Overview of the New Zealand Energy Market

An EY report prepared for Invest NZ

February 2026

The better the question. The better the answer. The better the world works.

EY Parthenon

Shape the future with confidence

Contents

Summary

- New Zealand is projected to experience a 65% increase in electricity demand by 2050, with even greater growth possible if export opportunities are fully realized.
- The country boasts world-class wind and solar resources, with offshore wind capacity factors of up to 65%.
- New Zealand's electricity market is open access and well-established, supported by active and liquid hedging markets.
- There is strong bipartisan support for achieving net zero emissions by 2050, along with a shared commitment to expanding renewable energy generation, fostering a stable investment environment.
- More than NZ$40 billion worth of renewable energy projects have been announced nationwide.

1 Why invest in the New Zealand energy sector?

Why invest in the New Zealand energy sector?

- NZ is a global renewable energy leader
- World-class wind and accessible solar resource
- Large untapped renewable development potential
- Strong long-term electricity demand growth outlook – with industrial electrification opportunities
- Clear investment opportunities in firming capacity, storage, and flexible energy solutions
- Stable, transparent, and well-regulated investment environment

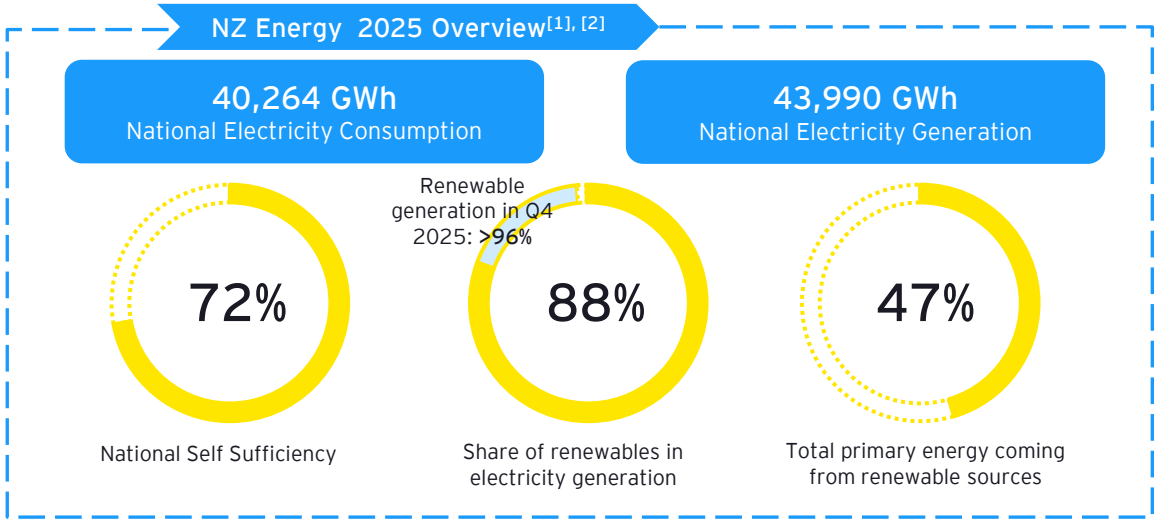
New Zealand is a global leader in renewable electricity generation with 86% renewables

Energy Overview

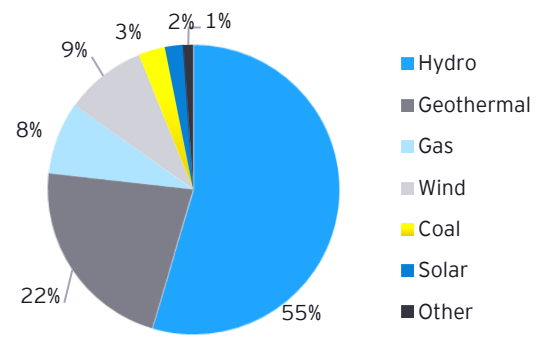
- New Zealand is a net importer of energy but has a high degree of energy independence with a self-sufficiency index of 72% in 2025.[1] While it exports coal, gas (in the form of methanol) and oil, electricity and biomass supply is indigenous and refined petroleum products are imported.
- About 47% of New Zealand's total energy supply is derived from renewable sources, a notable contrast to the 13% average observed among OECD member countries.

Electricity Outlook

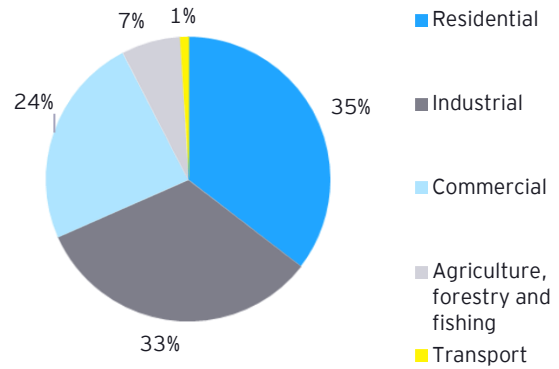
- In 2025, New Zealand's total electricity consumption was relatively stable compared to the previous year, at 40,264 GWh.
- The majority of electricity generation is from renewable sources, particularly hydroelectricity and geothermal. Stronger hydro output, alongside continued increases in solar and geothermal generation, lifted the renewable share of electricity generation to more than 96% for the period from October to December 2025 – a record high.[1][3]
- New Zealand ranks among the top countries globally in terms of the proportion of electricity generation sourced from renewables. In contrast, Australia's share of electricity generation from renewables is below 40%, while the OECD average for renewable energy mix stands at 34%.[4]
- Residential electricity consumption remained higher than the industrial sector, continuing as the largest consumer of electricity at 35%. This was due to the continued steady growth in the number of residential users, combined with a decline in industrial consumption.



Electricity generation, 2025[1]



Electricity consumption by sector, 2025[1]



Source: [1] MBIE - Energy Statistics, [2] Electricity Authority - EMI (market statistics and tools), [3] Transpower Market Operations Report, [4] OECD Generation

EY Parthenon

The ‘Roaring Forties’ make New Zealand rich in wind potential while land for solar PV is accessible

Onshore wind resource is superior:

- New Zealand stands out with a significantly superior wind resource, as over 20% of its land boasts a high wind power density, in contrast to the global average of only 5%. This positions New Zealand as a preferred destination for onshore wind projects.[1]
- Located in the 'Roaring Forties', New Zealand benefits from strong, consistent westerly winds.

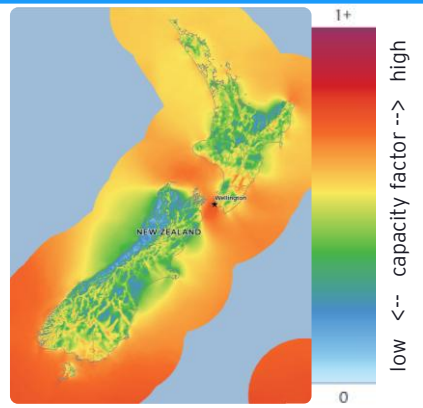
Offshore wind capacity factors are best in class:

- New Zealand boasts one of the world's highest capacity factors for offshore wind, ranging between 50% and 65%.[2]
- While offshore wind is well established globally, New Zealand remains pre-construction, offering investors a clear first-mover opportunity to secure early positions as the regulatory framework and project pipeline emerge.
- An extensive shallow continental shelf close to shore supports both fixed-bottom and floating offshore wind.

Solar PV potential is high due to resource accessibility:

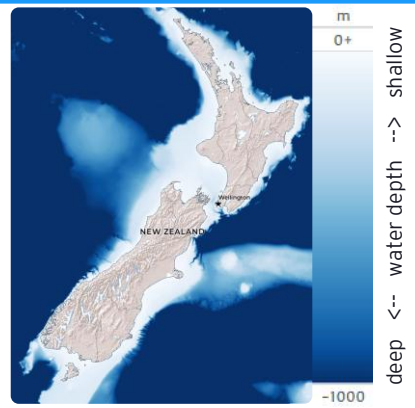
- Across the country the average theoretical Solar PV generation potential is moderate at around 3.540 kWh/m^2.[4]
- 39% of New Zealand’s assessed land area is categorised as “Level 2” (the level with the most practical potential), with an average photovoltaic power output of 3.47 kWh/kWp.
- Despite not having the highest global solar potential, New Zealand's solar energy is competitive with an LCOE of 70-95 NZ$/MWh for utility-scale PV.[5]

Offshore Annual Energy Yield Capacity Factor

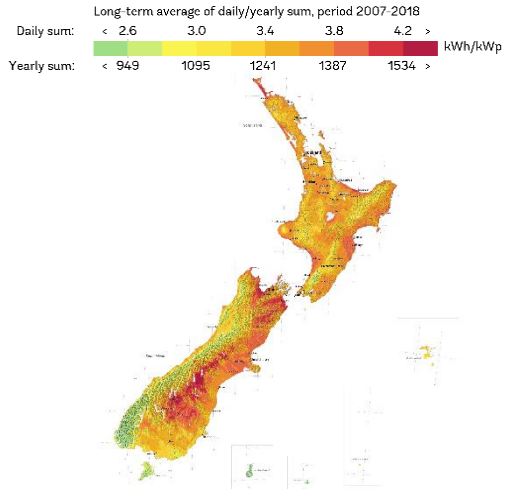


New Zealand’s capacity factor of 50%-65% is amongst the best in the world, reflecting the potential for high offshore wind energy yield [3].

