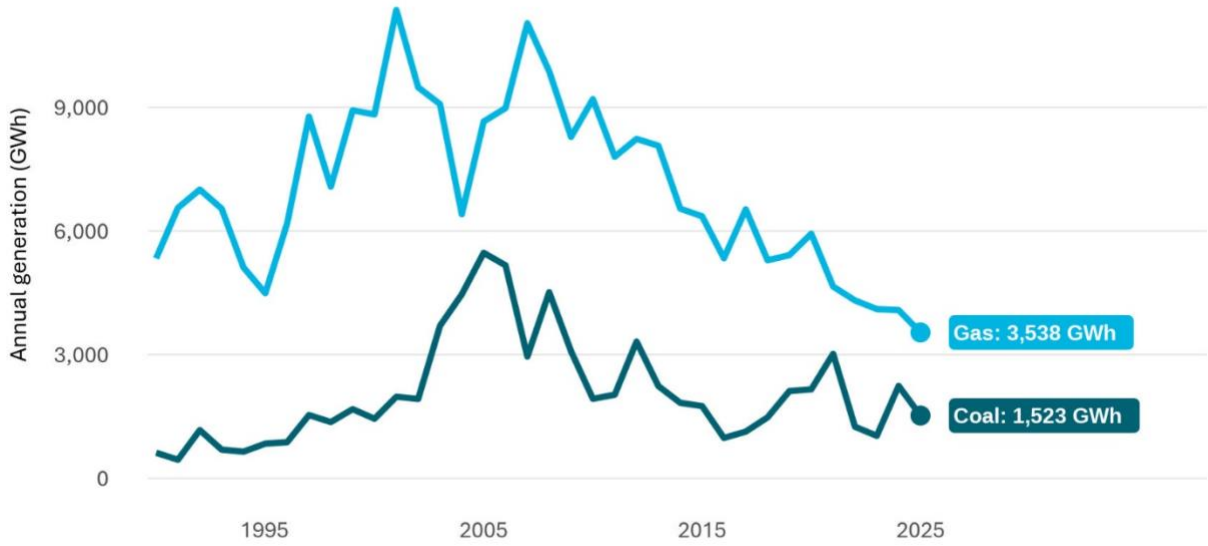


Figure B.4: Electricity generation from gas and coal sources, by year.

[6] https://contact.co.nz/investor-centre/reports-and-results/integrated-report

Electricity consumption increases slightly

Electricity consumption in New Zealand reached 40,583 GWh in 2025, an increase of 1.3 per cent compared with 2024. Growth in electricity demand was primarily driven by higher consumption in the industrial, commercial, and transport sectors, which increased by 3.2, 1.6, and 18 per cent respectively. Growth in the transport demand was particularly strong, reflecting the continue uptake of electric vehicles (EV's).

In contrast, consumption in the agriculture, forestry, and fishing, and residential sectors fell compared with 2024. Although residential electricity consumption reached a quarterly record high of 4,509 GWh in the September 2025 quarter, annual residential electricity consumption decreased by 1.4 per cent.

Despite these declines, stronger demand from business and transport users more than offset the reductions, resulting in an overall increase in national electricity consumption.

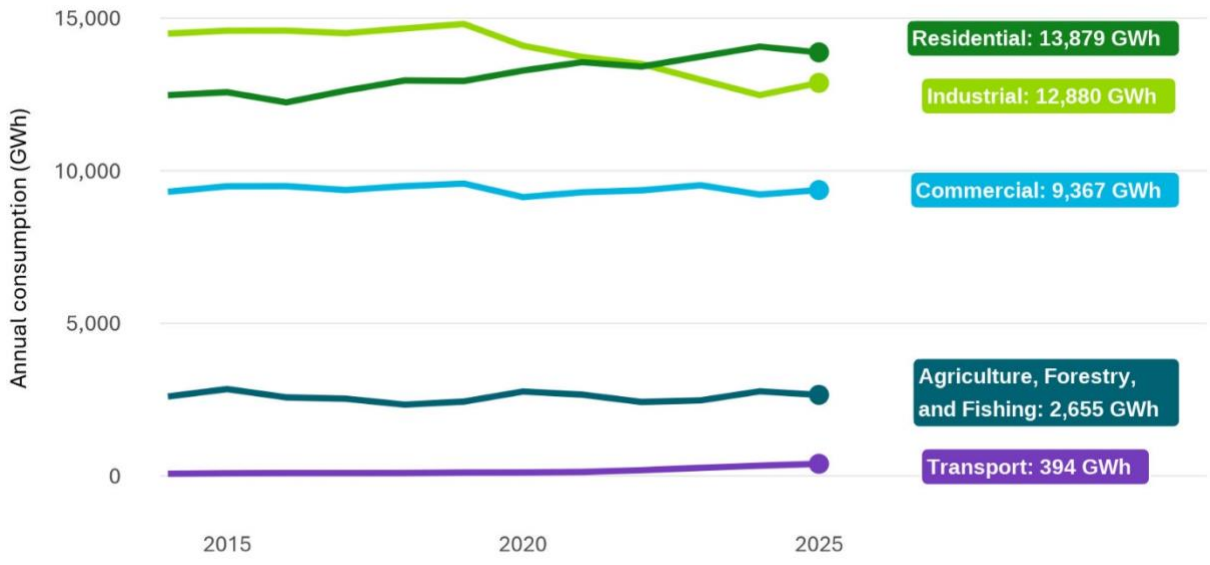


Figure B.5: Electricity consumption by sector, by year.

Electricity consumption in the transport sector increased from 334 GWh in 2024 to 394 GWh in 2025, continuing the sector's long-term upward trend (Figure B.6). Contributing to this growth is increasing electric vehicle (EV) adoption, which is shifting energy demand in transport from fossil fuels to electricity. Ministry of Transport fleet statistics show that at the end of 2025, there were 92,628 battery electric vehicles in New Zealand's motor vehicle fleet,

up from 83,902 at the end of 2024[7]. Battery electric vehicles accounted for 1.9 per cent of the total fleet at the end of 2025, compared with 1.7 per cent a year earlier.

In April 2025, the Government announced the EV Charging Infrastructure Loans programme, aimed at expanding the availability of public charging infrastructure across the country.

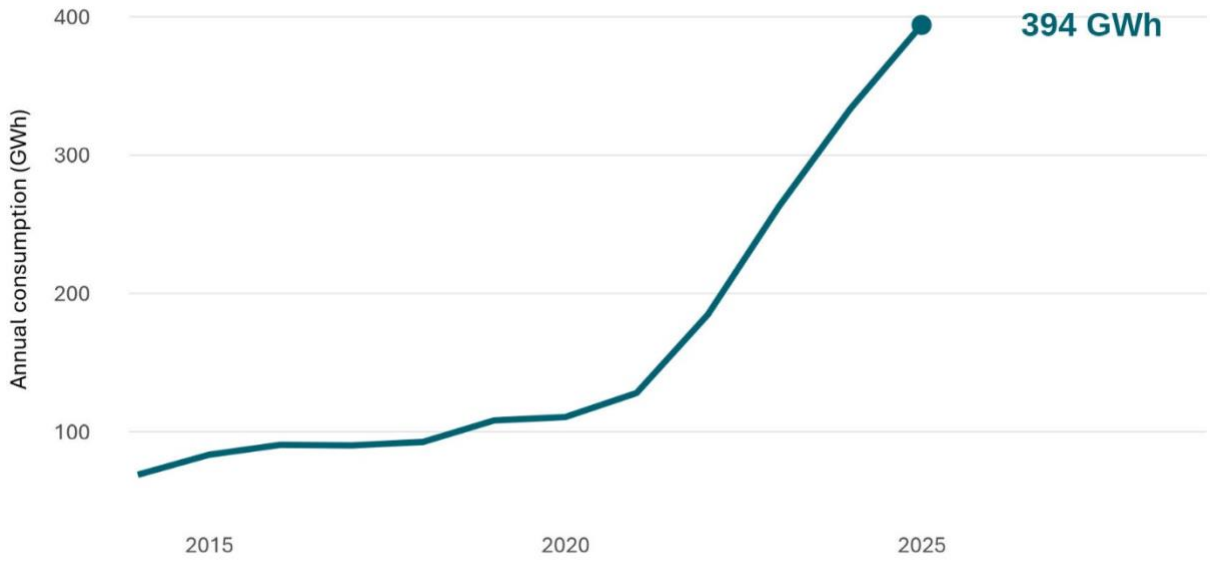


Figure B.6: Electricity consumption in the transport sector, by year.

Industrial demand increases due to changes in activity and ongoing impacts of electrification

The industrial sector remained New Zealand's largest consumer of electricity in 2025, using 12,880 GWh, an increase of 3.2 per cent compared with 2024 (Figure B.7). The increase in total industrial demand in 2025 was driven by increases in the basic metals and food processing sectors, of 6.1 per cent and 4.3 per cent respectively. Consumption in the food processing sector has continued to steadily increase, reaching 3,248 GWh.

The basic metals sector is the largest contributor to industrial consumption, with the aluminium smelter at Tiwai Point the largest single user of electricity in New Zealand. In 2024, the demand response agreement between Meridian Energy and New Zealand Aluminium Smelters (NZAS) was activated in response to low hydro inflows and decreased gas supply. In the winter 2025, improvements in hydro storage levels and the outlook for supply in the

[7] https://www.transport.govt.nz/statistics-and-insights/fleet-statistics

market saw Meridian Energy and NZAS agree to ramp up electricity use at Tiwai Point from 16 June 2025, with the demand response arrangement ending on 11 August 2025[8].

Another contributor to the increased industrial consumption is the ongoing electrification of manufacturing processes by major industrial energy users in the food processing sector. In May 2025, Fonterra commissioned its first electrode boiler at its Edendale site. Fonterra also announced a $150 million investment in electrification projects across its North Island sites in January 2025. This includes two electrode boilers at Whareroa, a new electrode boiler at Edgecumbe, and two resistive electric boilers at Waitoa.

Despite an overall increase in industrial demand, consumption in the wood, pulp, paper and printing sector has remained low and relatively stable since 2023, with a 0.1 per cent decrease compared with 2024. The closures of production and processing facilities in recent years have contributed to this. In February 2025, Oji Fibre Solutions confirmed Kinleith Mill will permanently cease paper production at the end of June 2025, moving to a paper import model for their packaging operations instead[9]. This follows the closure of their Penrose Mill in September 2024.

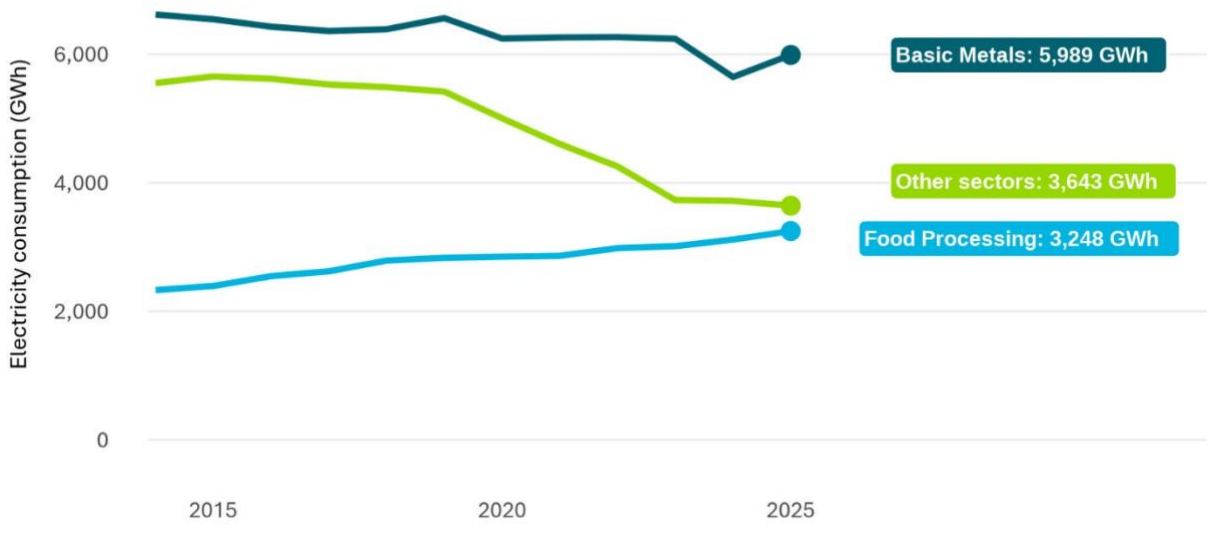


Figure B.7: Industrial electricity consumption by subsector, by year. "Other sectors" include wood, pulp, paper and printing, chemicals, mining and other minor sectors.

