



## Renewable share of electricity generation falls to 8-year low

In the second quarter of 2021 the proportion of electricity generation from renewable sources was 74.9 per cent. This is the lowest renewable share since 2013.

While generation from renewable sources like wind, wood, biogas and solar increased from last year, these sources contributed less than 10 per cent of all electricity.

The amount of electricity generated from coal increased over 230 per cent from June quarter last year, resulting in 12.4 per cent of total generation coming from coal. The amount of electricity generated from coal (1,349 GWh) is the highest since the June quarter of 2008.

Factors contributing to this included low hydro lake levels, a geothermal outage and decreases in production from gas. These more than offset a strong quarter for wind generation.

### Dry conditions limited hydro electricity generation

Hydropower schemes are the main source of renewable energy in Aotearoa. Daily storage this quarter was well below historical levels and those seen in 2020. Lake inflows this quarter were similar to those seen in 2020, increasing to meet historical averages in the second half of the quarter. However, the amount of electricity that could be generated from hydro was limited and prompted other sources being increased to ensure security of supply.

### Kawerau outage affects geothermal

The decrease in geothermal generation can be partly attributed to an unplanned outage at the Kawerau Power Station from 7 June to 20 July, due to a mechanical failure. The plant has a capacity of 106 MW.

### Low gas production following tight supply from Pohokura

This quarter saw the lowest domestic gas production since March 2011, which reflects tightened gas supply. Reduced production is mostly due to ongoing deliverability issues at New Zealand's largest gas producing field, Pohokura. In previous periods of low hydro generation, a larger proportion of net gas production was used for electricity generation. Thirty-three per cent of the net production of gas was used for electricity in 2010-2013, compared to 23 per

Electricity Generation for the June Quarter 2021

Source	Electricity generation (GWh)	Share (per cent)	Change on last year (per cent)	Change on last year (GWh)
Hydro	5,372	49.3	-5.3	-298
Geothermal	1,908	17.5	-5.3	-106
Wind	652	6.0	23.4	124
Wood	116	1.1	-1.4	-2
Biogas	70	0.6	1.4	1
Solar	38	0.4	27.4	8
<b>Total renewable generation</b>	<b>8,156</b>	<b>74.9</b>	<b>-6.1</b>	<b>-272</b>
Coal	1,349	12.4	238.2	950
Gas	1,365	12.5	-13.0	-205
Oil	15	0.1	380.9	12
Waste heat	10	0.1	0.0	0
<b>Total Electricity generation</b>	<b>10,895</b>	<b>100.0</b>	<b>4.7</b>	<b>485</b>

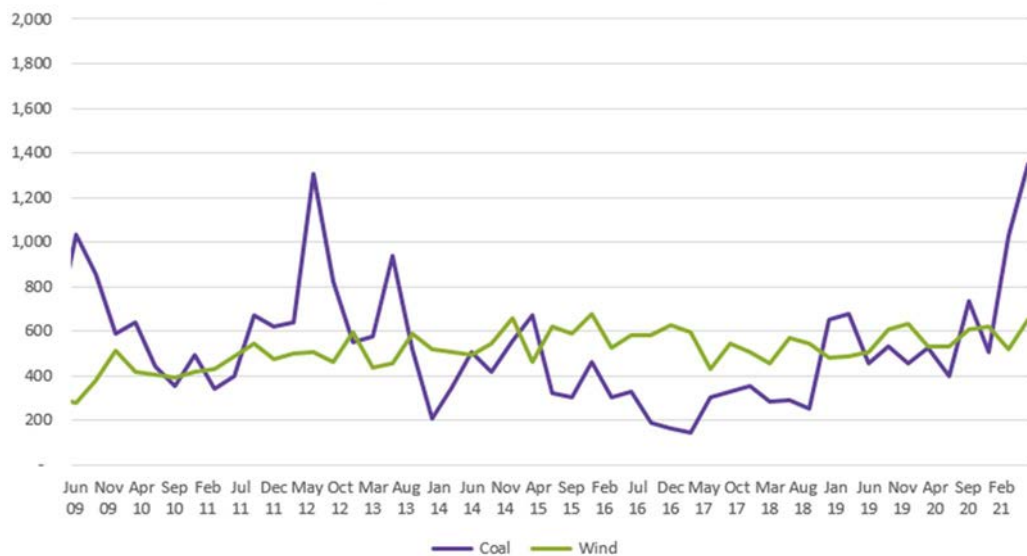


cent in 2017-2020. This quarter, the proportion of gas used for electricity generation was 25 per cent.