Bathymetry of seabed surrounding New Zealand



New Zealand is surrounded by a relatively shallow seabed, supporting the development of offshore wind generation[3].



kWh/kWp	38.8 %	41.5 %	100.0 %	of evaluated area
over 4.0	2.8 %	3.4 %	4.9 %	
4.0 — 3.8	7.4 %	8.1 %	12.0 %	
3.8 — 3.6	13.9 %	14.5 %	23.7 %	
3.6 — 3.4	11.1 %	11.5 %	24.6 %	
3.4 — 3.2	3.2 %	3.4 %	15.8 %	
3.2 — 3.0	0.5 %	0.5 %	7.9 %	
3.0 — 2.8	0.1 %	0.1 %	4.4 %	
2.8 — 2.6	0.0 %	0.0 %	3.1 %	
2.6 — 2.4	0.0 %	0.0 %	1.7 %	
below 2.4	0.0 %	0.0 %	1.9 %	

Practical potential: Level 2 Level 1 Level 0

World Bank’s Global Solar Atlas Indicating New Zealand’s Potential Photovoltaic Power Output[4]. Level 0 overlooks any impediments to solar power plant development, Level 1 excludes unsuitable land areas (rugged terrain, urbanized zones, etc), Level 2 adds "soft" constraints (e.g. regulatory limitations).

Source: [1] New Zealand Energy Profile – IRENA, [2] Offshore Wind Capacity Factors – IEA, [3] Global Wind Atlas, [4] World Bank Global Solar Atlas, [5] Meridian Investor Day Presentation

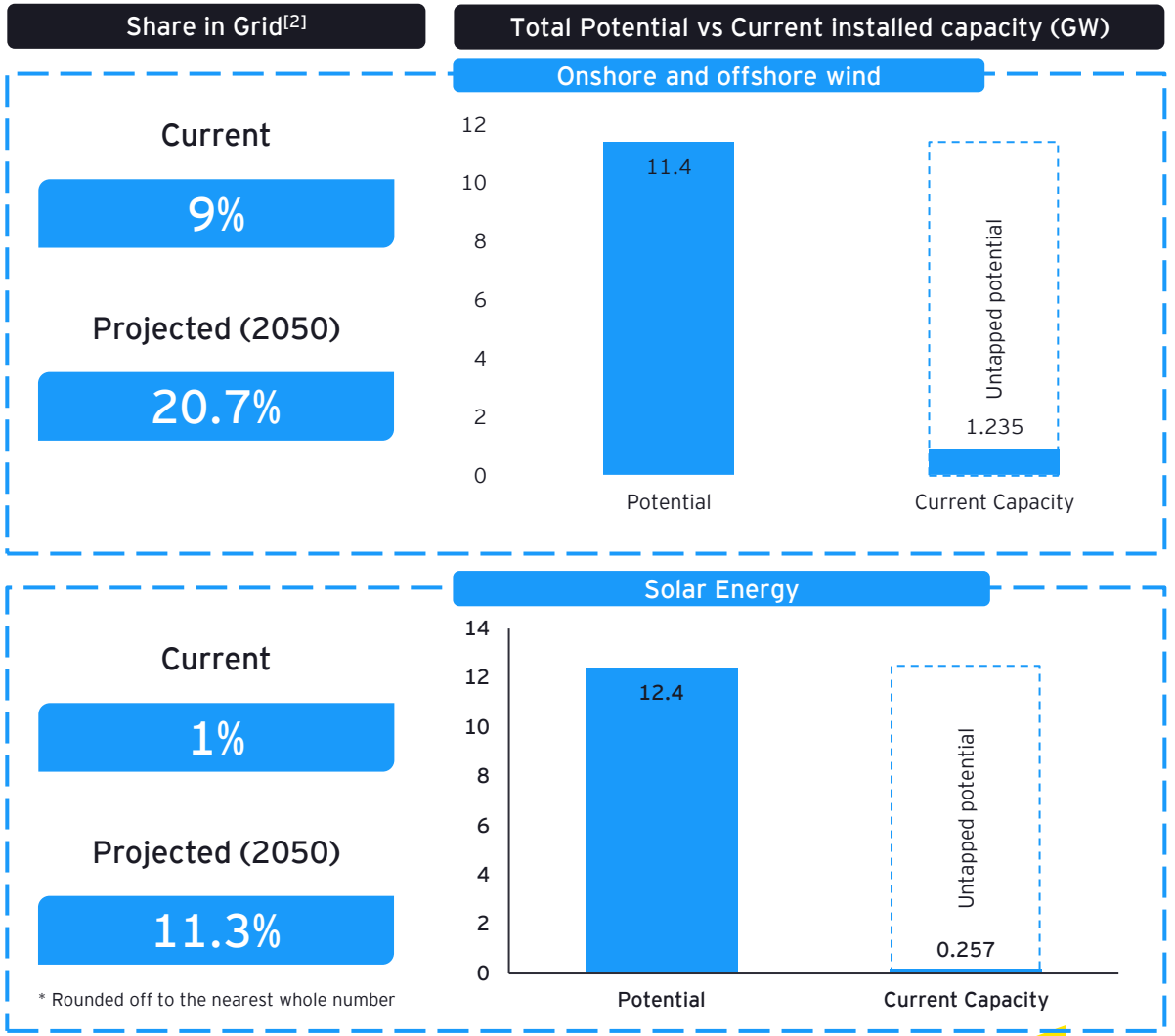
New Zealand has established renewable generation but large untapped potential

Onshore and offshore wind potential is world class:

- New Zealand's Ministry for Business Innovation and Employment (MBIE) undertake periodic assessments of wind potential,[1] identifying promising sites for theoretical projects (as opposed to actual projects that have been announced). Key findings were:
  - 82 onshore potential projects totalling 11.4 GW and annual generation potential of 39 to 44 TWh
  - The true wind energy potential is anticipated to be even higher, as the study only included projects exceeding 100 MW in capacity
- In MBIE's Electricity Demand and Generation Scenarios (EDGS) report,[2] wind power is identified as a key contributor to New Zealand's future electricity mix, increasing to 20.7% of total generation by 2050 in the reference scenario.

Solar PV potential is significant and largely untapped:

- NZs uptake of solar generation has been lagging behind global trends, in part due to:
  - High penetration of existing renewables
  - Limited electricity demand growth
  - No government subsidies for new renewable generation
  - Additional technology costs due to supply chain and geography
- As electrification gains momentum, solar PV is poised to play a more significant role in New Zealand's electricity grid. Forecasts from New Zealand's Energy Efficiency and Conservation Authority (EECA)[3] indicate that by 2035, solar PV could account for 6% of the country's electricity supply, while MBIE forecasts solar PV could grow to 11.3% of overall electricity generation by 2050.[2]
- New Zealand's proximity to Australia, arguably the most mature solar market, offers critical labour and development resources, supporting solar industry growth.
- Added to this, New Zealand has the opportunity to introduce agrivoltaic energy generation as a means of diversifying farming operations with minimal impact to stocking rates (depending on farm type) and no need to apply to change land use.



Source: [1] MBIE, [2] MBIE EDGS, [3] EECA.

EY Parthenon

Electrification is set to support emissions reductions, with electrification solutions already existing for a large proportion of end-uses

Increasing renewable integration will help meet emissions targets, with forecasts suggesting renewables will comprise 58% of energy consumption by 2050. The growth in renewable generation will be driven by electrification of demand from transport and industry. Increasing amounts of renewable generation are forecast to enable total energy related emissions dropping by 60% (from 2005 levels) by 2050.[3] It is estimated that 84% of fossil-fuel machines in NZ could be electrified today.[4]

Transport

- EVs offer a proven strategy for reducing New Zealand's transport-related emissions, which constitute 20% of the nation's gross emissions. Private vehicles and light/medium trucks account for 80% of global transport emissions, and offer a strong case for electrification.

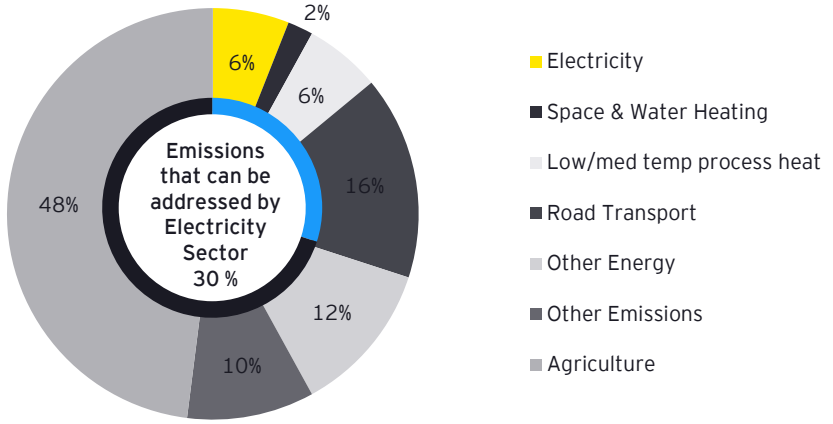
Industrial electrification

- Electric heat pumps are suitable for displacing low- and medium-temperature heat, which constitutes 73% of New Zealand's heat emissions, while also reducing dependency on natural gas.
- NZ could reduce its emissions by an estimated 5.3 MT CO_2e by electrifying industry.[3]

New Zealand's Electrification Opportunity[1]

Sectors	Abatement Potential (Mt CO_2e)	% of Current Gross Emissions	Primary Technologies
Ground Transport	13.3	16%	Electric vehicles for light transport, buses, light and medium trucks, and some heavy transport
Low to Medium Process Heat	5	6%	Electric heat pumps and electrode boilers
Heating space and water for Buildings	2	2%	Electric heat pumps
Electricity Generation emissions	5.1	6%	Renewable electricity
Total	25.4	30%	

Percentage split of New Zealand's gross emissions by end-use[1][2]



Role of Electricity Sector in meeting Energy Demand[1]

Sources	2020	2050
Units	TWh (%)	TWh (%)
Electricity (80-90% renewable)	35.7 (19%)	65.5 (58%)
Renewables (non-electricity)	16.9 (9%)	26 (23%)
Oil	77 (41%)	11.3 (10%)
Natural Gas	43.2 (23%)	4.5 (4%)
Coal	15 (8%)	5.6 (5%)
Total Energy Demand	188 TWh	113 TWh

Source: [1] The Future is Electric - BCG, [2] EY analysis, [3] Energy to Grow - BCG [4] Rewiring Aotearoa Machine Count

EY Parthenon

Electricity demand is projected to grow by 65% over the next 25 years, with around 58% of NZ's total energy demand forecast to be met by electricity[14]