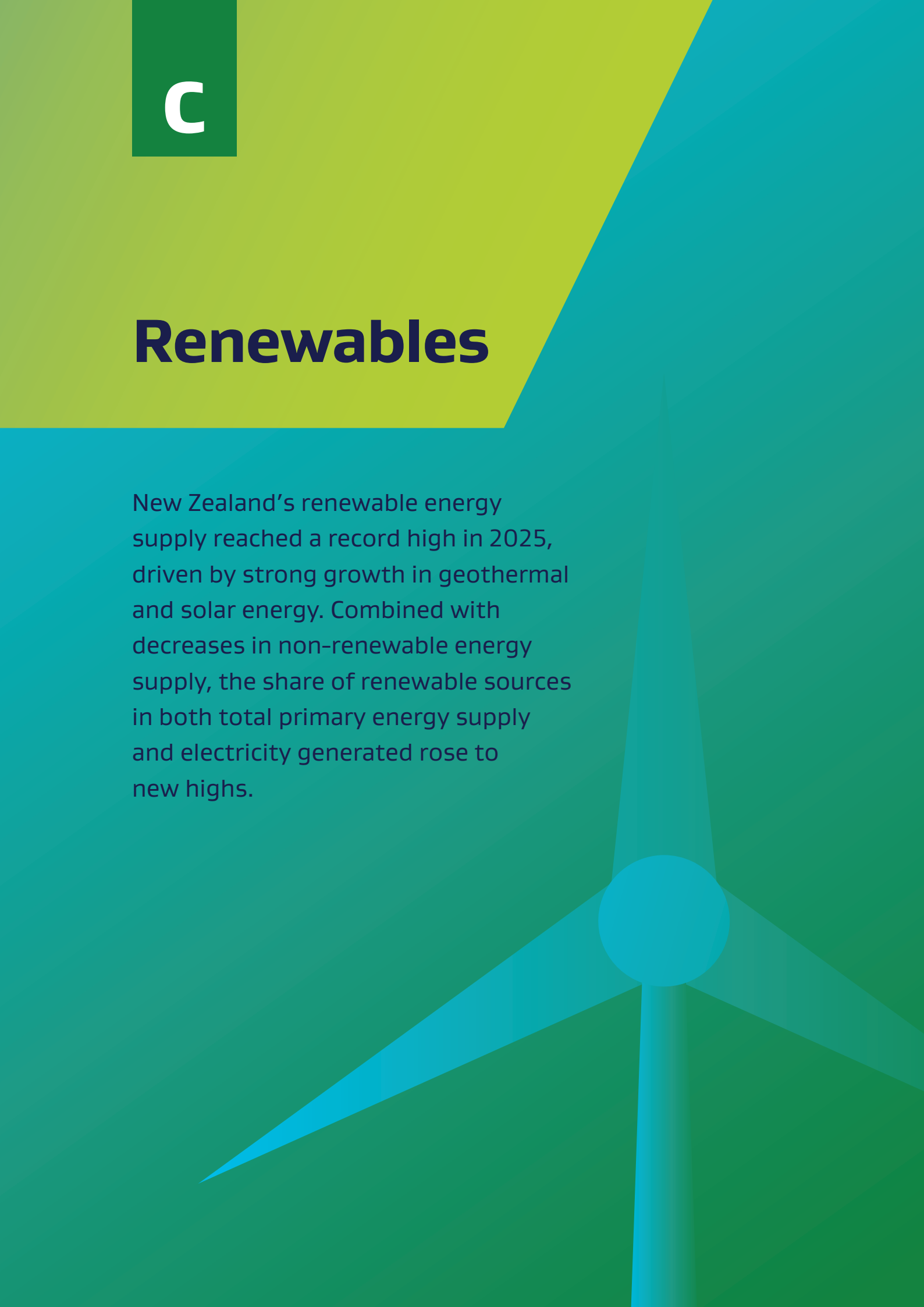
[8] https://www.meridianenergy.co.nz/news-and-events/meridian-and-nzas-agree-to-shorten-current-demand-response

[9] https://ojifs.com/ojifs-confirms-kinleith-mill-decision

C

Renewables

New Zealand's renewable energy supply reached a record high in 2025, driven by strong growth in geothermal and solar energy. Combined with decreases in non-renewable energy supply, the share of renewable sources in both total primary energy supply and electricity generated rose to new highs.



Background

New Zealand uses renewable energy sources for electricity generation and direct use.

Electricity generation

New Zealand's renewable resources are primarily used to generate electricity in New Zealand:

- **Hydro** is used to generate electricity, with hydroelectric plants distributed across both islands. The largest plants, in terms of capacity, are found in the South Island.
- **Wind** is also used to generate electricity, with the largest wind farms found in the North Island.
- New Zealand's **geothermal** resources are almost exclusively concentrated in the central North Island, within the Taupō Volcanic Zone. There is also a geothermal field in Northland at Ngāwhā. Electricity generation plants in these locations run as baseload, meaning that they are unable to quickly adjust their generation output.
- **Solar** is a newer source of renewable electricity generation in New Zealand. Historically, this has been in the form of 'distributed' installations such as on-site generation or use by households and businesses. Recent years have seen large 'utility-scale' solar farms coming online with some of these connected to the national electricity grid.

Direct use

Renewable energy can also be used for a range of other applications:

- **Geothermal** is used directly in industrial processes (such as drying milk powder or timber), heating greenhouses, and for residential and commercial heating. Kawerau, where geothermal steam is a significant source of energy for pulp and paper mills located there, is one of the largest locations in the world for direct use of geothermal heat.
- **Solid biofuels** refer to woody biomass, black liquor, charcoal, and firewood.
    - Many pulp and paper mills and wood processors use by-products, such as **wood residuals** and black liquor, on-site to generate heat for their processes.
    - **Black liquor** is a by-product of the wood pulping process, containing lignin, wood fibres, and chemicals. It is combusted in boilers in pulp mills and is considered to be a solid biofuel.
    - Households use smaller amounts of **charcoal** and **firewood**.
- **Liquid biofuels** are renewable, low emission fuels that can be used in place of existing fossil fuel oil products.

    - **Biodiesel** and **bioethanol** can be blended with petrol or diesel and are compatible with existing internal combustion engines and help reduce transport emissions.
    - **Sustainable aviation fuel (SAF)** is a jet fuel made from renewable feedstocks such as vegetable oils and animal fats and is chemically similar to fossil jet fuel.
- **Biogas** is produced from organic waste sources like wastewater, sewage, and landfills. It consists mainly of methane and carbon dioxide and is used to generate heat and electricity.
    - **Sludge gas** is derived from the anaerobic fermentation of biomass and solid wastes from sewage.
    - **Landfill gas** is derived from the anaerobic fermentation of biomass and other organic solid wastes in landfills.

Renewable energy production increased in 2025

New Zealand's renewable energy supply reached a new record in 2025, increasing from 383 PJ in 2024 to 395 PJ. Growth in renewable supply, combined with a continued decline in non-renewable use, increased New Zealand's renewable share of total primary energy supply (TPES) to a record 47.7 per cent, up from 45.6 per cent in 2024.

The increase in renewable energy also contributed to the highest share of electricity generation from renewable sources since 1981, rising from 85.5 per cent to 88.5 per cent. At the same time, non-renewable energy supply fell to its lowest level since 1992, decreasing from 457 PJ in 2024 to 433 PJ in 2025.

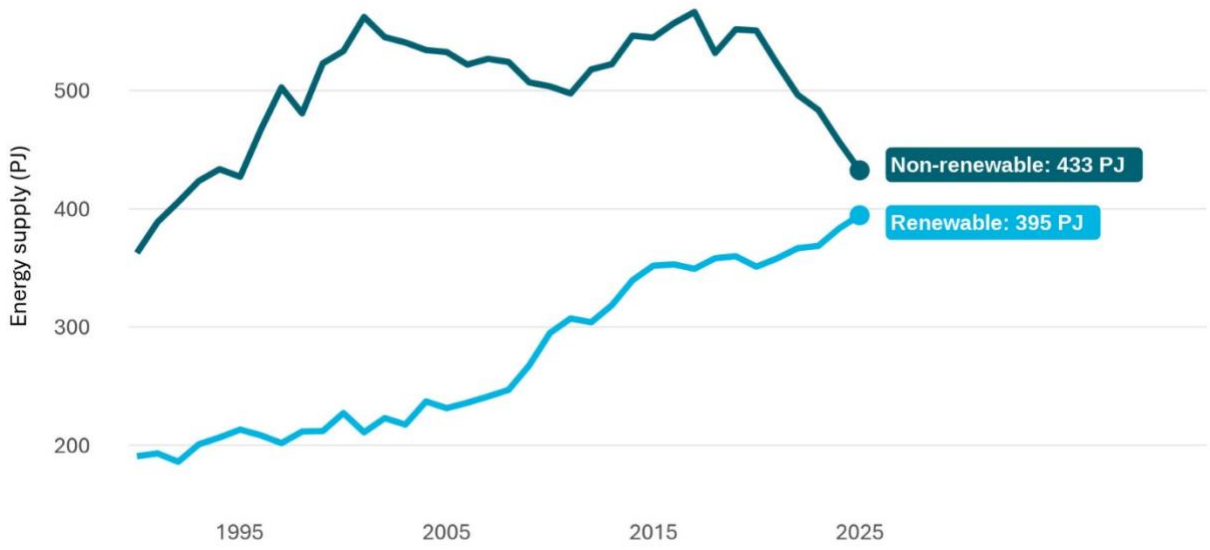


Figure C1: Energy supply from renewable and non-renewable sources by year.

Geothermal and solar energy supply both reached record highs during the year. Hydro production also rebounded from the low 2024 levels, supported by favourable hydrological conditions. While reported solid biofuel supply declined, growth in geothermal and solar more than offset this reduction, resulting in an overall rise in renewable energy supply.

31.7 per cent of energy consumption came from renewable sources

New Zealand's share of modern renewables in total final consumption (TFEC) [10]reached a new record in 2025, increasing from 30.3 per cent in 2024 to 31.7 per cent in 2025. Modern renewables covers consumption of all renewable energy sources by businesses and households, including the amount of electricity use that can be attributed to renewables.

Since peaking in 2004, direct use of renewables has been declining steadily. In 2025 it dropped to 37.5 PJ, its lowest level since 2000. However, the amount of electricity consumption allocated to renewables has been increasing, and in 2025 it reached 129 PJ, its highest level on record.

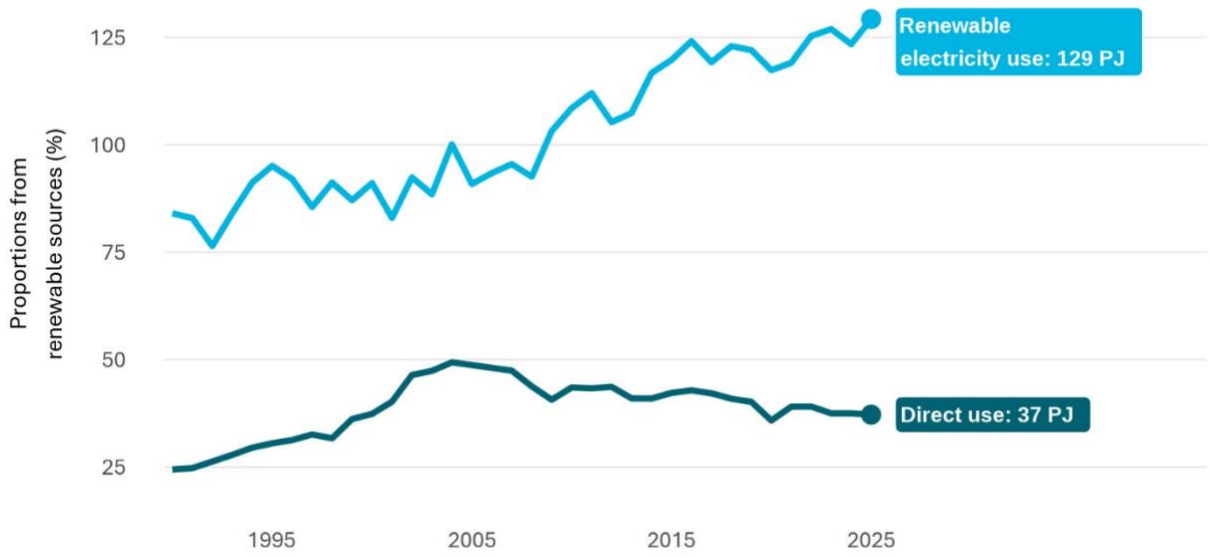


Figure C2: Renewable energy by end-use and year.

