TRANSPOWER

Te Kanapu

Data centres insights

Developing a **future grid** blueprint for Aotearoa

Data centre modelling insights and assumptions

Data Centre Capacity in 2035

- Low case: **350 MW**
- Median case: **400 MW**
- High case: **700 MW**

Scale in 2060

- Capacity growth after 2035 is linked to GDP growth
- Data centre CAGR (2035–2060): **1.4% to 2.6%**
- Growth above 2035 reflects a slower, more mature phase than the near-term expansion period

Growth Profile

- Rapid growth to 2035
- Slower, GDP-linked growth thereafter
- Reflects transition from expansion to maturity

Estimated Load Factor

- Low case: **42%** *(aligning with NZ Tech)*
- Median case: **58%**
- High case: **70%**

Modelled data centre capacity (MW) and electricity demand (GWh) by scenario

	Capacity (MW)			Electricity demand (GWh)		
Scenarios	2035	2050	2060	2035	2050	2060
Patchwork Nation	350	400	450	1,288	1,472	1,656
Aotearoa electrified	400	500	600	2,032	2,540	3,048
Global green rush	450	600	700	2,286	3,048	3,557
Made in Aotearoa	400	500	650	2,032	2,540	3,303
Aotearoa intelligence	700	1,000	1,300	4,292	6,132	7,972

Data centre capacity

Capacity demand is the installed MW load of data centres and is the main input to the model.

Data centre electricity demand

Electricity demand is the annual energy use, calculated as **capacity demand × load factor × hours per year**.

Assumptions

The model separates the outlook into two periods:

To 2035

- Capacity demand is based on a 2035 assumption from the NZ Tech report, with values rounded down to the nearest 50 MW increment.
- Growth to 2035 is assumed to be linear

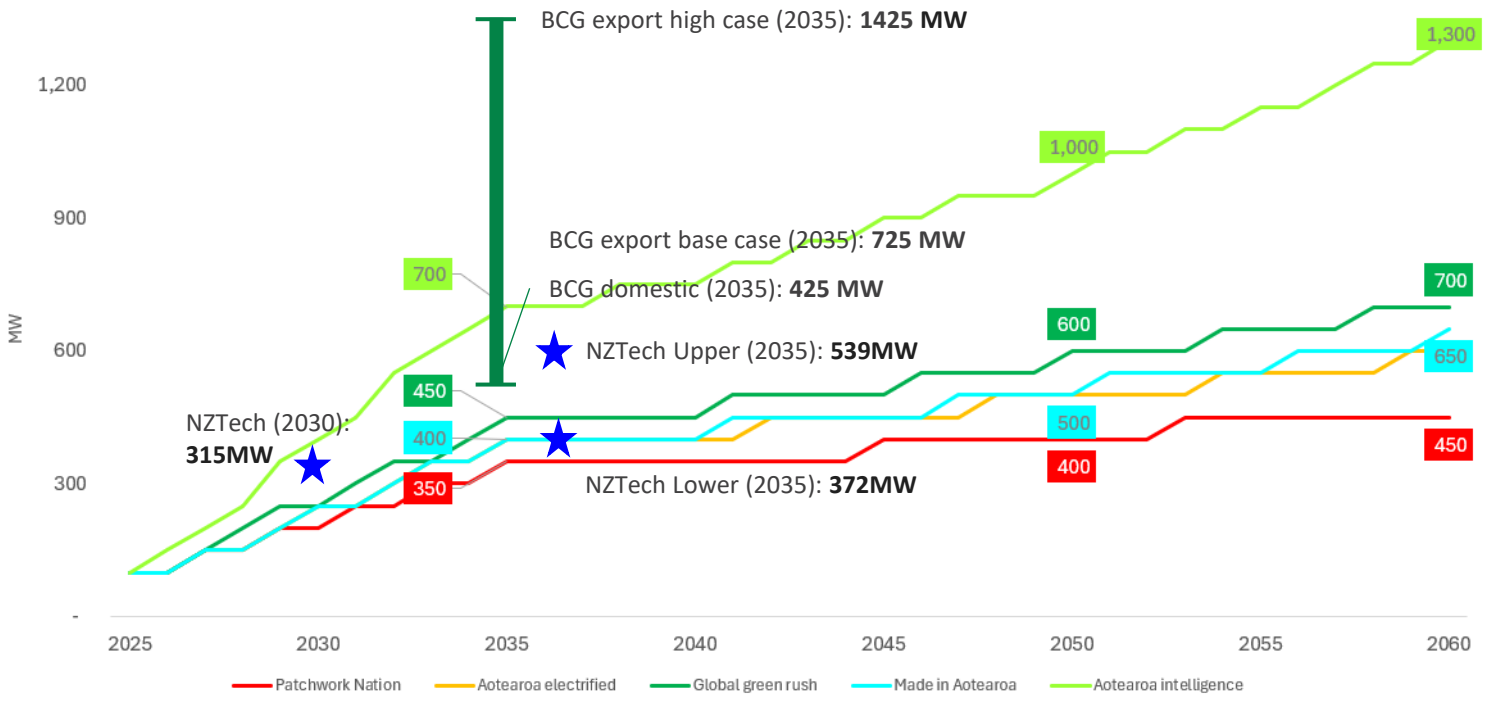
From 2035 to 2060

- Capacity demand grows with GDP
- Scenario differences reflect assumptions on:
  - 2035 capacity demand
  - GDP growth
  - load factor

This reflects faster growth in the near term, followed by slower growth over the long term.

Data centre growth: benchmark comparison and system implications

Data centre capacity (MW) over time by scenario vs External Benchmarks / Forecasts



BCG: NZ data centre capacity scenarios, including export-led pathways (to 2035)

NZTech: NZ data centre capacity forecasts (domestic demand scenarios to 2035)

Data centre capacity outlook

The chart shows modelled data centre capacity growth across scenarios, alongside external benchmarks from NZTech and BCG.

Capacity in 2035 is anchored to NZTech forecasts for selected scenarios, with a range of ~372–539 MW, providing a consistent reference point for near-term development.

Growth is modelled in 50 MW steps, with a linear increase to 2035 and GDP-linked growth thereafter.

Compared with BCG benchmarks, our scenarios are broadly consistent with domestic growth pathways (around 425 MW by 2035), but remain below the more ambitious export-led scenarios (around 725–1,425 MW by 2035).

System implications

- Growth may be lumpy and timing-driven
- Export-led development could accelerate demand
- Implications may extend beyond capacity to energy and system readiness
- Speed to power may increase the importance of connection readiness
- Flexible data centres may be an option for NZ, but are unlikely to replace the need for generation and network investment

Te Kanapu insights: Data centres

About Te Kanapu Insights

This is one of a series of insights from the data that will underpin Transpower's Te Kanapu Future Grid Blueprint.

Insights are based on Transpower data, research and stakeholder engagement, represent a view at a point in time and are subject to change.

Glossary

BCG: Boston Consulting Group

CAGR: Compound annual growth rate

GDP: Gross domestic product

MW: Megawatt

For more information:

Email us: feedback@transpower.co.nz

Visit: Te Kanapu technical approach