Long-term demand pathways are robust with consensus around demand growth

- The long-term demand pathway for electricity in New Zealand is strongly influenced by electrification initiatives in the process heat and transportation sectors.
- The conversion of coal and gas boilers is expected to contribute significantly to electricity demand growth:
  - Fonterra, New Zealand's largest dairy company, has committed to moving away from coal nationwide, electrifying process heat at Whareroa, and has installed electrode boilers at its Edendale site.
  - Open Country Dairy[2] and Synlait[3] have both installed electrode boilers at former coal-powered dairy factories in the South Island.
- EV adoption in NZ has seen continued growth, with a increase in sales between 2024 and 2025 of 13% for battery EVs and 103% for plug-in hybrid EVs[4]. EVs are now 2.9% of the New Zealand light vehicle fleet[5]. To continue support for EV adoption, the current coalition government proposes investment in EV charging infrastructure to provide 10,000 public EV chargers by 2030[6].
- Rio Tinto's Tiwai Point aluminium smelter signed a 20-year PPA, representing 13% of New Zealand's electricity demand. This agreement included significant demand response when the country has high demand.[7][8]

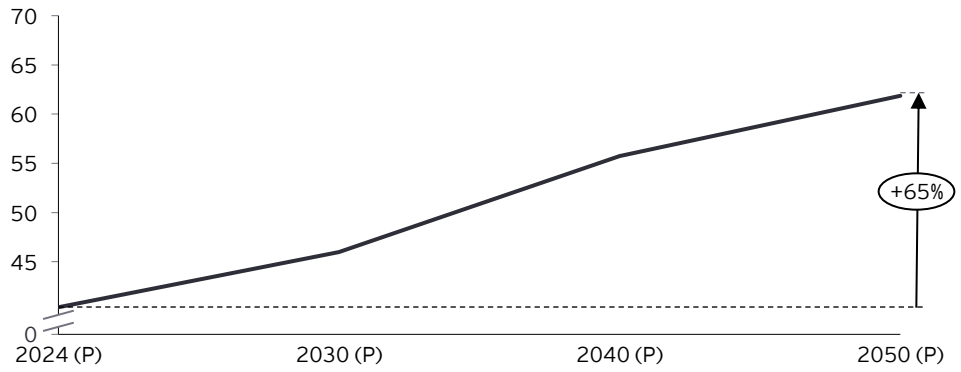
Data centres and hydrogen could significantly enhance demand growth

- The market for data centres has doubled since 2020. NZ currently has around 125 MW of electricity demand from data centres, which is predicted to grow by a further 300 MW by 2035.[9]
- Datagrid NZ is expecting to open the first phase of its 240 MW data centre by 2028, coupled with subsea cables connecting it with Australia.[10]
- Modelling to support the NZ Hydrogen Roadmap in 2023 found that hydrogen production could increase 2050 electricity demand by 34 TWh in the base case and 73 TWh in the export focussed case [11].

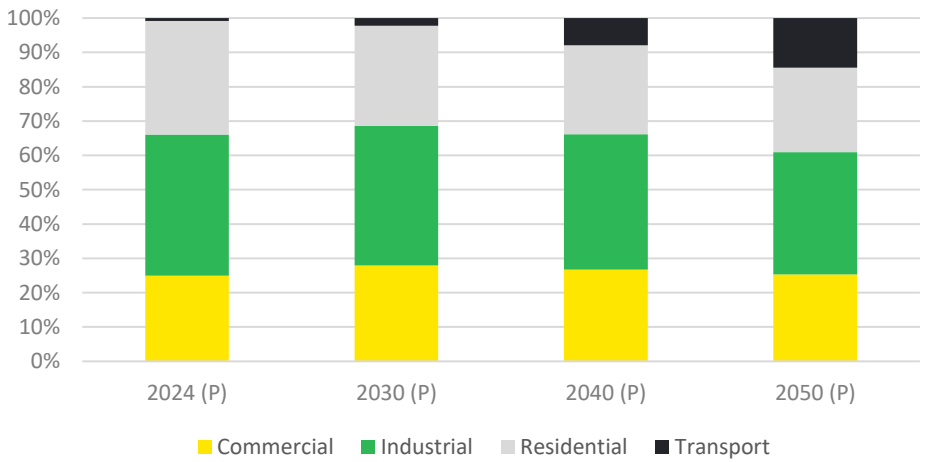
Short-term uncertainties exist

- Short-term uncertainties exist as changes to government initiatives and resource management reforms may affect investment and regulation
- The closure of thermal plants, alongside rising peak demand, decreasing gas supply, and potential for significantly increased demand for data centres, also creates market uncertainty in the short-term.

Projected Total Electricity Demand (TWh) [12]



Demand by sector [13]



Source: [1] Getting out of coal – Fonterra, [2] Open Country achieves a world first in dairy – EECA, [3] Synlait has switched on New Zealand's first large-scale electrode boiler - Synlait Milk, [4] 2025 Market Highlights | EVDB NZ, [5] EV Market Stats | EVDB NZ, [6] National-ACT Coalition Agreement – National Party, [7] Tiwai Point, 20-year power supply agreement, [8] Meridian NZAS Contract, [9] Data centres as strategic infrastructure - BCG, [10] Datagrid NZ, [11] Interim Hydrogen Roadmap: August 2023, [12] EY ROAM Analysis, [13] Whakamana i te Mauri Hiko, [14] The Future is Electric - BCG,

The challenges facing NZ's electricity system reveal an opportunity to adopt new energy solutions that enhance security of supply

New Zealand's electricity system is under pressure from a set of interrelated challenges, including dry-year risk amplified by winter demand peaks, the inherently intermittent nature of renewable generation, an ageing and retiring thermal fleet, and uncertain gas supply.

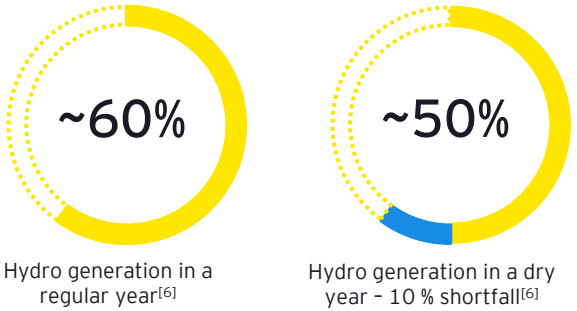
Ageing thermal fleet and planned retirements

- Around **750 MW** of thermal generation has been decommissioned from within the Upper North Island region since 2012.[1]
- The **377 MW** Taranaki Combined Cycle plant closed at the end of 2025 after reaching the end of its operating life.[2]
- There are potential retirements of **1150 MW** of thermal capacity at Genesis' Huntly plant by 2037.[3]

Decreasing domestic natural gas supply

- Between 2024 and 2025, gas reserves reduced 27%.[4]
- The ~1200 MW of gas-fired power generation in NZ plays an essential role at times of peak demand or in low-hydro generation periods. Decreasing gas supply and subsequent increased gas prices poses a risk to security of supply.
- The NZ government recently announced the construction of an LNG import terminal, funded by a levy on electricity.[5] The import of LNG is expected to strengthen NZs energy security, particularly during dry years.

Market dynamics of a dry year winter - 2024



Hydro generation in a regular year[6]

Hydro generation in a dry year – 10 % shortfall[6]

Hydro storage at its lowest
In Aug 2024, South Island hydro storage levels were just 51% of the mean for the time of year[7]

Demand at its highest
National demand:
Aug 2024: 3,700 GWh
Dec 2024: 3,200 GWh [8]

Electricity spot market prices high
Aug 2024: $468 / MWh
Dec 2024: $30 / MWh[9]

While the sun does not always shine and the wind does not always blow, increased must-run renewable generation can allow NZ to defer hydro generation and keep lake levels higher.

The challenges faced by NZ's electricity system unlock opportunities for green firming generation or energy storage solutions.

Source: [1] Waikato & UNI voltage management - Transpower, [2Taranaki Retirement, [3] NZ Herald, [4] MBIE Gas Reserves, [5] Imported LNG at $20 to $25 GJ, says Govt | Energy News, [6] Electricity Demand and Generation Scenarios | MBIE, [7] Hydro Information | Transpower, [8] Electricity Authority - EMI (market statistics and tools), [9] Electricity Authority, EA high wholesale prices

Wholesale prices forecast to increase over time, while thermal retirements and intermittent renewables lead to increased seasonal variability

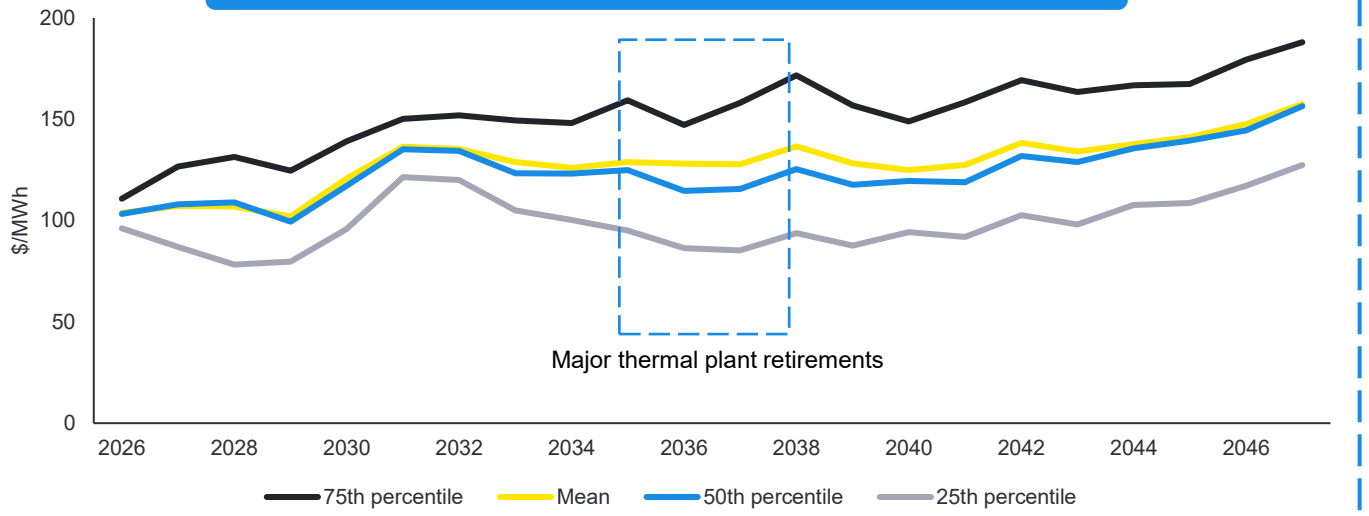
Historically, New Zealand experiences its highest demand in winter, when lake levels are lowest, leading to a continued reliance on thermal generation.