[10] TFEC is calculated by combining the direct use of renewable energy by end-users with the renewable portion of electricity consumption and dividing this total by overall final energy consumption.

Wood Energy Strategy and Wood Energy Action Plan

In October 2025, MBIE released the Wood Energy Strategy, which supports the Government's goal of growing New Zealand's forestry sector by increasing the use of wood residues and processing by-products for energy. This initiative aims to boost economic growth, improve energy security, and support the development of a more sustainable and resilient wood energy industry. A Wood Energy Taskforce and Action Plan have been established to support the development of a stronger wood energy industry to drive this work forward.

As part of this work MBIE is developing a new statistical survey to improve data on how wood energy is being supplied and used in New Zealand[11].

More information is available on MBIE's website: https://www.mbie.govt.nz/about/news/government-sets-direction-for-future-of-bioenergy

Renewable electricity generation capacity continues to grow

Total electricity generation capacity from renewables increased from 8,781 MW in 2024 to 9,149 MW in 2025. This was a 17 per cent increase from 2021, driven by significant growth in solar capacity.

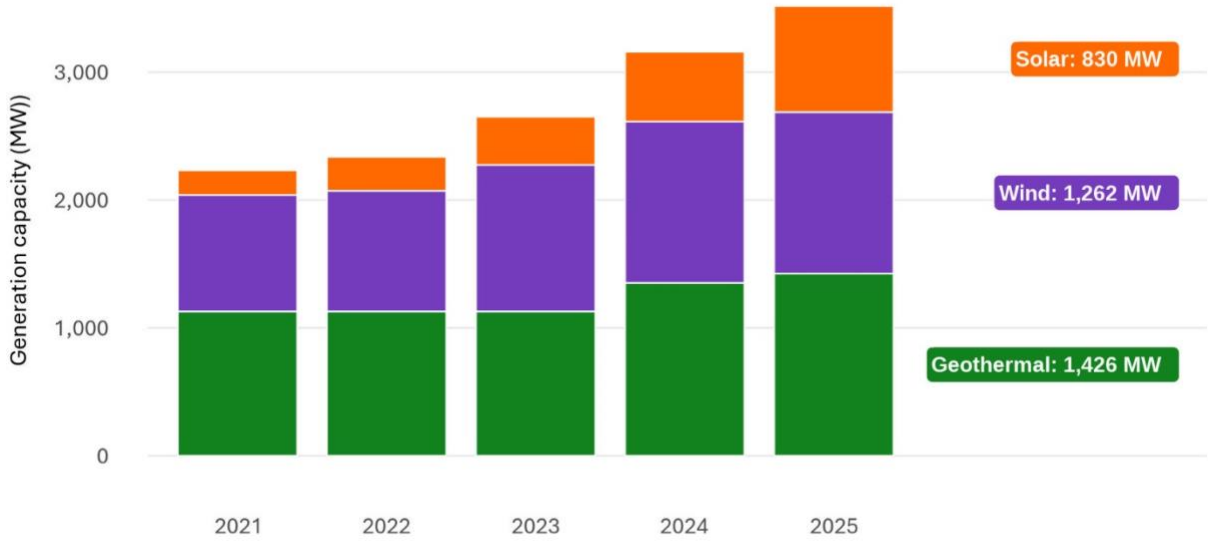


Figure C3: Generation capacity from selected renewable sources from the past five years.

[11] Wood energy supply data is currently under review. This could mean that actual supply is higher than the estimates currently reported.

In 2020, solar capacity made up 1.9 per cent of total electricity generation capacity from renewables, which increased to 9.1 per cent in 2025. Over the 2025 calendar year, several solar plants have come online, growing solar capacity from 545 MW to 830 MW, a 52 per cent increase. In January 2025, Te Herenga o Te Rā became New Zealand's first solar farm to be connected directly to Transpower's national transmission grid, rather than through a local distribution network.

Geothermal capacity also increased with Eastland Generation's TOPP2 power station coming online in December 2025.

Table C1: New plant capacity from January 2025 – December 2025

Plant Name	Type	Capacity[12]
Te Herenga o Te Rā	Solar	33 MW
TOPP2	Geothermal	49 MW
Te Puna Mauri ō Omaru	Solar	17 MWp[13]
Pukenui	Solar	21 MWp[13]
Taiohi	Solar	33 MWp[13]
Pāmu Rā ki Whitianga	Solar	33 MWp[13]
Twin Rivers	Solar	31 MWp[13]
Ward	Solar	9 MW

The Electricity Authority's generation investment pipeline[14] shows 1,705 MW of generation capacity from committed projects, expected to come online in the next three years. 94 per cent of this planned generation capacity comes from renewable projects, with the remaining 6 per cent from battery energy storage system (BESS) projects. Solar projects make up over 50 per cent of the planned generation capacity (930 MW), followed by wind (485 MW) and geothermal projects (190 MW). Renewable generation capacity is expected to grow by 647 MW over the next year as committed projects are commissioned.

[12] Based on public announcements

[13] MWp (megawatt peak) refers to the maximum rated capacity that can be produced under ideal test conditions.

[14] https://www.ea.govt.nz/data-and-insights/charts-and-dashboards/generation-investment-pipeline/

D

Coal

Production and exports increased following disruption to transport routes in 2025. Imports also increased as Genesis Energy continued to build its stockpile at the Huntly Power Station.

Higher renewable generation reduced the need for coal-fired electricity generation compared with 2024. Coal consumption by businesses and households fell to its lowest level on record, with demand declining across all sectors.

Background

There are three different coal types which are produced in New Zealand:

- **Bituminous**: A higher grade of coal typically extracted from the West Coast of the South Island. Most of this coal is exported for iron and steel production purposes or used in the industrial sector.
- **Sub-bituminous**: A lower quality coal which can't be used for metallurgical applications (production of iron and steel). This type of coal is typically extracted from the West Coast, Waikato region or other places in the South Island. The coal burned is used to provide heat for different purposes like drying milk powder, powering steam engines, running boilers, or heating houses.
- **Lignite**: A lower quality coal compared to sub-bituminous which is produced in the South Island. Lignite has a lower energy content and is generally sold to dairy and meat processing plants in the South Island and to households and companies for heating.

Sub-bituminous coal is used at the Glenbrook steel mill south-east of Auckland. Unlike other steel mills, the Glenbrook mill can use thermal-grade coal in the production of iron and steel due to the unique processes employed at the facility. In the iron and steelmaking process, sub-bituminous coal is used as a reducing agent, converting magnetite in iron sand to metallic iron. While it may provide energy, its primary purpose is as a reagent in a chemical reaction, meaning that it is not classified as energy use.

Another major use of coal in New Zealand is for the Huntly Power Station, which uses the energy in combusted coal to drive turbines which generate electricity.

Production and exports increase following the reopening of major transport routes

In June 2024, the Tawhai Tunnel on the route between the Stockton Mine to Lyttleton Port was closed following a partial collapse. This led to a fall in production and the lowest level of national bituminous coal exports since 1994, as this is a major transport route for moving export-bound coal from the Buller and Reefton coal mines.

The reopening of the tunnel in early 2025[15] contributed to national coal production in 2025 increasing 4.2 per cent (2.64 PJ) on 2024 levels (Figure D.1). This growth was driven primarily by bituminous coal production, which increased 11 per cent (4.14 PJ). At the same time, sub-bituminous and lignite decreased by 6.6 per cent (1.48 PJ) and 0.6 per cent (0.03 PJ).

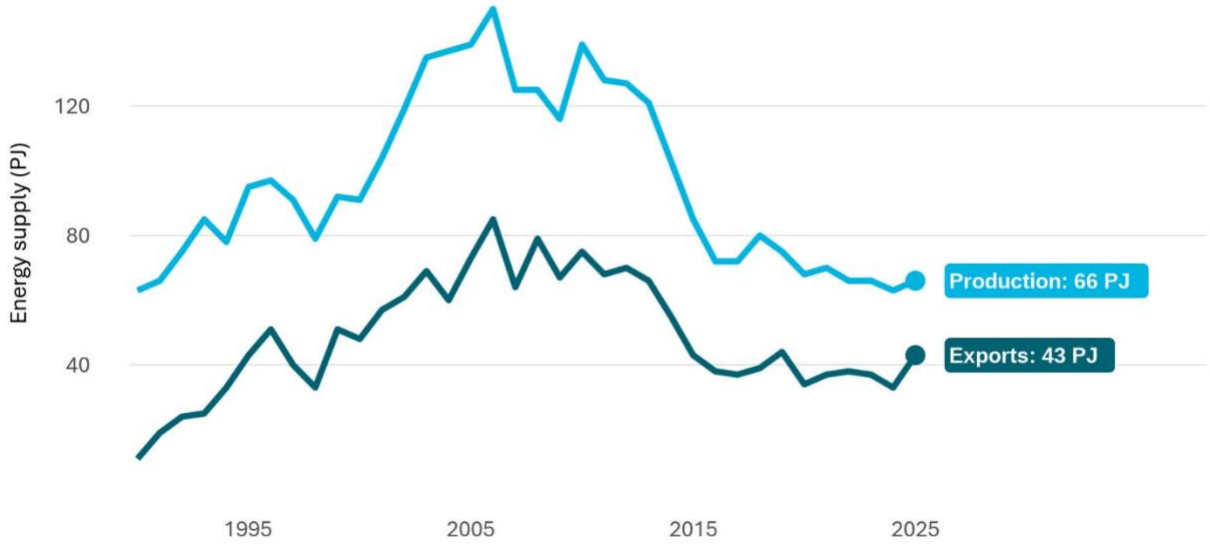


Figure D.1: Total coal production and exports by year.

[15] https://bathurst.co.nz/assets/reports/BATHURST-Annual-Report-2025-Web.pdf

Coal stockpile at Huntly reaches 1 million tonnes

In response to uncertainty around domestic gas supply in 2024, Genesis Energy announced in May 2024 that it would resume imports of sub-bituminous coal to increase the stockpile at the Huntly Power Station (New Zealand's only coal-fired power plant). Further, in anticipation of a potential need for more coal-fired generation in winter 2025, Genesis continued to increase their imports of sub-bituminous coal. As a result, overall coal imports increased by 29 per cent (6.44 PJ) (Figure D.2) in 2025, with sub-bituminous coal imports up by 38 per cent (7.52 PJ).

This helped increase their stockpile to 1.16 million tonnes by the end of 2025, the highest level since March 2012[16].

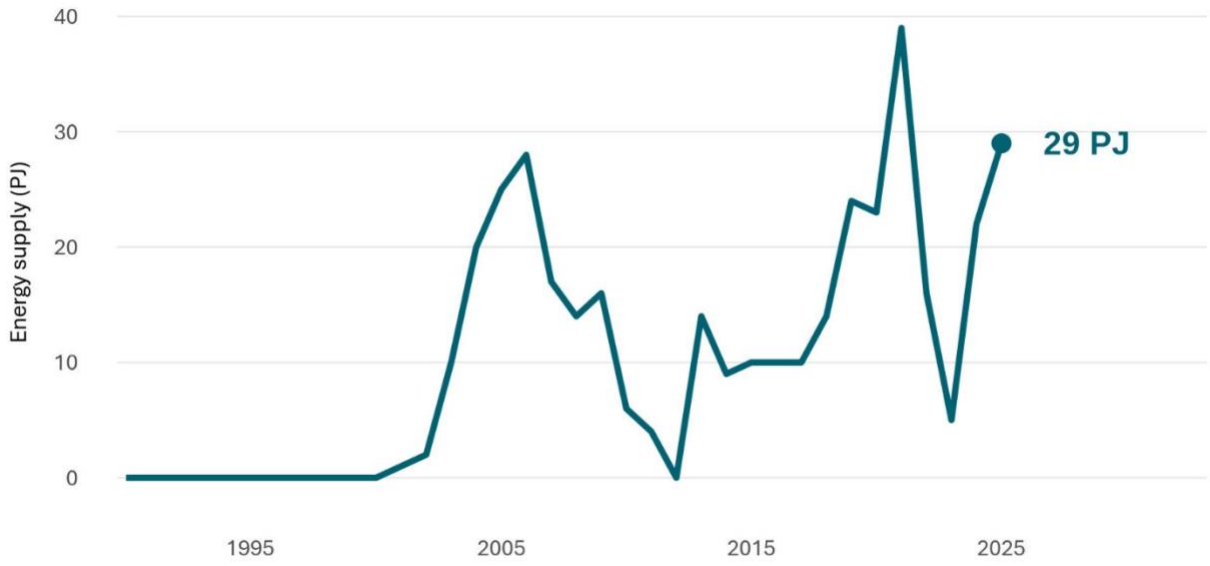


Figure D.2: Total coal imports by year.