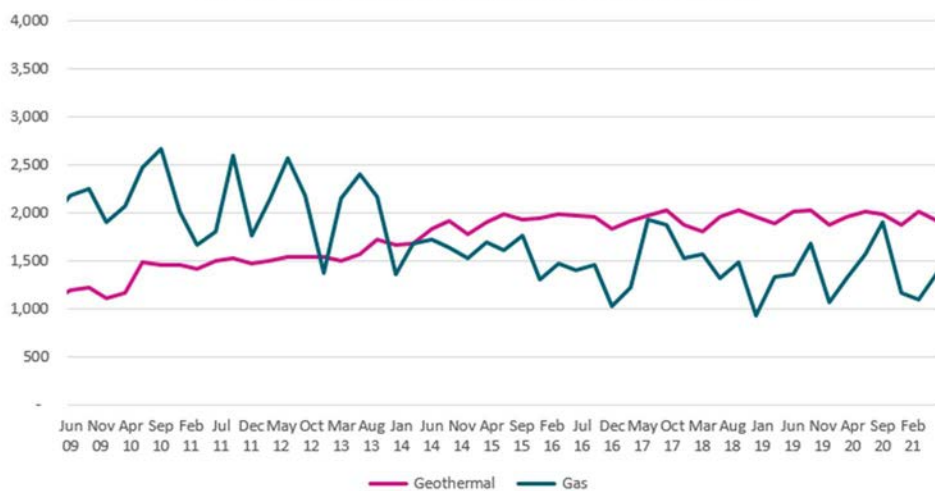
### Wind picks up power

The capacity for generating electricity from wind is growing in Aotearoa. The Waipipi Wind Farm in South Taranaki was completed in March 2021. This contributed to the June quarter 2021 having the third highest ever generation from wind, at 652 GWh, and the highest for a June quarter. The turbines at Waipipi have a capacity of 133 MW, and it is estimated that the average annual generation will be 455 GWh<sup>1</sup>.

Electricity generated from wind and coal (GWh)



Electricity generated from gas and geothermal (GWh)



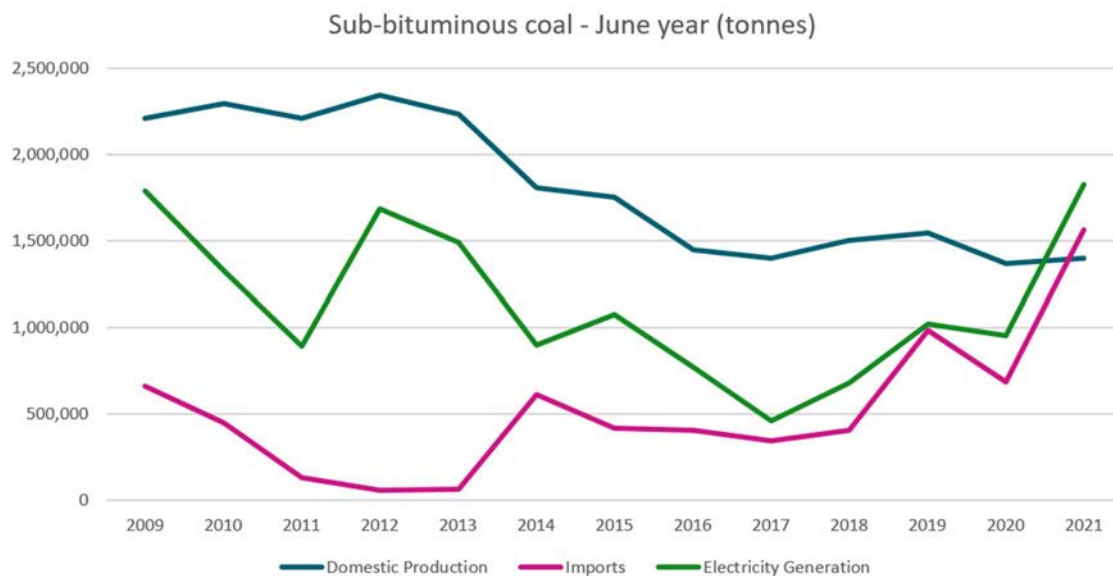
<sup>1</sup> [https://www.tiltrenewables.com/documents/701/Waipipi\\_Wind\\_Farm\\_Update\\_5\\_March\\_2021.pdf](https://www.tiltrenewables.com/documents/701/Waipipi_Wind_Farm_Update_5_March_2021.pdf)