Although renewable generation will continue to expand, its intermittency means it will not fully meet peak winter demand.

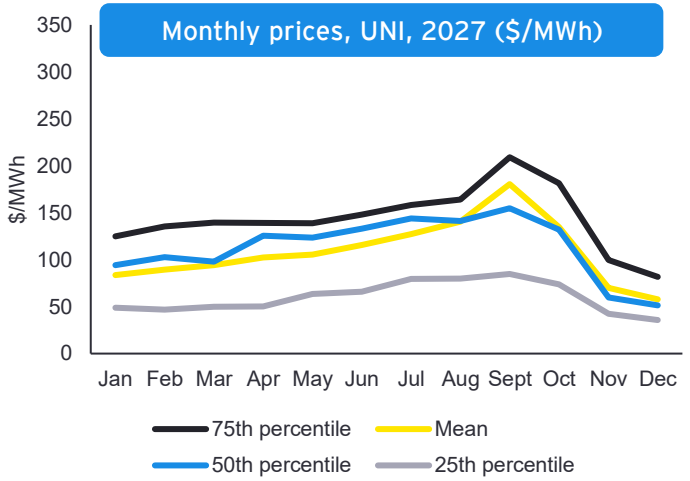
Major thermal assets, including the Huntly units, are expected to retire by the end of 2037, materially reducing firm generation capacity.

As a result, NZ is forecast to experience more seasonal variations in price over time, with low summer prices and high winter prices.

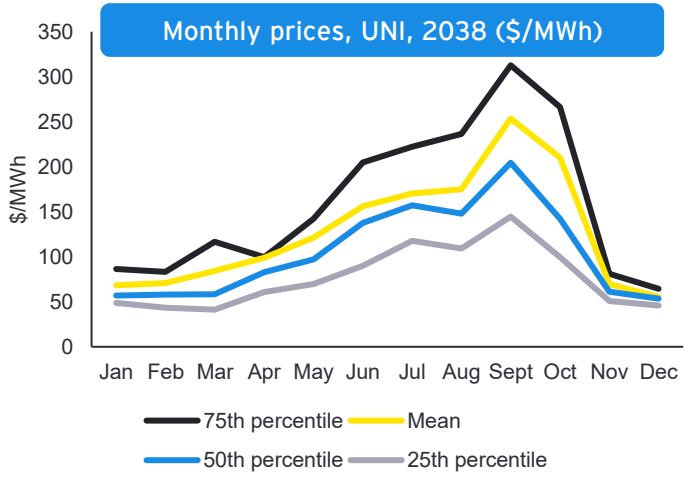
Forecast time-weighted price for the Upper North Island, ($/MWh)



Monthly prices, UNI, 2027 ($/MWh)



Monthly prices, UNI, 2038 ($/MWh)



Source: [1] EY ROAM analysis

NZ provides a stable investment environment with clear, enduring objectives for climate change

NZ compares favourably on many global rankings

WORLD ECONOMIC FORUM

Global Competitiveness Report [1]

Overall Ranking
18th

Energy Transition Index[2]

Overall Ranking
24th

System Performance
9th

Security
4th

WORLD ENERGY COUNCIL

World Energy Trilemma Index [3]

Overall Ranking
9th

Grade
AAAa

The GSCI

Global Sustainable Competitiveness Index [4]

Overall Ranking
25th

Global Governance Index
30th

Our Energy and Electricity Markets are mature and open access

- The New Zealand electricity market is characterized by its transparent and structured arrangements
- While vertical integration of retail and wholesale is permitted, transmission and distribution are regulated, open access providers unable to hold material generation[5]
- The gross pool wholesale electricity market was established in 1996[6] and has around 330 participants[7]
- Access to the market is open to all those meeting prudential and information disclosure requirements[7]

Zero Carbon Act 2019: A bipartisan framework for decarbonisation[8]

Provides four pillars to address climate change with support across parliament:

- sets domestic greenhouse gas emissions reduction target for New Zealand to:
  - Zero net emissions of all greenhouse gases (except biogenic methane) by 2050
  - Reduce emissions of biogenic methane to 24-47 per cent below 2017 levels by 2050, and 10 per cent below 2017 levels by 2030
- establishes a system of emissions budgets to guide reduction targets
- requires the Government to develop and implement policies for climate change adaptation and mitigation
- establishes an independent Climate Change Commission to advise government and track targets

Consensus building new generation and providing the right investment environment

The government's coalition agreement commitments include[9]:

- Amend the Resource Management Act 1991 to make it easier to consent new infrastructure including renewable energy.
- Identify opportunities for energy market competition and innovation
- Examine transmission and connection pricing to facilitate cost effective connection of new renewable generation resources.
- Subsidise rollout of 10,000 public EV chargers by 2030

Source: [1] Global Competitiveness Report: WEF, [2] Energy Transition Index: WEF, [3] World Energy Trilemma Index, [4] Global Sustainable Competitiveness Index, [5] Electricity Industry Amendment Act 2022, [6] MBIE:New Zealand Electricity Reform, [7] Electricity Authority, [8] Climate Change Response (Zero Carbon) Amendment Act 2019, [9] National, ACT and New Zealand First to deliver for all New Zealanders.

While New Zealand's unique location and geography provides both challenges and opportunities, our prices remain globally competitive

	New Zealand	Australia	UK	Ireland	Norway	Denmark
	New Zealand combines a very high share of renewable electricity with a fully isolated national grid, relying heavily on hydro for both generation and storage.	**Similarities:** geographical - our closest neighbour **Differences:** high reliance on coal, high solar penetration (rooftop and grid scale)	**Similarities:** Geographical size, GDP per capita **Differences:** Lower renewables, interconnectors	**Similarities:** Population, island system **Differences:** Natural gas dependent, some interconnection to UK	**Similarities:** Population, high renewables share **Differences:** Interconnectors allow export/import to Europe	**Similarities:** Population, high renewables share **Differences:** Wind-dominated, interconnectors allow export/import
Population (million)	5.2	27.5	69.9	5.3	5.5	6.1
GDP per capita (USD)[1]	49,205	64,604	53,246	112,895	86,785	71,026
Total electricity generated (GWh, 2024)[2]	45,300	279,708	285,334	31,492	158,158	35,317
Renewable share (2023) [2]	85%	34%	44%	45%	95%	75%
Largest source of generation[2]	Hydropower	Coal	Natural gas/wind	Natural gas	Hydropower	Wind
CO_2 emissions from power generation[2]	4.0 $MtCO_2$	159.6 $MtCO_2$	56.1 $MtCO_2$	7.6 $MtCO_2$	1.5 $MtCO_2$	4.9 $MtCO_2$
Residential prices (USD/kWh)[3]	0.21	0.26	0.40	0.45	0.16	0.36
Non-household prices (USD/kWh)* [4][5][6][7]	0.13	0.20	0.38	0.32	0.09	0.16

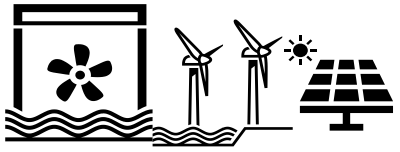
* Non-household prices for businesses/industrials in the size range >100 MWh. Australian value is based on peak rates. Values are from 2024 and 2025.
Source: [1] World Bank, [2] Countries & Regions – IEA [3] Electricity prices around the world | GlobalPetrolPrices.com [4] Energy prices | MBIE, [5] Default Large Business Customer Rates | EnergyAustralia [6] Gas and electricity prices - GOV.UK [7] Electricity price statistics - Statistics Explained – Eurostat

How does the New Zealand energy sector work?

How does the New Zealand energy sector work?

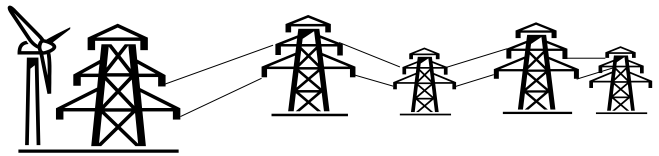
- The NZ electricity market is mature, regulated, and open access
- Grid infrastructure is nationally integrated, and designed to move power from the South Island hydro system to large demand centres in the North Island, under normal conditions
- Nodal spot pricing and liquid hedge markets allow participants to manage price and locational risk

The New Zealand electricity market structure is well-established and open access



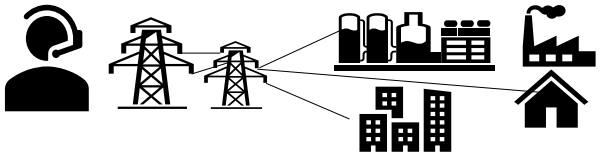
NZ has 4 major Generators[1]

- NZ's electricity is generated by approx. 86% renewables (54% hydro, 20% geothermal, 9% wind).
- NZ has 4 major generators who contribute:
  - Meridian (33%)
  - Contact Energy (25%)
  - Mercury (21%)
  - Genesis (14%)
  - Others (6%)
- Generators sell their electricity on the NZ wholesale electricity market.
- Approximately 38.5% of household electricity bills comes from generation costs.