Dry conditions in 2024 saw an increased use of non-renewable sources for electricity generation. In contrast, 2025 saw more favourable hydro conditions alongside increased output from geothermal and solar generation following capacity additions over recent years. This led to sub-bituminous coal use for electricity generation decreasing by 38 per cent (6.92 PJ), with the December 2025 quarter seeing the lowest sub-bituminous coal use since the June 2023 quarter.

[16] https://media.genesisenergy.co.nz/genesis/investor/2026/h1_fy26_interim_report.pdf

Coal consumption falls to lowest level on record

Overall coal consumption decreased by 17 per cent (2.94 PJ) to 14.3 PJ in 2025, the lowest level on record. Coal consumption declined in all sectors, with the largest decrease observed in the industrial sector, which fell 18 per cent (2.70 PJ).

The decline in industrial coal consumption was driven by the food processing sector, which includes dairy and meat product processing (Figure D.3). This reflects large energy users, such as Fonterra, reducing reliance on coal in their manufacturing processes. Fonterra's last coal boiler in the North Island was turned off near the end of 2024, and August 2025 saw the conversion of two coal-fired boilers to biomass at their Clandeboye site[17].

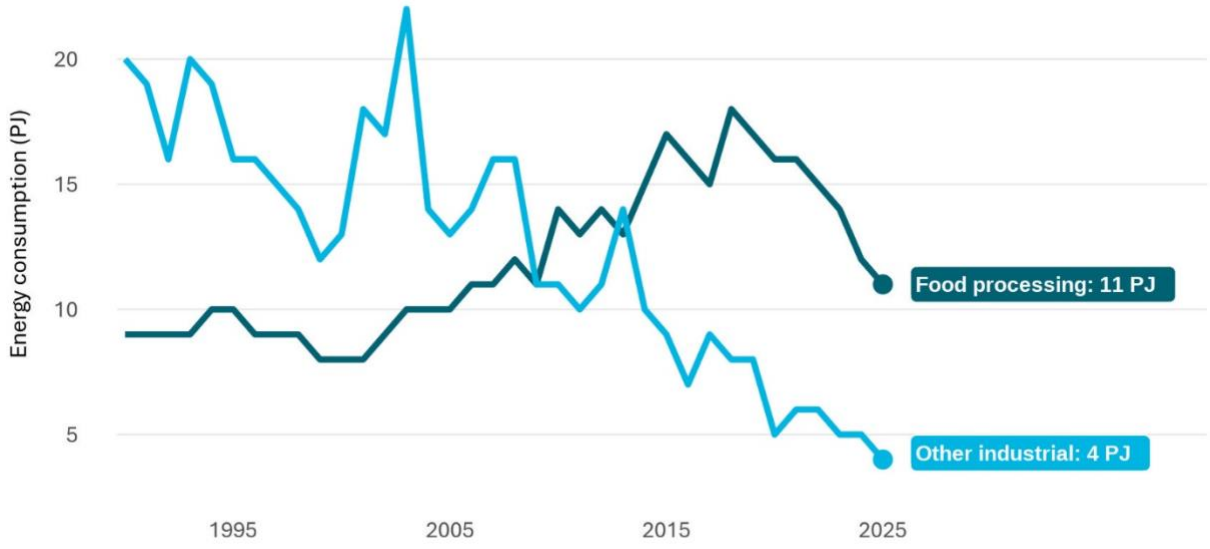


Figure D.3: Coal consumption of the food processing subsector and other industrial sectors by year.

[17] https://www.fonterra.com/nz/en/our-stories/media/fonterra-invests-nzd-75-million-to-expand-butter-production-at-clandeboye.html

E

Gas

Natural gas production continued to decline in 2025, with major gas users responding. Expected production over the coming years indicates supply constraints will continue to impact gas use within New Zealand.

Background

New Zealand's natural gas fields are concentrated around and off the coast of the Taranaki region (Figure E.1). Most of the gas produced by these fields is injected into a transmission network that delivers gas to major centres in the North Island[18]. New Zealand currently has no facilities to import or export natural gas and has limited storage capacity[19], which means that all natural gas produced in the country is used domestically, and that any decline in gas supply is balanced by a decline in demand.

In New Zealand, natural gas is used for several applications, including:

- as a feedstock for chemical processes (that is being used for its chemical properties, rather than being burned for energy)
- for electricity generation
- for high-temperature industrial process heat
- for operating boilers and heaters in hospitals, schools, and other large facilities
- for residential cooking and heating.

One of the largest users of natural gas in New Zealand is Methanex, which uses natural gas as both a feedstock to produce methanol and a source of energy. While some large users have direct connections through private pipelines to natural gas fields, most users draw natural gas from the transmission network.

[18] The South Island has no natural gas transmission network.

[19] New Zealand's only large-scale natural gas storage facility is at Ahuroa.

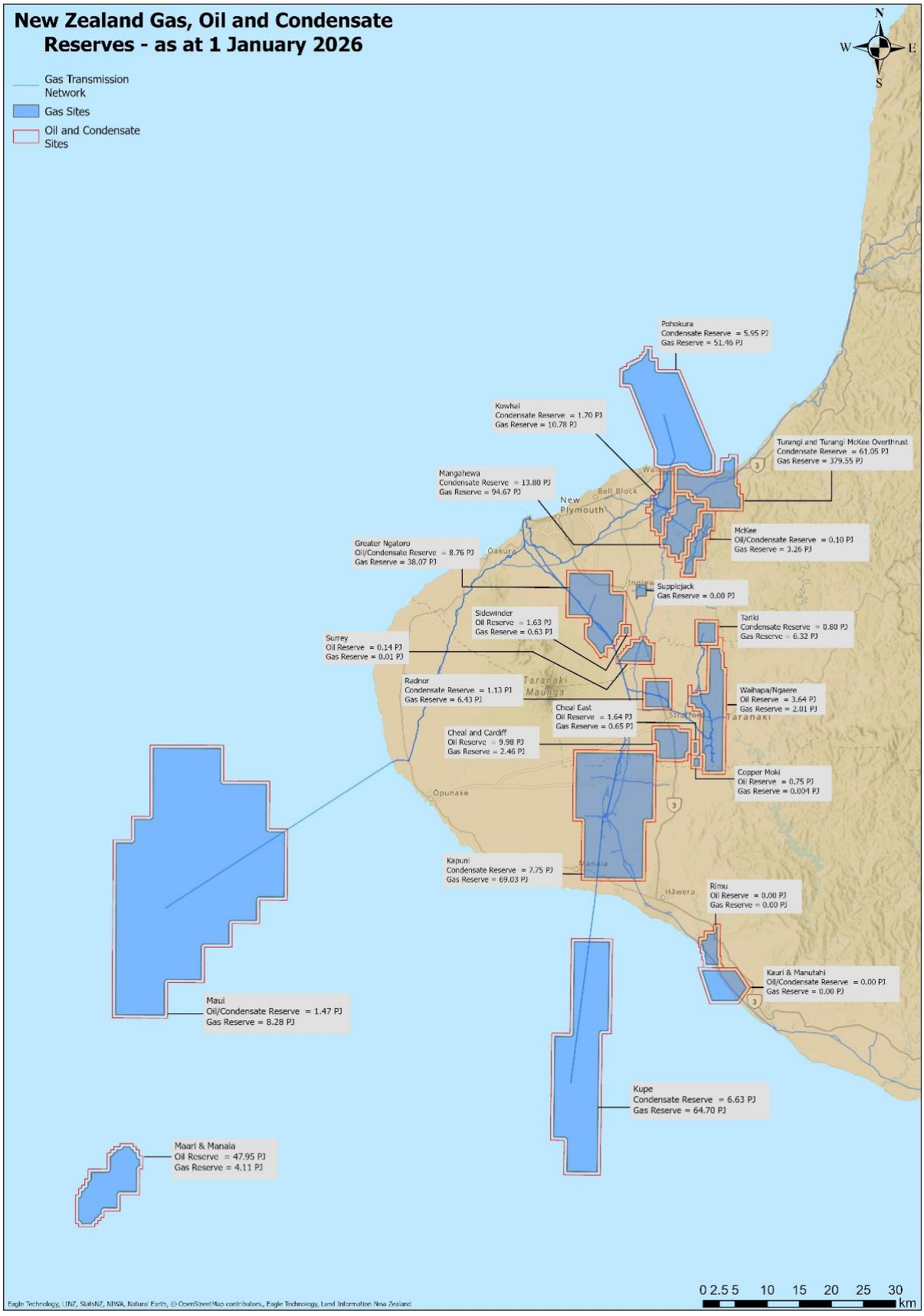


Figure E.1: A map of crude oil and natural gas fields in New Zealand, with remaining reserves indicated.

National gas supply continues to decline

Net production[20] of natural gas in 2025 was 102 PJ, a decrease of 14 per cent compared to production for 2024 (120 PJ). This was 4.1 per cent lower than what had been expected in MBIE's published petroleum reserves data (the gas production profile for 2025, as published in June 2025, was 107 PJ).

Contributing to this was several fields underperforming against expectations (Figure E.2), including the Pohokura field, which saw its production affected by the underperformance of the POW-5 offshore well (which had started production in March 2025). In contrast, the Mangahewa field performed stronger than expected, partially offsetting this general trend.

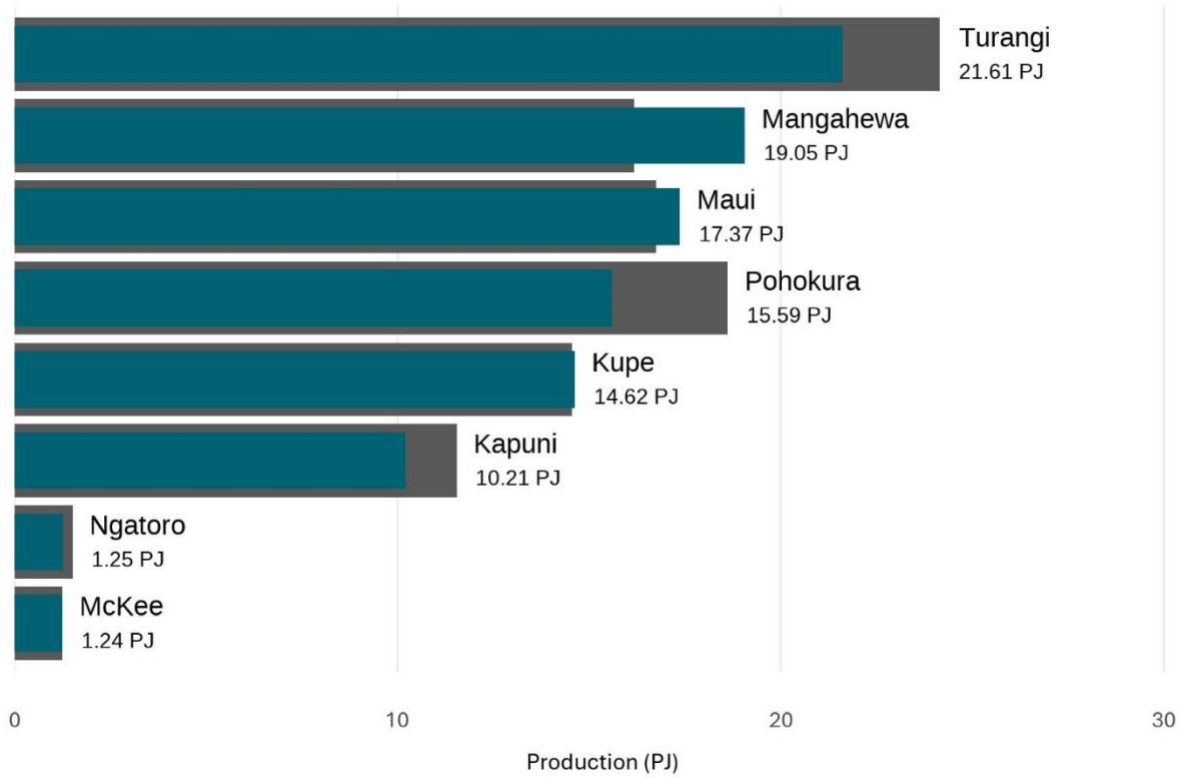


Figure E.2: Net production by field (only showing fields whose annual production in 2025 was greater than 1 PJ). The bars in grey show the expected production for the year based on production profiles, released as part of MBIE's petroleum reserves publication.