## Coal imports hit record high

The amount of coal being burned for electricity generation has spiked this year. Domestic production of sub-bituminous coal, used in electricity generation, has generally decreased over the last decade. This quarter saw imports hit a record high; over 630,000 tonnes of sub-bituminous coal was imported.

Coal use for electricity generation has spiked in previous years when generation from other sources was insufficient. The June years for 2012, 2013 and 2021<sup>2</sup> give examples of instances where generation from coal has increased to meet electricity demand. For June year 2012 and 2013 domestic production was sufficient to meet demand, but in June year 2021, decreased domestic production was supplemented by higher imports.



<sup>2</sup> June years describe the total amount of coal for the four quarters to June. For example, June year 2012 includes Q3 2011, Q4 2011, Q1 2012 and Q2 2012.

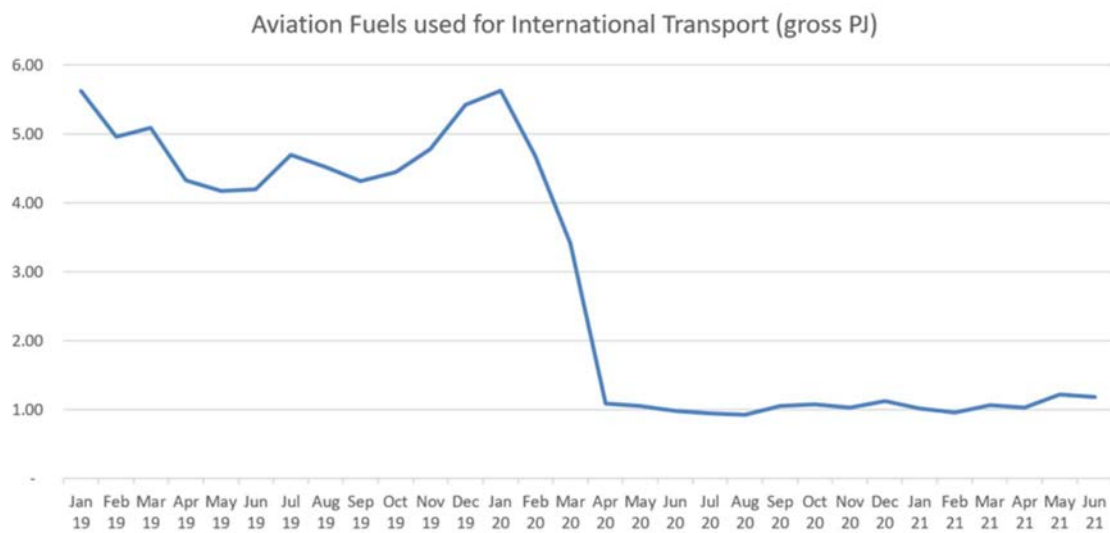


## Lift off for Trans-Tasman Bubble

The Trans-Tasman travel bubble between Australia and Aotearoa opened on April 19 2021<sup>3</sup>. Prior to this, international flights had only been used for transporting goods or for a limited amount of passenger journeys since March 2020.

A slight increase in international aviation fuel use can be seen from the travel bubble opening, but it still remains far below pre-COVID levels. June quarter 2021 was 73 per cent lower than the same time in 2019, with a difference of 9.26 gross PJ.

The use of aviation fuels for domestic flights increased 10 per cent from the first to the second quarter of 2021. Both tourists from Australia, and increasing numbers of New Zealanders travelling could have influenced this increase. It also appears that aviation fuels for domestic transport have almost returned to pre-COVID levels. The difference in aviation fuel use for domestic transport when comparing June quarter 2019 to June quarter 2021 is 0.07 gross PJ.



<sup>3</sup> At the time of publication, the Trans-Tasman bubble was closed.

<https://www.beehive.govt.nz/release/trans-tasman-travel-window-close-midnight-tomorrow>