NZ has 1 state owned transmission grid and 29 distributors

- Transpower, a state-owned enterprise, manages New Zealand's national electricity transmission system.
- 29 distribution companies operate with various ownership structures[2]:
  - 4 local authority owned
  - 19 Trust/community owned
  - 4 Privately held
  - Other (Vector is 75% owned by Entrust (Trust) and 25% listed)
- Subject to price-quality regulation under Part 4 of the Commerce Act 1986
- Distribution companies are facing pressure to improve efficiencies, via collaboration, acquisitions, or mergers.[3]



NZ has over 40 retail brands and over 2.35 m consumers

- In New Zealand there is high vertical integration between electricity generation and retail as the 4 main retail companies are also the main generating companies - these 4 "gentailers" account for 87% of market share[4]
  - Meridian (20%)
  - Contact (20%)
  - Mercury (25%)
  - Genesis (22%)
- The retail electricity market is regulated by the Electricity Authority. Approx. 11% of household electricity bills comes from retail costs.[5]
- Industrial users are typically on fixed-price variable volume contracts; more time-of-use pricing is emerging.

Government policy and regulatory agencies

Central government policy and regulatory agencies

- **Ministry for Business, Innovation and Employment (MBIE):** sets policy for the energy and resource markets, incl. the electricity market and upstream gas development
- **Ministry for the Environment:** sets policy for emissions reduction (including the emissions trading scheme (ETS)) and land/ resource use
- **Climate Change Commission:** advises the Government on climate change measures to meet national targets
- **WorkSafe:** health and safety regulator in NZ

Energy sector specialist agencies

- **Electricity Authority:** regulates the wholesale and retail electricity markets; monitors industry code compliance.
- **Commerce Commission:** regulates monopoly infrastructure (revenue setting under a price-quality path regime) and investigates competition issues.
- **Gas Industry Co.:** regulates gas market and sets energy security targets.
- **Energy Efficiency and Conservation Authority:** promotes efficiency and decarbonisation efforts (e.g., EV rollout).

Local and regional government

- **Territorial authorities (city and district councils):** manage and deliver water, waste and sanitation, local transport infrastructure and public recreational facilities.
- Territorial authorities also regulate building consents, determine urban planning bylaws, and maintain public health standards.
- **Regional councils:** environmental regulator responsible for air and water quality, water catchment management, regional transport planning and public transport services.

Source: [1] Electricity Authority, [2] PwC, [3] Minister Watts' Letter to EDBs [4] Electricity Authority EMI, [5] Electricity Authority.

NZ's grid infrastructure is designed to move power from large hydro generators in the South Island to large demand centres in the North Island

The New Zealand grid runs the length of the country connecting large hydro schemes in the South Island with major demand centres in the North

- During normal operating conditions, power flows run northwards through the grid.
- During extended dry periods, or when dam levels are low, power flows run southwards through the grid.
- The increase in distributed generation such as wind and solar and changes to industrial demand is impacting patterns in power flow, particularly in regional parts of the grid.
- An upgrade to the HVDC connecting islands will bring increased transfer capacity by 2031.

Hydro in the South Island and Central North Island[1]

- The 5 major hydro schemes provide around 67% of total annual generation
- The total storage capacity of the hydro schemes is around 6 TWh (approximately 6-8 weeks of national demand).

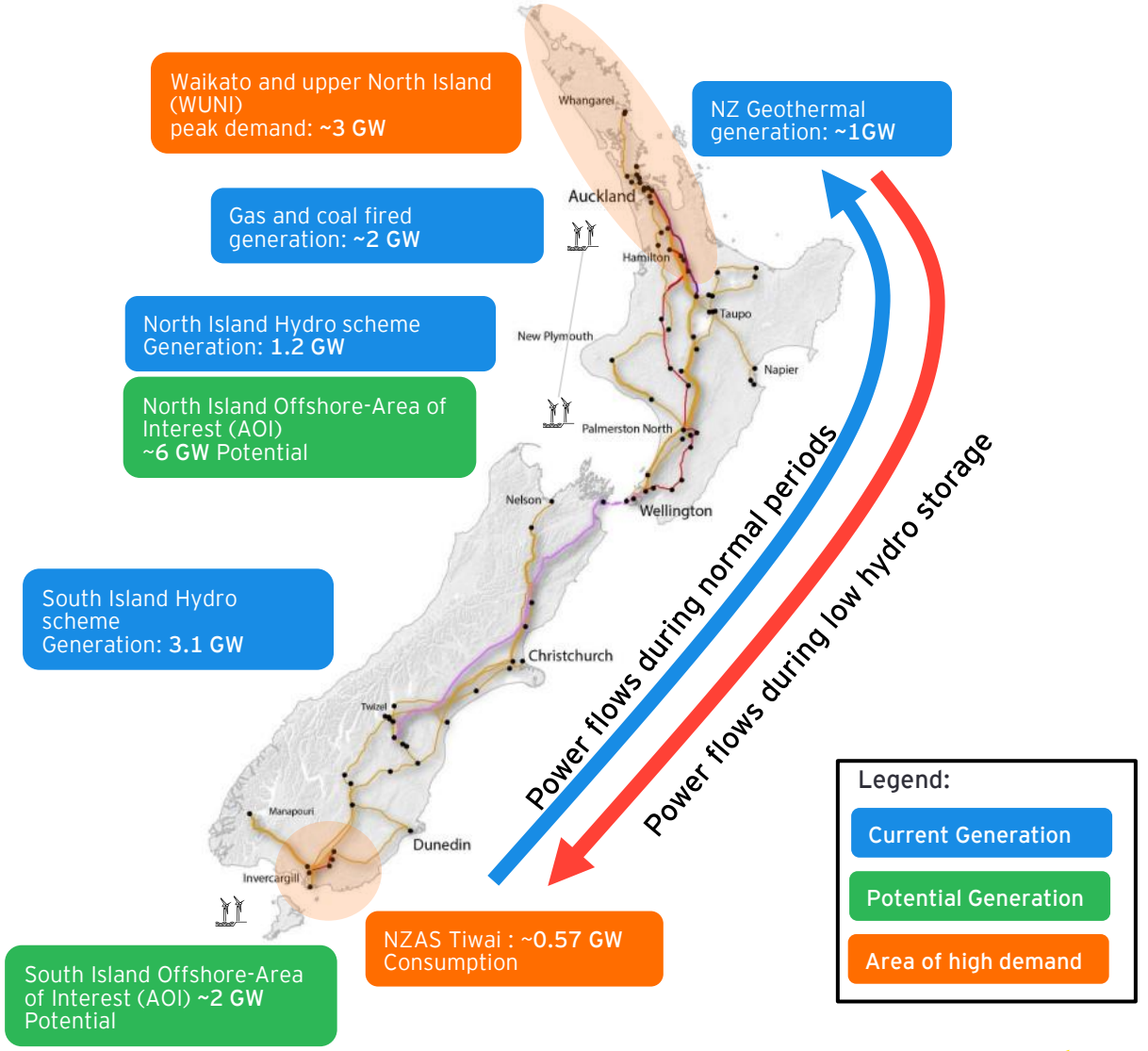
Large demand centres

- The Waikato and the upper North Island (WUNI) region has the highest concentration of demand, with an annual peak of approximately 40 GWh a day during winter.
- Around 750 MW of thermal generation has been decommissioned from within the WUNI region since 2012.[2] In addition, the Taranaki Combined Cycle gas generator in the lower North Island is scheduled for decommissioning. This reduction in thermal generation increases the need for imported generation from the south.
- The aluminium smelter in the lower South Island is the largest single user of electricity with a demand of approximately 572 MW[3].

Thermal generation in the North Island in Taranaki and Huntly

- Gas and coal fired generation in Taranaki and South Auckland provide firming generation during the winter, peak periods, and when hydro lake levels are low.

Accommodating large offshore wind projects would likely require significant grid upgrades



Source: [1] TPM BBC - Transpower, [2] Waikato & UNI voltage management - Transpower, [3] Briefing for the Incoming Minister for Energy - MBIE.

Liquid spot and hedge markets exist to allow generators to actively manage price risk

The Wholesale Electricity Market (aka the Spot Market)

- The nodal price of electricity reflects the marginal cost of supply. This means it is determined by **the cost of supplying the last MWh at that node.**
- There are **220 nodes** in the market and prices are determined **every half hour**.
- Generators can offer up to 5 tranches of generation at different price points.
- **Two types of reserve capacity** are also procured by the market: fast instantaneous reserve and sustained instantaneous reserve.
- Reserve requirements are set for the North and South Islands separately but **reserve sharing is available across the HVDC**.
- **Energy and reserves are co-optimised** through the market.
- A DC load flow model of the transmission grid is used to estimate line losses and congestion constraints which feeds into **locational price differences between the different nodes**.

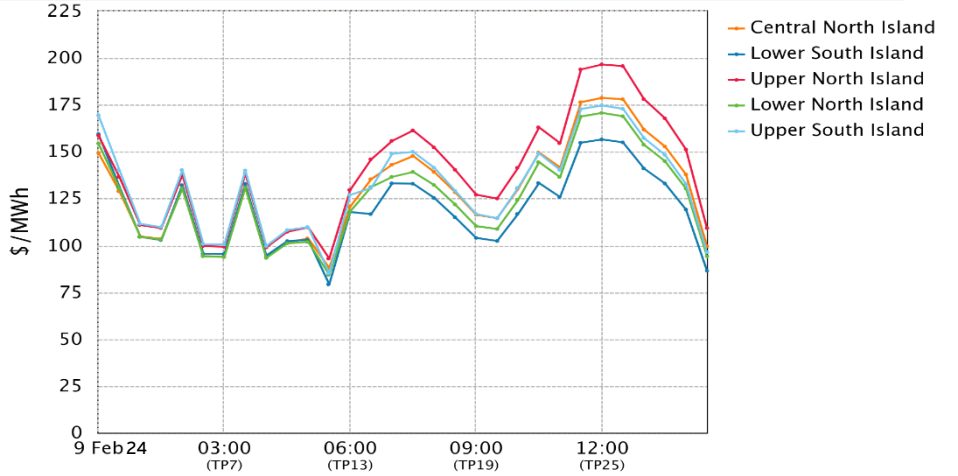
The Hedge Market:

- The hedge market allows participants to manage risk associated with movements / fluctuations in the spot market.
- All electricity must be sold through the spot market, so hedges always manifest as a Contract for Difference (CfD).
- It comprises three key markets:
- **Futures and options exchange (ASX):** Standardized contracts for a future price up to 3 years out settled against the Otahuhu and Benmore pricing nodes.
- **Over-the-counter (OTC) hedges:** Involve direct negotiation between buyers and sellers, offering flexibility with various contract types.
- **Financial Transmission Rights (FTR) market:** Allows participants to purchase the right to the difference in price between two pricing nodes. Helps in managing locational price risk.