This decrease in gas production is part of a long-term trend seen for both gas and oil, driven by falling production from ageing fields (Figure E.3). Gas forms an important part of New Zealand's energy sector through being a useful source of energy and feedstock for several industrial processes, as well as a key fuel source for dry-year electricity generation. In

[20] Net production is calculated as the total amount of gas extracted, minus gas flared, reinjected, and extracted as LPG.

addition, New Zealand does not currently have the facilities to import natural gas, meaning any shortfall must be made up through alternative fuels.

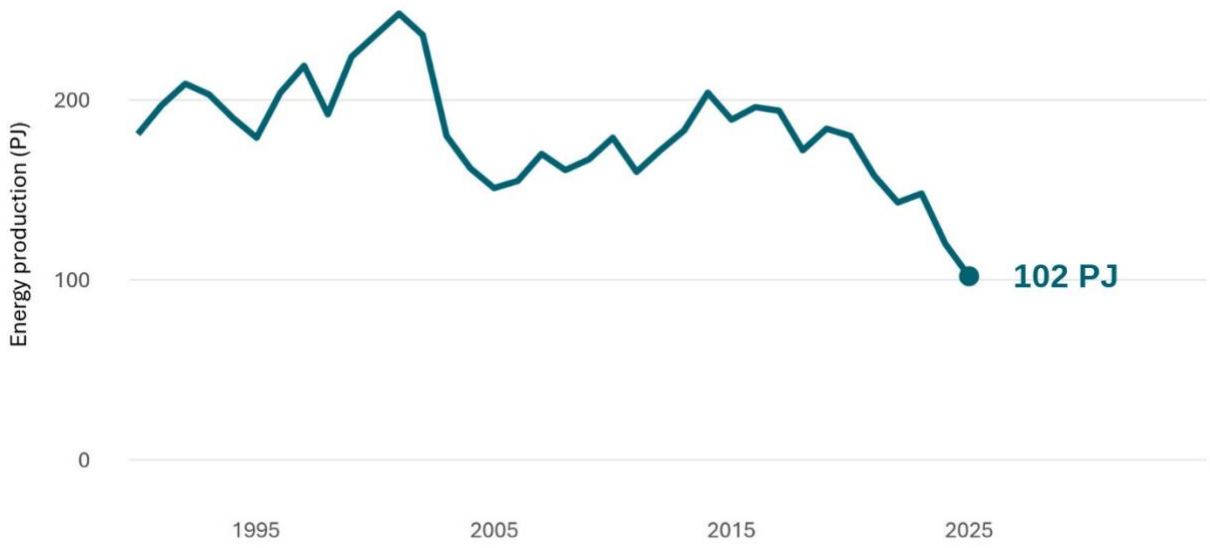


Figure E.3: Net gas production per year.

Lower domestic gas supply continues to impact major users

Total gas use in 2025 (equal to the sum of electricity generation, cogeneration, non-energy use, and consumption) was 105 PJ, a decrease of 10 per cent on the same figure in 2024 (118 PJ). This decrease was mainly driven by decreases in electricity generation (both main activity generation and cogeneration) and chemical sector use (Figure E.4).

Anticipating higher gas demand for electricity generation during a potential dry winter, Methanex paused methanol production for eight weeks in May 2025 to free up gas for the electricity market. This pause resulted in a drop in the total chemical sector use for the year. Genesis Energy ended up prolonging its usual one-month shutdown of its Unit 5 gas turbine at Huntly Power Station to free up gas for Ballance and other industrial gas users.

This is not the first time that Methanex has paused production to free up gas use for other consumers. The company idled its production facilities between August and October 2024 to free up gas supply for electricity generation. These pauses in production have resulted in a sharp decrease in the amount of gas used in the chemical sector in recent years.

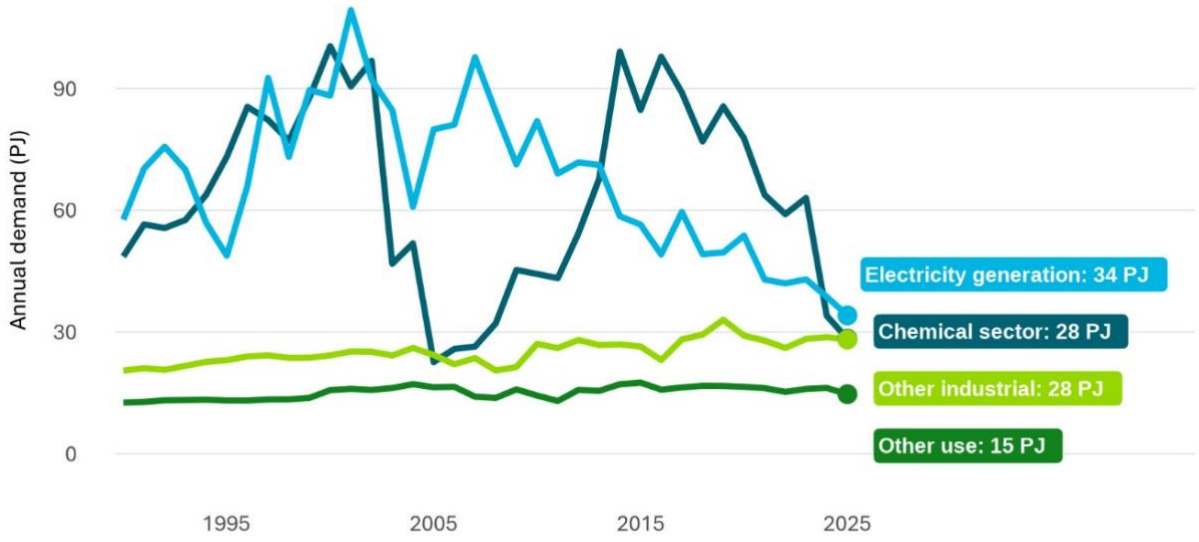


Figure E.4: Annual demand by sector. "Chemical sector" includes both consumption allocated to the chemical sector, and non-energy use. "Electricity generation" includes main activity generation and cogeneration.

Reserves data indicates a low-gas future

Natural gas reserves provide an indication of the amount of gas that can be extracted from existing gas fields[21]. New Zealand's natural gas reserves as of 1 January 2026 were estimated to be 731 PJ, a drop of 23 per cent on 1 January 2025 figures. The decline reflected both the amount of natural gas extracted during 2025 and operators' revised reserve estimates. Revisions can occur when operators complete more detailed reservoir surveys or development work that improves their understanding of how much gas can be extracted.

Significant revisions occurred at the Pohokura field (whose reserves dropped due to the poor performance of their POW-5 well) and at the Maui field (which has been signalled as reaching end of life by the end of 2026). In contrast, successful drilling at the Mangahewa field has allowed the promotion of some of the field's previously reported contingent resources to reserves, partially counteracting the downward revisions at other fields. As a result of these revisions, the Turangi field now holds over half of New Zealand's remaining gas reserves (Figure E.5).

[21] All petroleum permit holders are required to submit data on remaining reserves as well as expected future production profiles (a forecast of annual production based on existing development plans and field data) to MBIE on an annual basis, and this data is published as MBIE's Petroleum Reserves data. https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/petroleum-reserves-data

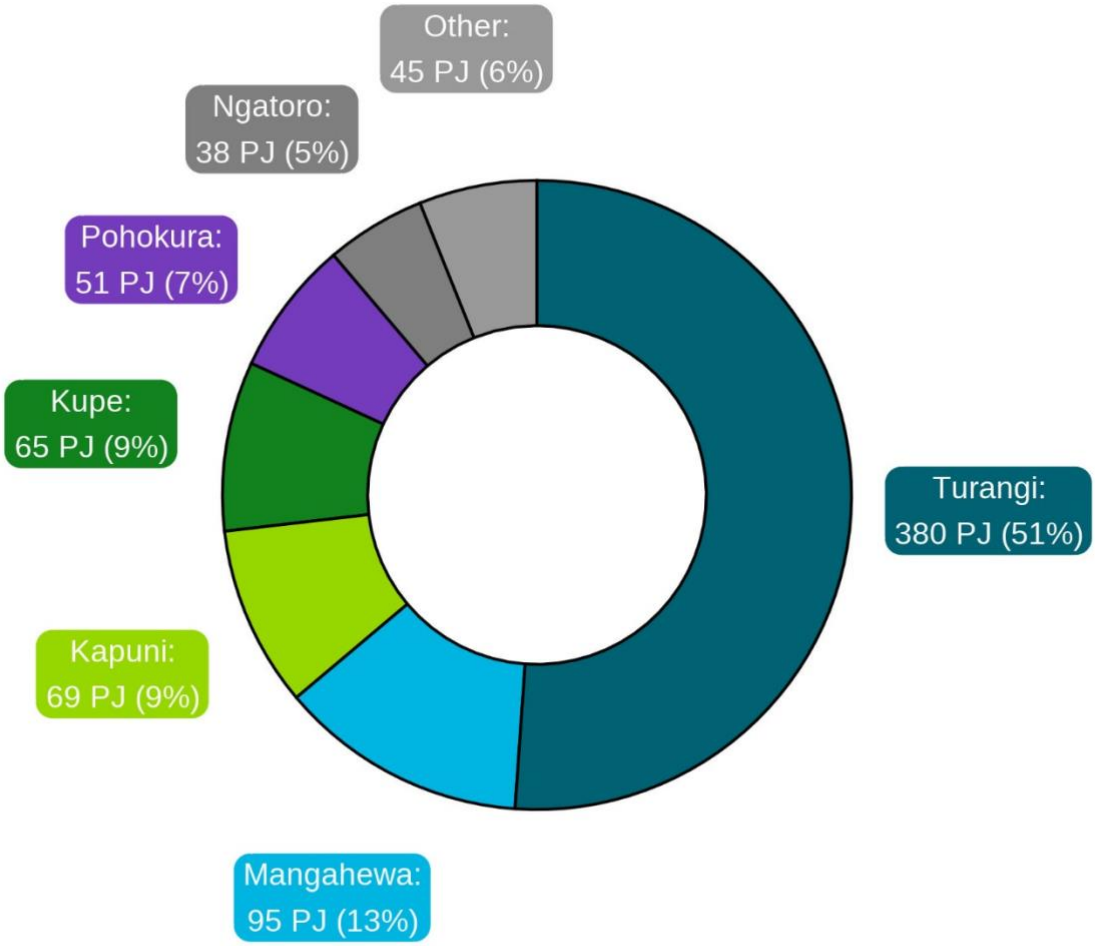


Figure E.5: New Zealand's remaining gas reserves (2P) by field, as at 1 January 2026.

Production profile data shows that these revisions have also had an impact on New Zealand's expected gas supply over the next decade (Figure E.6).

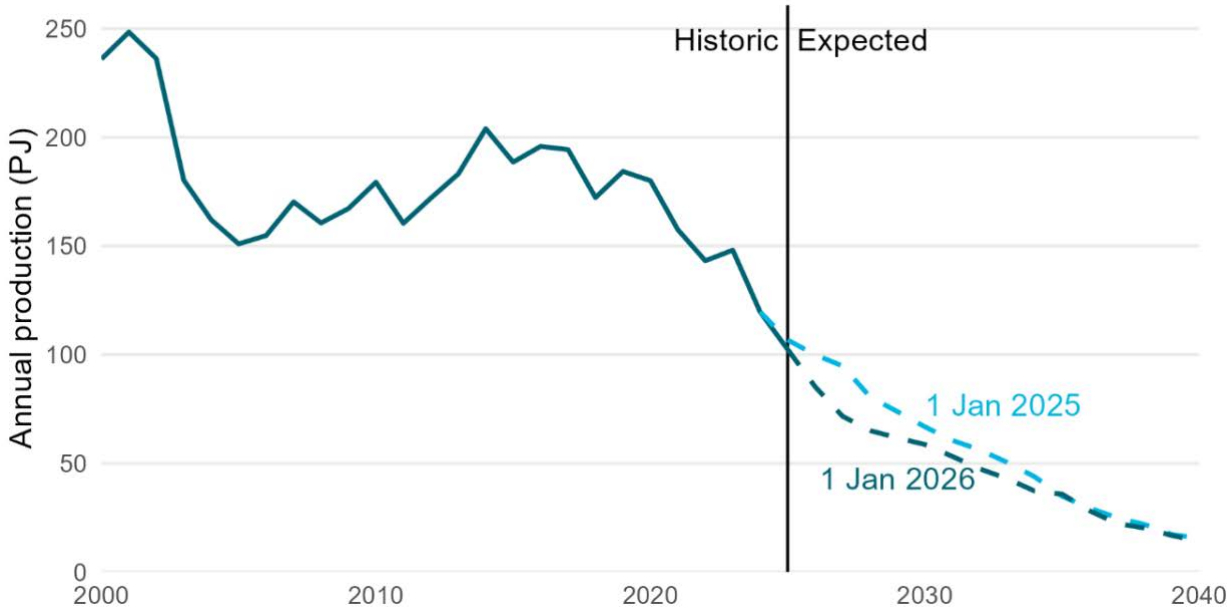


Figure E.6: New Zealand's historic gas production (solid line) and expected future production out to 2040 based on production profile data provided by petroleum permit holders. Expected production as of 1 January 2025 and as of 1 January 2026 are both shown.

F

Oil

While domestic production of oil and LPG continues to decrease, the volume of oil consumed in New Zealand in 2025 stayed relatively steady. Despite geopolitical events in the Middle East, prices remained stable over the course of the year.

Background

Oil can refer to a wide range of different products, including

- crude oil extracted from oil fields
- refined fuels like petrol, diesel, and jet fuel, which are produced through refining crude oil.

New Zealand's crude oil fields are concentrated both within and just off the shore of the Taranaki region (Figure E.1, previous chapter). Crude oil extracted in New Zealand is bound entirely for the export market.

Even when New Zealand had the capacity to refine crude oil, almost all of New Zealand's crude oil was exported as it wasn't suited to onshore refining capabilities. Until 2021, the country's sole refinery operated at Marsden Point, north of Auckland. This refinery produced several types of refined fuels (mainly petrol, diesel, and jet fuel) from imported crude oil, usually sourced from the Middle East. On 31 March 2022 the refinery shut down for economic reasons and the facility switched to operating solely as a fuel import terminal.

Since the closure of the Marsden Point refinery, New Zealand's imports of crude oil have dropped to zero, with imports of refined products rising to cover the shortfall. Five companies currently import fuel for sale in New Zealand: Z Energy, BP, Mobil, Gull, and Tasman Fuels/Timaru Oil Services Limited (TOSL). These companies sell fuel both directly to consumers and to independent fuel distributors/retailers.

Crude oil production and exports continue to decline

Crude oil production for 2025 totalled 31.3 PJ, a decrease of 2.9 per cent on production for 2024 (32.2 PJ). This decrease was driven by declines across most fields (Figure F.1). However the Maari and Turangi fields both reported increases in crude oil production (up 0.88 and 1.41 PJ respectively), somewhat offsetting the trend observed in other fields.

Crude oil extracted in New Zealand is bound entirely for the export market. As a result, crude oil exports fell 0.6 per cent or 0.20 PJ compared to 2024 levels.

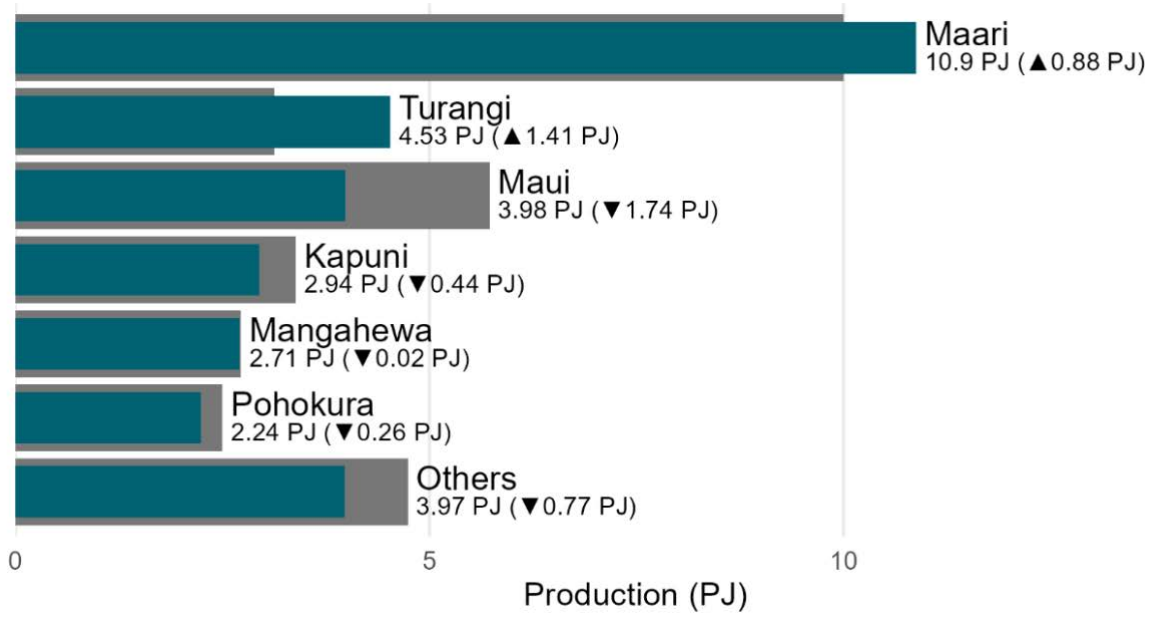


Figure F.1: Crude oil production by field. The teal bar shows the production for 2025, while the grey bar shows the production for 2024. The captions show year-on-year change in production.

Liquefied petroleum gas (LPG) production for 2025 totalled 5.89 PJ, a decrease of 15 per cent on 2024 production (6.91 PJ). LPG production within New Zealand is concentrated on a much smaller set of fields and has been particularly impacted by the decrease in production at Maui field (Figure F.2).

In 2025, 62 per cent of New Zealand's LPG supply came from indigenous production, as opposed to imports (Figure F.3). This figure has been gradually decreasing since the mid-2010s, when domestic production met almost all of New Zealand's demand. As production has dropped, imports have increased to meet a relatively steady demand. LPG imports for 2025 totalled 3.55 PJ, an increase of 15 per cent on 2024 imports.

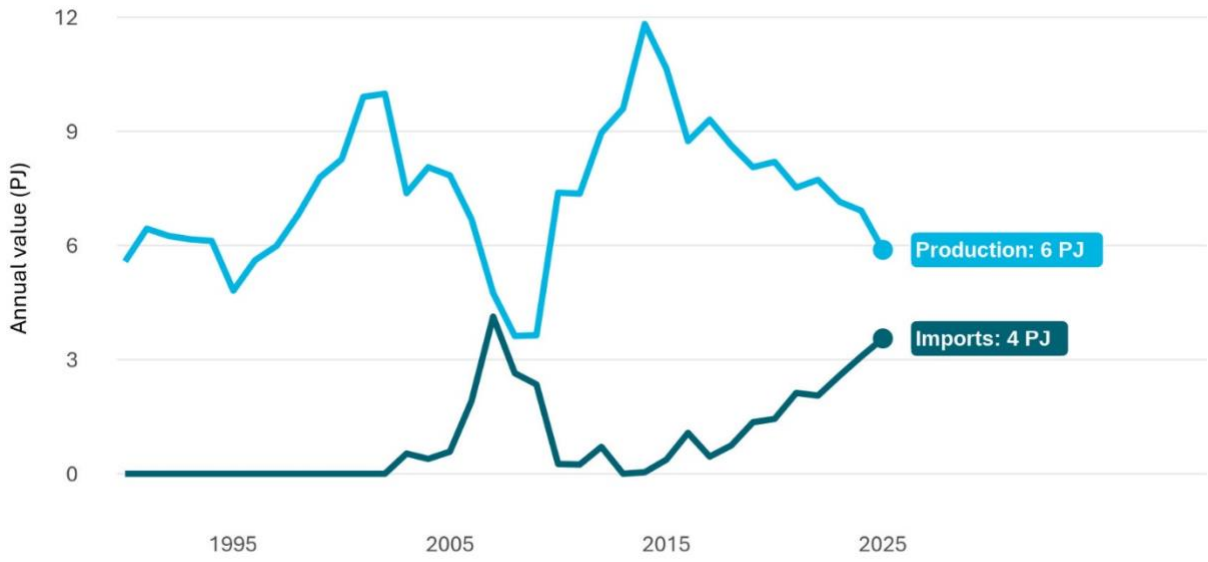


Figure F.2: LPG production and imports, per year since 1990.

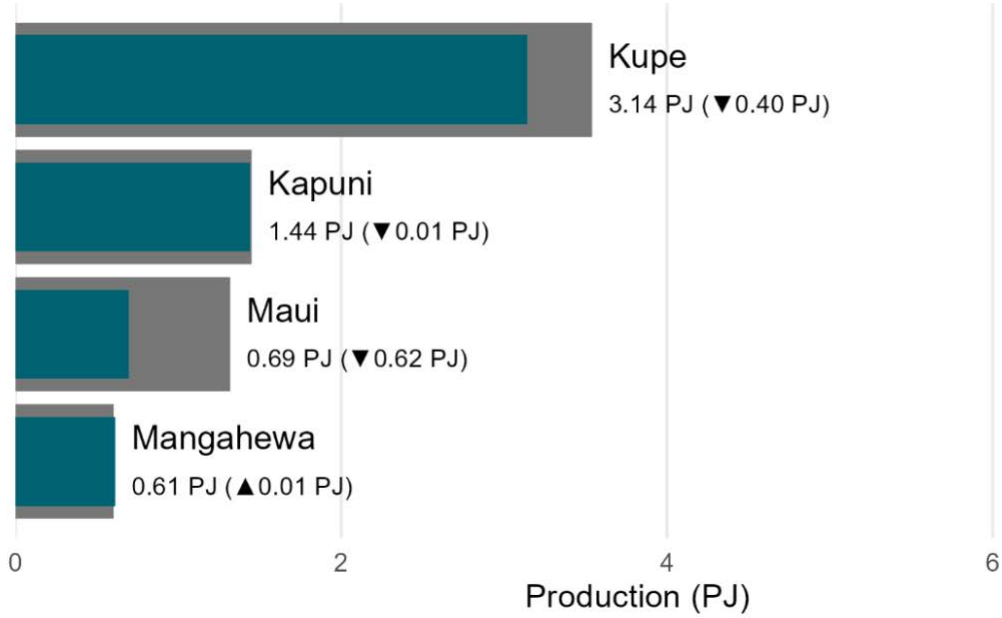


Figure F.3: LPG production by field. The teal bar shows production for 2025, while the grey bar shows production for 2024. The captions show year-on-year change in production.

The decline in crude oil and LPG production reflects falling output from ageing oil and gas fields, many of which are approaching the end of their operational life. This is a long-term trend that we have observed since around 2007 (Figure F.4).