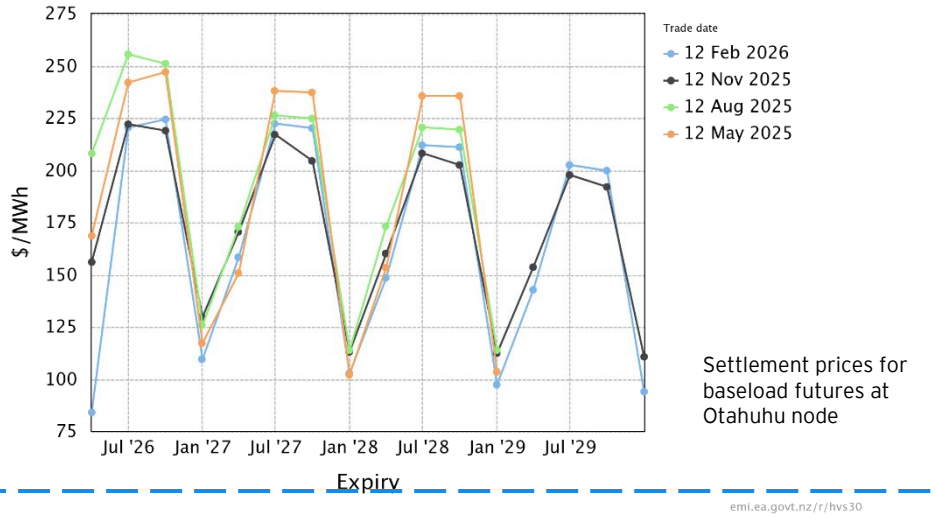
Potential enhancements:

The Market Development Advisory Group (MDAG) [1] suggests enhancing transparency in hedge market activities, particularly for non-baseload contracts, by disclosing contract offers, bids, and executed contracts. 13 of the 31 recommendations have been implemented, with a further 11 in progress.[2]

Wholesale energy prices, electricity spot market ($/MWh) [3]



New Zealand electricity futures contracts traded on the ASX platform [3]



Settlement prices for baseload futures at Otahuhu node

Source: [1] Final Recommendation Paper Price discovery in a renewables-based electricity system, MDAG, [2] Progress on MDAG recommendations | Electricity Authority [3] Electricity Authority.

What do you need to know to invest?

What do you need to know to invest?

- NZ has an established, well understood, end-to-end development pathway for renewable projects
- Planned updates to the approvals processes will allow streamlined investment for offshore investors
- Power purchase agreements are playing an increasing role in the market, supporting new renewable builds
- Fast-track approvals are unlocking significant new energy projects
- NZ has a very large and active renewable development pipeline

The New Zealand renewables development pathway is well established with clearly defined steps

Resource consents

- Resource Management Act 1991 (RMA) sets NZ's planning framework
- A recent reform introduced the fast-track approvals process to the RMA. This acts as a "one-stop-shop" for consent approval for projects of national and regional significance.
- Consents can be granted for up to 35 years
- Visual impacts key for projects
- Transmission/distribution infrastructure under separate consents as grid owners have requiring authority rights under the RMA
- Offshore wind framework more complex and will require time to develop

Regulators: territorial authorities

Advisers required: engineering, legal, resource management

Timeframe: 2-3 years (1 year for renewable energy consents)

Community and iwi engagement

- Engagement with neighbouring landowners (where applicable) to help manage expectations and to meet resource consent requirements regarding notification of impacted people and properties
- General community engagement with nearby population bases (generally within the territorial authority area)
- Build relationships with iwi/ mana whenua, the indigenous people who have historic and territorial rights over the land

Regulators: territorial authorities

Advisers required: mana whenua representatives, communications

Timeframe: ongoing to construction completion

Transmission/ grid connection

Transpower has a 9-step process to connect generators to the grid[1]:

1) Initial inquiry
2) Concept assessment
3) Application
4) Investigation
5) Delivery (detailed design)
6) Delivery (build & commission)
7) Operations & maintenance
8) Replacement & refurbishment
9) Enhancement & Development

Regulators: Transpower

Advisers required: engineering, construction, legal

Timeframe: ~2-3 years

Electricity code requirements

- There are multiple codes and legislation industry participants must be compliant with[2]

Electricity Industry Act 2010

- This EIA provides a framework for regulation of the electricity industry
- The Act provides the Electricity Authority its power to regulate and the processes it must follow

Related EIA regulations

- There are five regulations industry participants must follow relating to code breaches, industry participant levies, domestic retail tariffs, and exemptions to regulations

Industry Participation Code 2010

- The Code sets out the duties and responsibilities for all industry participants

Regulators: Electricity Authority

Advisers required: engineering, legal, assurance/ compliance

Timeframe: ongoing

Overseas Investment Office (OIO) approval

- The Overseas Investment Office (OIO) assesses applications for foreign investment to ensure they are in the best interests of New Zealand. In some circumstances consent needs to be granted [3].
- The approval process confirms that the investment doesn't pose an outsized risk to New Zealand or a specific region of the country.
- This approval process includes:
  - An initial check of the application,
  - An assessment of the investor and investment,
  - Either the OIO approves the decision or recommends a decision to the Minister.
- As part of the fast-track approvals process, updates to the Overseas Investment Act will come into effect in March 2026, to make it easier for foreigners to invest.[4]

Regulators: Land Information New Zealand (OIO)
Advisers required: legal, commercial

Timeframe: up to 100 days

Source: [1] Grid connection process – Transpower, [2] Electricity Industry Participants regulations – NZ Govt, [3] Overseas investment guidance – Overseas Investment Office, [4] Overseas investment changes

While the NZ PPA market is in early-stages, it is accelerating and increasingly underpinning new developments

Power Purchase Agreements have been a catalyst for renewables in many markets

- PPAs provide price certainty for investors and developers, and are growing worldwide.
- Globally, more than 68 GW of PPA deals were made in 2024, largely driven by data centres.[1]
- In overseas jurisdictions, PPA market development has often been supported by government incentives such as feed-in tariffs, contracts for differences and renewable market obligations.
- Underpinned by certification systems, PPAs have allowed corporates to meet their scope 2 carbon reduction targets.

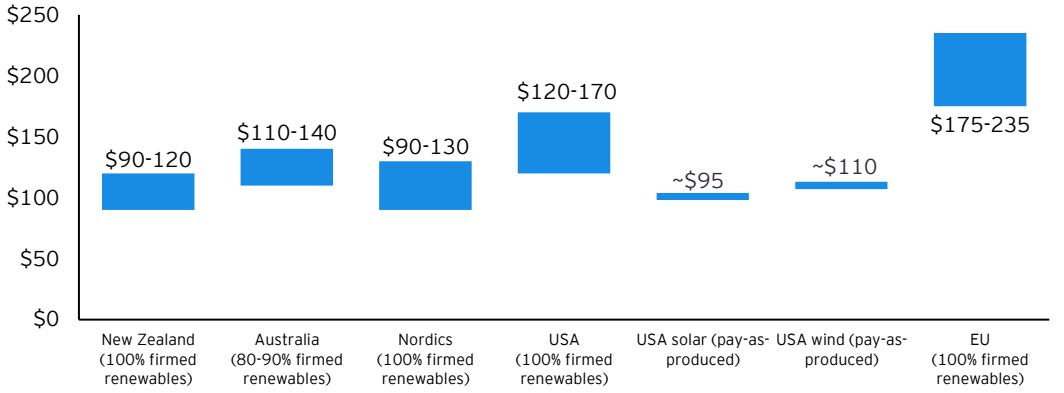
PPAs are a growing feature of the NZ market

- With most of the electricity generation in New Zealand stemming from renewables, at 85%, the need for government intervention to mitigate electricity emissions is lower and historically, renewables have proven to be cost-effective and are supported by the Emissions Trading Scheme (ETS), rendering certificates less critical for their viability.
- PPAs therefore play a slightly different role in the NZ market, ensuring price certainty and supporting businesses to meet sustainability goals.
- Rio Tinto's 20 year electricity arrangement with Meridian Energy, Contact Energy, and Mercury NZ for the Tiwai Point Aluminium Smelter is a defining example of PPAs in the NZ market.[2]
- An initiative led by BusinessNZ Energy Council, EVA Marketplace, and DLA Piper has developed a template for corporate PPAs, enabling easier access to new entrants. Public consultation closed in December 2025, with the template released in March 2026.[3]
- The NZ Government announced in Feb 2026 it is pursuing PPAs, starting with the three largest energy users, Health NZ, NZ Defence Force, and the Department of Corrections.
- NZ has globally competitive PPA pricing, with the added advantage of geothermal and hydro generation to firm intermittent renewables, resulting in 100% firmed renewable offerings.

Selected New Zealand PPA deals announced to date [5]

Developer	Project Name	Technology	Capacity (MW)	COD	Offtake (MW)	Offtaker type
Mercury	Turitea South	Wind	103	2023	62	Tech
Lodestone	Edgecumbe	Solar	32	2023	32	Retailer
Lodestone	Kaitaia	Solar	39	2023	39	Retailer
Contact	Tauhara	Geothermal	174	2023	62.5 25	Retailer Industrial
Mercury	Kaiwaikawe Downs	Wind	73	2024	NA	Retailer
Genesis	Lauriston solar farm	Solar	63	2024	NA	Corporate
Contact	Te Huka unit 3	Geothermal	51	2024	NA	Tech
Contact	Kowhai Park	Solar	168	2026	42	Industrial
Harmony Energy/ First Renewables	Tauhei Solar Farm	Solar	150	2026	32	Retailer
Yinson Renewables	Mt Cass	Wind	95	2028	66	Retailer

Global PPA price ranges $/MWh[6][7]



Source: [1] Corporate PPAs | Bird&Bird, [2] Tiwai Point, 20-year power supply agreement, [3], Corporate PPA template | BusinessNZ Energy Council, [4] Driving Investment in New Energy Projects [5] EY analysis, [6] Energy to Grow: Securing New Zealand's Future, [7] Utility Dive

Overview of New Zealand's fast track bill and announced energy projects

The purpose of the legislation

- The Fast-track Approvals Bill aims to establish a permanent, streamlined process for approving significant infrastructure and development projects with regional or national benefits. It introduces a **"one-stop shop"** approach for obtaining consents for major projects such as mines, roads, marine farms, and renewable energy projects.
- The Fast-track Bill provides an expedited consenting process for projects requiring approvals under the Resource Management Act, Wildlife Act, Conservation Act, Reserves Act, or the Public Works Act for land acquisition.

Fast-track approvals process

Project owners apply to Joint ministers to access the fast-track approvals process → Joint ministers refer eligible projects to an expert panel for detailed assessment → Expert panel evaluates the project and make the recommendations to Joint ministers

Joint ministers make the final decisions on whether to approve or decline the project.

Project Eligibility

A project will become eligible for fast track by either being:

1. Referred to expert panel by joint ministers
2. Listed as a project under Part A (automatic referral) or Part B (requires referral) of Schedule 2 of the Bill.

Once referred, an expert panel has **six months** to review a project and recommend conditions for consent or permits, after which the Joint Ministers make the final decision.

Implications for the sector

The Fast-track Approvals Bill will allow more projects to use the fast-track process, encouraging generators to propose additional projects once enacted.

Projects not eligible for the fast-track process are still able to be progressed under the standard RMA process.

27 Energy projects listed in the Schedule 2 of the Bill.

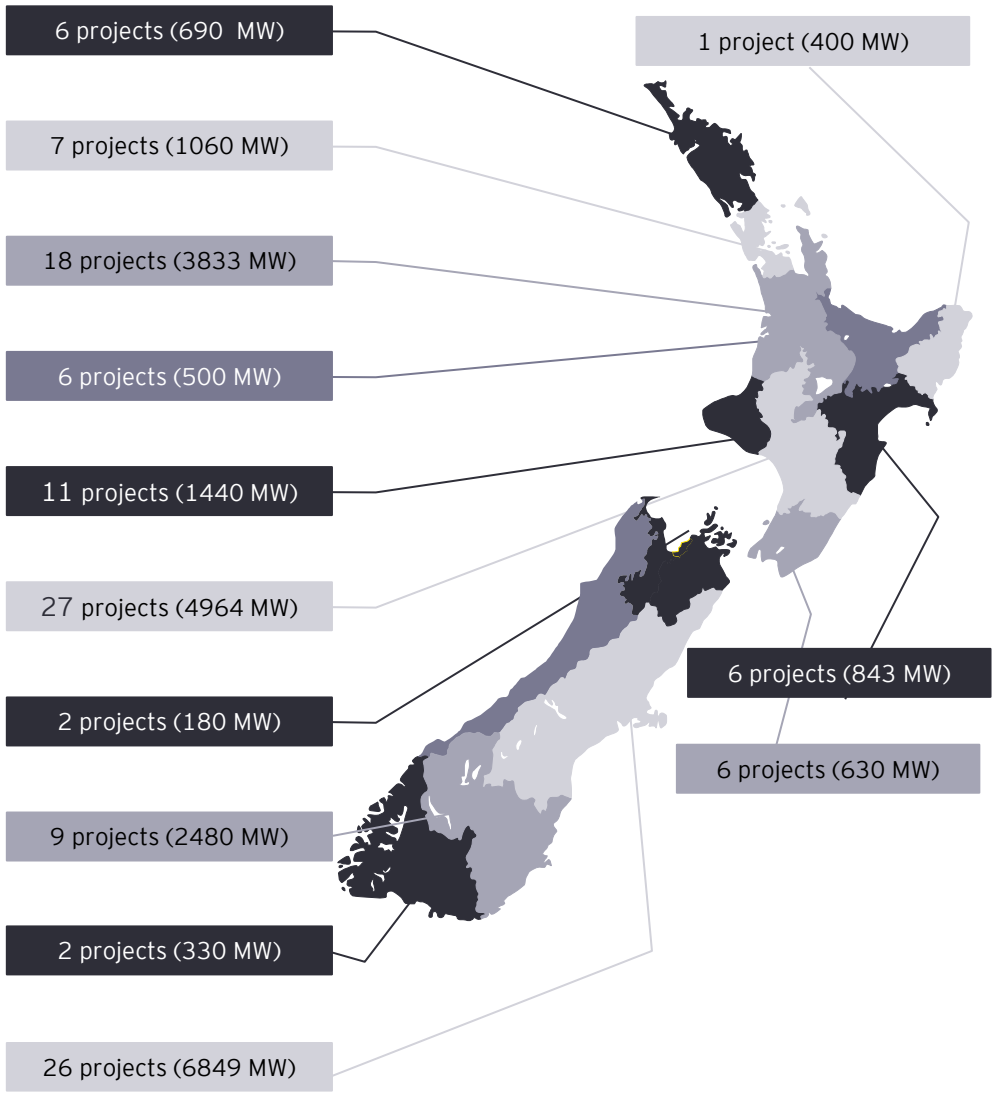
4.8 GW GW of capacity listed in the Schedule 2 of the Bill.

Fast Track Energy sector projects overview

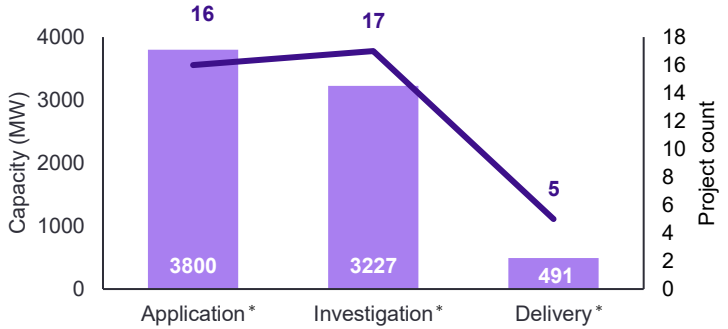
Project	Generation Type	Location	Expected Size (MW)
The Point Solar Farm	Solar	Canterbury	420
Rotokawa Solar Farm	Solar	Waikato	105
Wheao Hydroelectric Power Scheme Reconsenting	Hydro	Bay of Plenty	26.1
Bunnythorpe Solar Farm	Solar	Manawatū Whanganui	400
Huriwaka Wind Farm	Wind	Manawatū Whanganui	300
Kaimai Hydro-electric Power Scheme Reconsenting	Hydro	Bay of Plenty	42.1
Kaihiku Wind Farm	Wind	Otago	300
Huirangi Solar Farm	Solar	Taranaki	100
Hinuera Solar Farm	Solar	Waikato	110
Black Point Solar Farm	Solar	Canterbury	300
Balmoral Station Solar Array	Solar	Canterbury	88
Mahinerangi Wind Farm	Wind	Otago	164
Waitaha Hydro Project	Hydro	West Coast	20
Waikokowai Wind Farm	Wind	Waikato	300
Tararua Wind Farm Repowering Project	Wind	Manawatū Whanganui	60
Central Park Resilience Project	Infra	Wellington	-
Haldon Station Limited	Solar	Canterbury	180
High Voltage Direct Current (HVDC) Cable Replacement and Capacity Project	Infra	Multi-Region	-
Kaimai Wind Farm	Wind	Waikato	168
Puketoi Wind Farm	Wind	Manawatū Whanganui	228
Foxton Solar Farm	Solar	Manawatū Whanganui	220
Wellsford Solar Farm	Solar	Auckland	76
Tekapo Power Scheme - Applications	Hydro	Canterbury	190
Grampians Solar Project	Solar	Canterbury	300
Twizel Solar Project	Solar	Canterbury	300
Southland Wind Project	Wind	Southland	385
Mangahao Hydro Scheme	Hydro	Manawatū Whanganui	40

Source: Fast-track Approvals Bill 31-1 (2024), Government Bill - New Zealand Legislation

New Zealand development pipeline has over NZ$44B of announced renewable projects

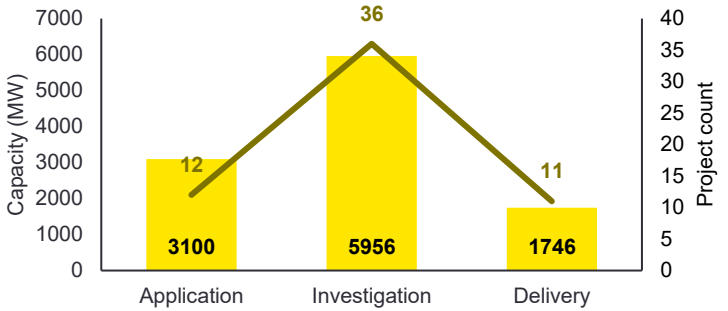


BESS pipeline



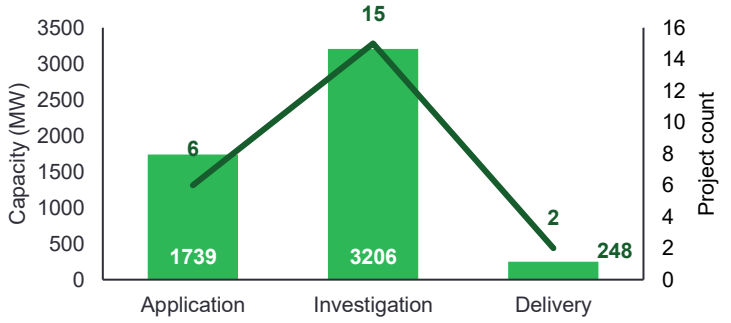
CAPEX Investment[1]	$11,375 m
Pipeline Capacity[2]	7,518 MW
No. of Projects[2]	38