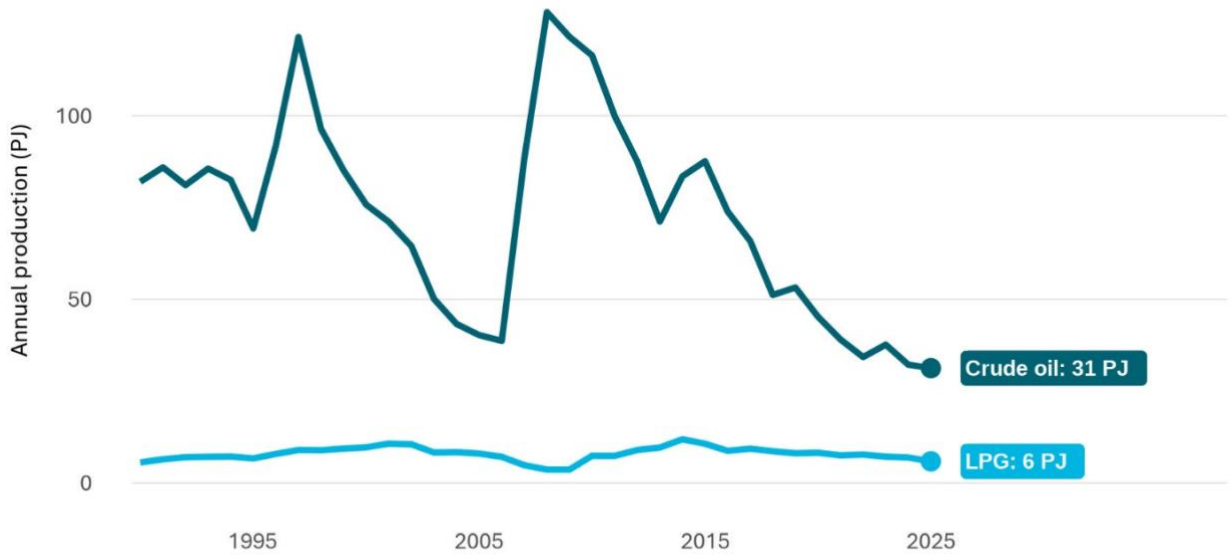


Figure F.4: Crude oil and LPG production over time.

Imports and consumption remain steady

Oil imports for 2025 totalled 340 PJ, an increase of 0.5 per cent on 2024 figures (338 PJ). Diesel continues to be New Zealand's largest import, comprising 45 per cent of all oil imports, followed closely by petrol (30 per cent) and jet fuel (19 per cent).

Since the closure of the Marsden Point refinery, New Zealand has imported all its refined petroleum products, mainly from Asian countries such as South Korea, Singapore, and Malaysia (Figure F.5; values based on Stats NZ overseas merchandise trade datasets). However, the contribution of countries differs across fuel types. For example, Japanese refineries supply around 10 per cent of New Zealand's diesel, but very little jet fuel or petrol, while Malaysian refineries supply much more petrol to New Zealand than any other fuel.

The Twelve-Day War between Israel and Iran in June 2025 threatened to impact global oil supply. However, this conflict had little effect on New Zealand's imports of refined products, with the International Energy Agency concluding that the conflict had no impact on Iranian oil flows[22].

The total domestic consumption of oil for 2025 was 271 PJ, a decrease of 0.3 per cent on consumption for 2024 (272 PJ). A small decrease in petrol use (down 0.9 per cent or 0.96 PJ) was partially offset by increased diesel consumption (up 0.3 per cent or 0.40 PJ). Domestic transport accounts for the vast majority (76 per cent) of oil products use in New Zealand, with the remainder split between the residential (8.1 per cent), agricultural (6.4 per cent),

[22] https://www.iea.org/reports/oil-market-report-june-2025

industrial (6.1 per cent) and commercial (2.9 per cent) sectors. Sectoral consumption trends have stayed relatively steady over the past decade, with very little change observed between 2024 and 2025.

Minimum stockholding obligation

In 2023 the Government amended the Fuel Industry Act 2020 to require fuel industry participants who meet certain criteria to keep a minimum amount of fuel on hand within New Zealand's Exclusive Economic Zone. This obligation came into force on 1 January 2025 and requires obligated parties to report to MBIE on the amount of fuel they hold each month.

More information is available on MBIE's website: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-generation-and-markets/liquid-fuel-market/fuel-security-in-new-zealand/minimum-stockholding-obligation

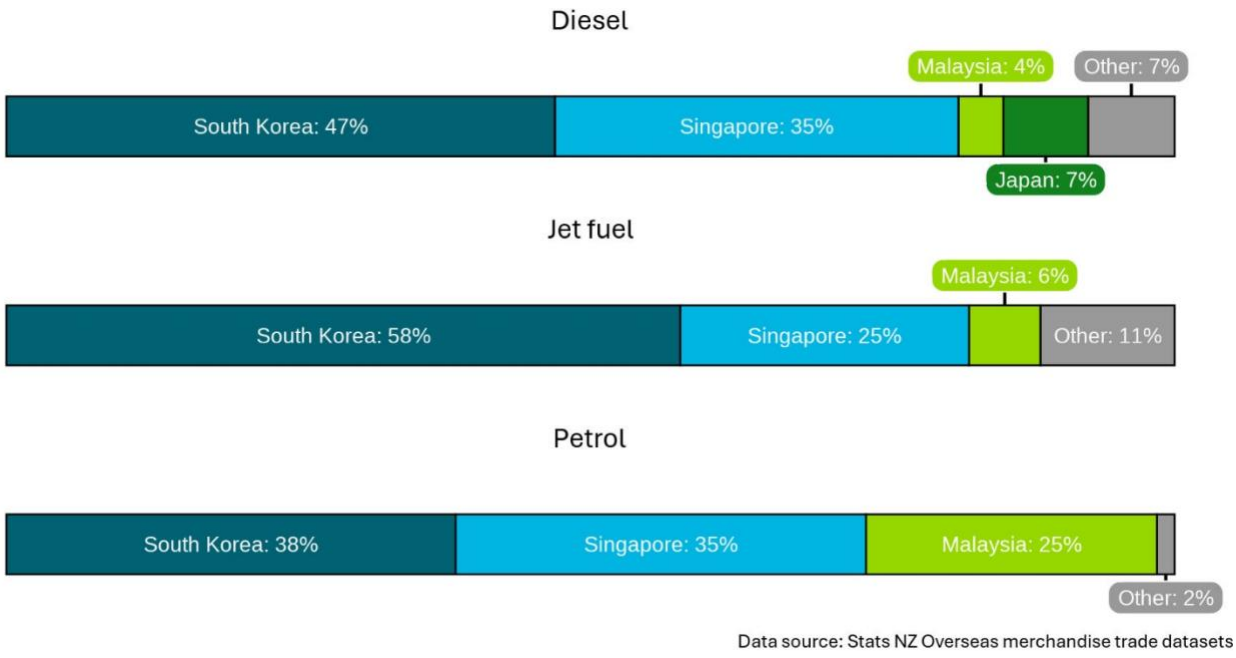


Figure F.5: Oil imports in 2025, by fuel and country of origin. Data source: Stats NZ Overseas merchandise trade datasets.

Fuel prices remain steady

Petrol prices for the final quarter of 2025 were 279.60 cents per litre (c/L)[23] for premium petrol and 260.60 c/L for regular petrol, a decrease of 1.0 per cent and 0.8 per cent respectively (when adjusted for inflation) on prices for the same quarter of the previous year. In contrast, diesel prices for the final quarter of 2025 were 212.68 c/L for retail consumer and 165.72 c/L for commercial consumers, an increase of 1.8 per cent and 0.8 per cent respectively on prices for the same quarter of the previous year (Figure F.6).

The average Dubai crude oil price for the year decreased from NZ$132 per barrel in 2024 to NZ$120 per barrel in 2025, reducing fuel import costs and placing downward pressure on domestic fuel prices. One factor contributing to this decline was an agreement by eight OPEC+ members to gradually unwind voluntary production cuts between April 2025 and September 2026 to increase global oil supply.

Partly offsetting this was the United States' widespread imposition of tariffs and the resulting retaliatory tariffs imposed by other countries, contributing to increased international fuel prices over the first half of the year. Shipping costs also increased in the latter half of the year, particularly for Asian refineries, due to increased sanctions against various oil-producing countries (including Russia, Iran, and Venezuela).

Figure F.6: Quarterly fuel prices over time, adjusted for inflation. All values are in December 2025 prices.

[23] All prices quoted in this section are adjusted for inflation, and expressed as December 2025 values.

G

Balance tables

New Zealand's energy production comes from both renewable and non-renewable sources. The energy balance tables are an international accounting framework, used to show how energy supply and demand by sector varies by energy type.

Background

Domestic energy supply is derived from either indigenous production or imported from overseas sources. In turn, energy types can be transformed into different forms of energy at the cost of losses and inefficiencies, which vary by the transformation process used. Supply, demand, losses, and inefficiencies are reflected in balanced energy supply and demand tables.

Both the energy supply and demand sections of the energy balance tables are calculated from surveys that span different sources. An imbalance exists between demand calculated from reported supply data, and demand observed from reported consumption data.

Energy supply

Total primary energy supply (TPES) is the amount of energy available for use in New Zealand. Much of it is converted into other forms of energy before it is used.

By convention, fuel used for international transport is excluded from TPES. International transport includes international sea and air transport but excludes coastal shipping, national air transport, and all land transport.

Indigenous natural gas production does not include natural gas that is flared, reinjected, or extracted as LPG.

The primary energy figures presented are actual data, except for some that go into electricity generation as detailed under energy transformation.

Energy transformation

Energy transformation includes:

- generation of electricity, including cogeneration
- oil production, including refinery operations and the manufacture of synthetic fuel from natural gas[24]
- other transformation, primarily in the production of steel.

In the Energy Transformation section of the balance tables, ‘energy in’ is shown as negative values and ’energy out’ as positive values in the appropriate columns.

[24] Methanex stopped the production of methanol to petrol in April 1999, while Refining New Zealand stopped the production of refined oil products from crude oil in April 2022.

Transformation of energy from one form to another always results in conversion losses, particularly in thermal electricity generation, as much energy is lost as heat. Transformation losses in electricity generation are calculated using the net electricity generated, with the actual input being used where available. Input to electricity generation from biogas, hydro, wind, and waste heat are fully estimated. Quarterly figures for electricity generation are made up of actual data from major generators and the Electricity Authority. Estimates are made where actual data are unavailable at the time of publishing.

Liquid biofuel production (bioethanol and biodiesel) appears as renewable energy supply in the energy balance tables. As bioethanol and biodiesel are generally blended with motor petrol and diesel before consumption, liquid biofuel also appears in Energy Transformation under Fuel Production.

Consumer energy demand

Consumer energy is the amount of energy consumed by final users. It excludes energy used or lost in the process of transforming energy into other forms and in bringing the energy to the final consumers.

Consumer energy statistics can either be calculated from supply-side data or observed from usage data.

- *Consumer energy (calculated)* forms the top half of the energy balance tables. It is calculated as TPES less energy transformation less non-energy use.
- *Consumer energy (observed)* forms the bottom half of the energy balance tables. It represents reported demand in the agricultural, industrial, commercial, transport, and residential sectors. Apart from domestic use of energy for on-road, rail, sea, and air transport in the transport sector, these sectors follow the Australia New Zealand Standard Industrial Classification 2006 definitions. Estimates of on-site cogeneration demand are included in electricity end-use.

Where the energy end-use is not available or confidential, the ‘unallocated’ category is used.

Statistical differences

Statistical differences show the difference between ‘consumer energy (calculated)’ and ‘consumer energy (observed)’. This difference is shown at the bottom of the energy balance tables.