Solar pipeline



CAPEX Investment[1]	$15,944 m
Pipeline Capacity[2]	10,802 MW
No. of Projects[2]	59

Onshore wind pipeline

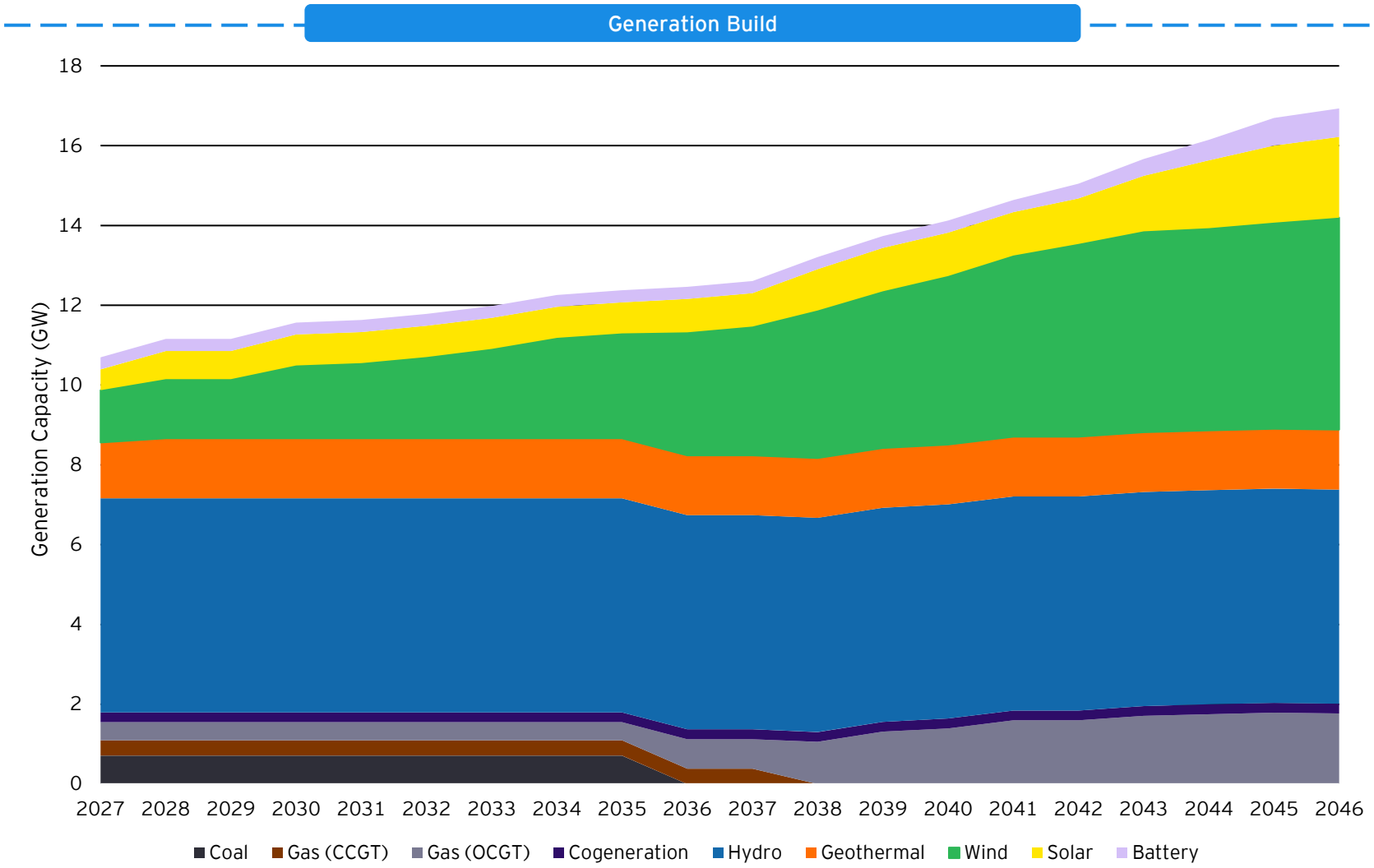


CAPEX Investment[1]	$16,898 m
Pipeline Capacity[2]	5,193 MW
No. of Projects[2]	23

* Application, Investigation, and Delivery are stages as defined by Transpower, with Delivery the most advanced stage. Source: [1] This projection is based on data from EY-ROAM, using 2026 CAPEX NZD/kW figures of $1,513 for BESS projects (assuming 2 hr duration), $1,476 for solar projects and $3,254 for wind projects. [2] Grid connection pipeline | Transpower

Appendix:
Electricity market forecast details

Forecast generation capacity by technology

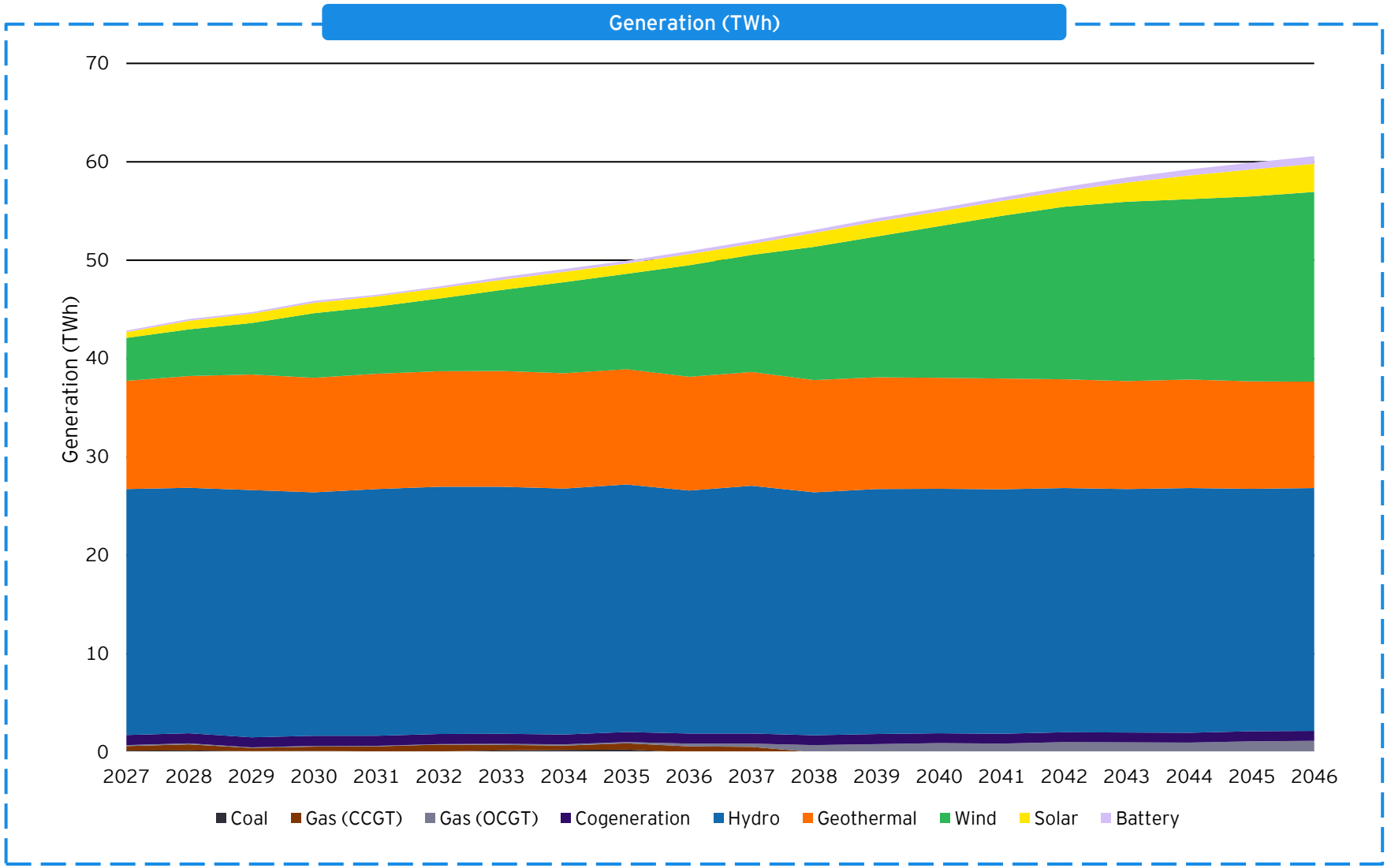


Assumptions:

- Tiwai Aluminium Smelter is still in operation.
- Existing thermal generation retires from 2035-2037.
- It is expected that there will be four times the wind generation capacity that there is today.
- The generation capacity shown here only includes grid-scale generation - rooftop solar is excluded.

Note: These values are based on EY ROAM's energy modelling. The model plans generation expansion to match demand, based on the most cost-effective outcomes. The previous New Zealand development pipeline slide is based on announced projects.

Forecast generation by technology



Assumptions:

- Demand from the grid will increase by 40% in the next 25 years.
- Demand response has a low capacity factor but is there for the unlikely situations where hydro, wind and solar do not meet demand.
- With increasing intermittency over the next 30 years, there is expected to be increasing development and use of batteries.
- The amount of hydro generation is expected to remain constant over time, while overall demand increases. This results in a drop in the proportion of hydro generation, from 61% of total generation in 2024 to approximately 40% in 2050.
- The decreasing cost of installing new wind and solar generation is expected to drive the replacement of coal and gas fired generation as thermal running costs rise.
- The generation shown here includes only grid-scale solar generation - rooftop solar is excluded from this figure and is modelled instead as reduced overall demand.

EY | Building a better working world

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

ey.com