Balance Table

	Oil							
	Crudes/NGL/ Feedstocks	LPG	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	Others	**Total**
Indigenous Production	31.25	5.89						**37.14**
+ Imports	-	3.55	102.07	151.97	8.51	64.28	9.26	**339.65**
- Exports	30.77	-	-	-	-	-	-	**30.77**
- Stock Change	-3.86	0.07	2.17	-1.22	-0.37	0.39	-0.85	**-3.66**
- International Transport	-	-	-	2.42	7.40	51.98	0.30	**62.09**
Total Primary Energy Supply	4.34	9.37	99.90	150.77	1.48	11.91	9.82	**287.59**
Electricity Generation	-	-	-	-0.07	-	-	-	**-0.07**
Cogeneration	-	-	-	-	-	-	-	**-**
Fuel Production	-	-	-	-	-	-	-	**-**
Other Transformation	-	-	-	-	-	-	-	**-**
Losses and own use	-	-	-0.05	-0.01	0.08	-0.27	0.65	**0.40**
Total transformation	-	-	-0.05	-0.08	0.08	-0.27	0.65	**0.33**
Non-energy use	-	-	-	-	-	-	-10.47	**-10.47**
Consumer energy (calculated)	4.34	9.37	99.85	150.69	1.55	11.64	-	**277.44**
Agriculture, Forestry and Fishing		0.12	1.35	14.72	-	-	-	**16.19**
Agriculture		*0.12*	*1.29*	*10.61*	-	-	-	***12.02***
Forestry and Logging		-	*0.01*	*1.92*	-	-	-	***1.93***
Fishing		-	*0.05*	*2.19*	-	-	-	***2.24***
Industrial		3.74	0.04	13.17	0.77	-	-	**17.73**
Mining		-	*0.00*	*5.14*	-	-	-	***5.14***
Food Processing		-	-	-	-	-	-	**-**
Textiles		-	-	-	-	-	-	**-**
Wood, Pulp, Paper and Printing		-	-	-	-	-	-	**-**
Chemicals		-	-	-	-	-	-	**-**
Non-metallic Minerals		-	-	-	-	-	-	**-**
Basic Metals		-	-	-	-	-	-	**-**
Mechanical/Electrical Equipment		-	-	-	-	-	-	**-**
Building and Construction		-	*0.02*	*5.18*	-	-	-	***5.20***
Unallocated		*3.74*	*0.02*	*2.86*	*0.77*	-	-	***7.39***
Commercial		1.78	0.68	5.40	-	-	-	**7.85**
Transport		0.14	83.42	109.98	0.79	13.25	-	**207.58**
Residential		3.79	14.79	3.35	-	-	-	**21.92**
Consumer energy (observed)	-	9.56	100.28	146.62	1.57	13.25	-	**271.27**
Statistical Difference	4.34	-0.19	-0.43	4.07	-0.01	-1.61	-	**6.18**

Balance Table

	Renewables							
	Hydro	Geothermal	Solar	Wind	Liquid Biofuels	Biogas	Solid Biofuels	**Total**
Indigenous Production	87.55	237.46	3.82	13.86	0.01	4.20	47.53	**394.42**
+ Imports		-			-	-	0.12	**0.12**
- Exports		-			-	-	0.00	**0.00**
- Stock Change		-			-	-	-	**-**
- International Transport		-			-	-	-	**-**
Total Primary Energy Supply	87.55	237.46	3.82	13.86	0.01	4.20	47.64	**394.54**
Electricity Generation	-87.55	-229.85	-3.45	-13.86	-	-3.18	-	**-337.89**
Cogeneration	-	-0.18	-	-	-	-0.71	-18.54	**-19.43**
Fuel Production	-	-	-	-	-0.01	-	-	**-0.01**
Other Transformation	-	-	-	-	-	-	-	**-**
Losses and own use	-	-	-	-	-	-	-	**-**
Total transformation	-87.55	-230.03	-3.45	-13.86	-0.01	-3.89	-18.54	**-357.33**
Non-energy use	-	-	-	-	-	-	-	**-**
Consumer energy (calculated)	-	7.43	0.36	-	-	0.31	29.11	**37.21**
Agriculture, Forestry and Fishing		0.45	-		-	-	-	**0.45**
Agriculture		*0.45*	-		-	-	-	***0.45***
Forestry and Logging		-	-		-	-	-	**-**
Fishing		-	-		-	-	-	**-**
Industrial		4.40	-		-	0.05	21.55	**26.00**
Mining		-	-		-	-	-	**-**
Food Processing		-	-		-	-	-	**-**
Textiles		-	-		-	-	-	**-**
Wood, Pulp, Paper and Printing		-	-		-	-	*21.55*	***21.55***
Chemicals		-	-		-	-	-	**-**
Non-metallic Minerals		-	-		-	-	-	**-**
Basic Metals		-	-		-	-	-	**-**
Mechanical/Electrical Equipment		-	-		-	-	-	**-**
Building and Construction		-	-		-	-	-	**-**
Unallocated		*4.40*	-		-	*0.05*	-	***4.45***
Commercial		2.38	-		-	0.26	-	**2.64**
Transport		-	-		-	-	-	**-**
Residential		0.21	0.36		-	-	7.56	**8.13**
Consumer energy (observed)		7.43	0.36		-	0.31	29.11	**37.21**
Statistical Difference	-	0.00	-	-	-	-0.00	-0.00	**-0.00**

Balance Table

	Coal							
	Bituminous	Sub-bituminous	Lignite	**Total**	**Natural Gas**	**Electricity**	**Waste Heat**	**TOTAL**
Indigenous Production	40.64	20.98	4.39	**66.02**	**102.44**		**0.74**	**600.76**
+ Imports	1.14	27.45	0.00	**28.59**	**-**		**-**	**368.36**
- Exports	41.90	0.80	-	**42.70**	**-**		**-**	**73.47**
- Stock Change	-1.23	12.01	-0.04	**10.74**	**-0.58**		**-**	**6.50**
- International Transport	-	-	-	**-**	**-**		**-**	**62.09**
Total Primary Energy Supply	1.11	35.62	4.43	**41.17**	**103.02**		**0.74**	**827.05**
Electricity Generation	-	-11.50	-	**-11.50**	**-25.83**	**155.72**	**-**	**-219.57**
Cogeneration	-	-6.68	-	**-6.68**	**-8.26**	**5.14**	**-0.74**	**-29.97**
Fuel Production	-	-	-	**-**	**-**	**-**	**-**	**-0.01**
Other Transformation	-	-10.39	-	**-10.39**	**-**	**-**	**-**	**-10.39**
Losses and own use	-0.17	-0.31	-	**-0.48**	**-4.35**	**-15.65**	**-**	**-20.09**
Total transformation	-0.17	-28.89	-	**-29.06**	**-38.44**	**145.21**	**-0.74**	**-280.03**
Non-energy use	-	-	-	**-**	**-16.90**	**-**	**-**	**-27.37**
Consumer energy (calculated)	0.94	6.73	4.43	**12.11**	**47.68**	**145.21**	**-**	**519.65**
Agriculture, Forestry and Fishing	0.02	1.27	0.01	**1.30**	**1.19**	**9.40**		**28.52**
Agriculture	*0.02*	*1.27*	*0.01*	***1.30***	***1.19***	***9.05***		***24.00***
Forestry and Logging	-	-	-	**-**	***0.00***	***0.21***		***2.13***
Fishing	-	-	-	**-**	**-**	***0.14***		***2.39***
Industrial	1.54	6.72	4.36	**12.63**	**39.59**	**51.62**		**147.55**
Mining	-	-	-	**-**	***0.03***	***1.83***		***7.00***
Food Processing	*0.37*	*6.02*	*4.31*	***10.70***	***20.50***	***11.86***		***43.07***
Textiles	-	-	-	**-**	***0.28***	***0.46***		***0.74***
Wood, Pulp, Paper and Printing	*0.03*	*0.07*	-	***0.11***	***2.35***	***3.83***		***27.83***
Chemicals	-	*0.01*	-	***0.01***	***11.45***	***1.53***		***12.99***
Non-metallic Minerals	*1.14*	*0.61*	*0.06*	***1.81***	***1.96***	***0.63***		***4.41***
Basic Metals	-	-	-	**-**	***2.30***	***21.56***		***23.86***
Mechanical/Electrical Equipment	-	-	-	**-**	***0.25***	***0.55***		***0.80***
Building and Construction	-	-	-	**-**	***0.38***	***1.40***		***6.99***
Unallocated	-	-	-	**-**	***0.09***	***7.96***		***19.88***
Commercial	0.07	0.12	0.05	**0.24**	**6.96**	**33.60**		**51.29**
Transport	-	-	-	**-**	**-**	**1.42**		**208.99**
Residential	0.01	0.10	0.00	**0.11**	**6.53**	**50.09**		**86.79**
Consumer energy (observed)	1.64	8.21	4.43	**14.28**	**54.26**	**146.12**		**523.15**
Statistical Difference	-0.70	-1.48	0.00	**-2.17**	**-6.58**	**-0.91**	**-**	**-3.49**

Glossary

Baseload generation: Power plants that do not change their electricity generation output quickly. These plants are less flexible with meeting electricity demand.

Calorific value: The amount of energy that can be generated by burning a fuel. Usually expressed in megajoules per kilogram (MJ/kg). A calorific value may either be a gross calorific value (GCV) or a net calorific value (NCV) — see the relevant entries in this glossary.

Capacity factor: A measure of how often an electricity generation plant runs in a period of time. It is calculated as the amount of electricity generated by a plant divided by the maximum amount that could have been generated if it operated continuously at full power in that period of time.

Coal ranks: Used to refer to different types of coal. In New Zealand, we have three main types of coal:

- **Bituminous coal** is the highest rank of coal in New Zealand. Bituminous coal is generally exported for steelmaking.
- **Sub-bituminous coal** is mainly used in heating and electricity generation. In New Zealand, steel can be made using sub-bituminous coal due to the unique processes used at the Glenbrook mill.
- **Lignite**, also known as brown coal, is the lowest grade coal with the least concentration of carbon.

Cogeneration: When electricity plants generate electricity and heat at the same time. Otherwise known as combined heat and power, or CHP.

Conversion efficiency: The amount of energy produced in a transformation process divided by the amount of energy that went into the process.

Conversion losses: The energy lost in transforming one type of energy to another. This is calculated as the difference between the amount of energy that has gone into a transformation process and the amount of energy that has been produced.

Direct use: The use of energy without it first going through a transformation process (such as electricity generation). For example, the use of geothermal energy to heat greenhouses.

Energy consumption: the amount of energy consumed by final users, excluding any energy transformation (eg into electricity) and energy used in its transmission or distribution. Sometimes also referred to as “end use”.

Energy use: The use of fuel to provide energy (for example, burning coal to heat a boiler, or using electricity to power a motor). Sometimes also referred to as "energy end use".

Feedstock: Any raw material used as an input for an industrial process. In New Zealand, natural gas is used as a feedstock to produce both urea and methanol. Use of a fuel as a feedstock is considered to be non-energy use.

Generation capacity: The maximum amount of electricity that can be produced by an electricity generation plant running at full power at a specific point in time.

Grid Exit Point (GXP): A point where electricity leaves the national grid operated by Transpower and enters the local distribution network.

Gross Calorific Value (GCV): The total amount of energy released when combusting a fuel. This value will be higher than a fuel's net calorific value.

Hydro inflows: The volume of water flowing into a hydroelectric reservoir or system from upstream sources such as rivers, rainfall, snowmelt, or other tributaries.

Net calorific value (NCV): The amount of energy that can be recovered when combusting a fuel. Some energy from combustion will always be lost due to heating water vapour and other factors, and the net calorific value takes this into account. This value will be lower than a fuel's gross calorific value.

Non-energy use: The use of energy for purposes other than combustion. This includes, for example, the use of bitumen in the construction of roads and the use of natural gas in ammonia production.

Process heat: The energy used for warming spaces and industrial processes (such as drying milk powder). This is often in the form of steam, hot water, or hot gases.

Reserves (1P, 2P and 3P): The amount of crude oil, LPG, or natural gas that is believed to be available and commercially producible in an oil or natural gas field. These are reported at different levels of confidence or certainty.

- 1P reserves are Proven reserves (both developed and undeveloped). These reserves have a 90 per cent certainty of being produced.
- 2P reserves are the sum of Proven reserves and Probable reserves. These reserves have a 50 per cent certainty of being produced.
- 3P reserves are the sum of Proven reserves, Probable reserves, and Possible reserves. These reserves have a 10 per cent certainty of being produced.

Resources, Contingent (2C): 2C Contingent resources are resources estimated at a particular time to be potentially recoverable but are not yet commercially recoverable. This could be a result of technological barriers or economic factors. It is possible for remaining reserves to be reclassified as Contingent resources (or vice versa) because of changing economic conditions.

Self-sufficiency: A measure of a country's ability to meet its own energy supply requirements and is calculated as domestic production divided by total primary energy supply. A value of 100 per cent indicates that a country produces all the energy it needs, whereas values above or below 100 per cent indicates it is a net exporter or importer of energy, respectively.

Total final energy consumption (TFEC): Energy consumed by end-users such as factories and households.

Total primary energy supply (TPES): The total amount of energy available for use in New Zealand, accounting for domestic production and trade.

Transformation: Any process by which one energy type is transformed into another energy type. For example, the production of electricity by burning coal is a transformation process, as is the conversion of crude oil into petroleum. If an energy type is transformed into a non-energy form, this is instead non-energy use.

Utility-scale solar: Large solar photovoltaic (PV) projects that directly supply an electricity grid or network.

Waste heat: Heat that is generated from a by-product chemical reaction and used to generate electricity.

Conversion equivalents

To convert values from one unit to the other:

1. Find the unit your value is in on the column of the table.
2. Find the unit you wish to convert to in the top row of the table.
3. Multiply your value by the listed amount.

	TJ	PJ	GWh	TWh
Terajoule		0.001	0.2778	0.0002778
Petajoule	1000		277.778	0.2778
Gigawatt hour	3.6	0.0036		0.001
Terawatt hour	3600	3.6	1000	

New Zealand Government
Te Kāwanatanga o Aotearoa

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