RENEWABLE ELECTRICITY ON THE HORIZON

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Mercury

MERCURY: OUR BUSINESS TODAY

> 100% renewable NZ electricity generator (hydro, geothermal & wind)

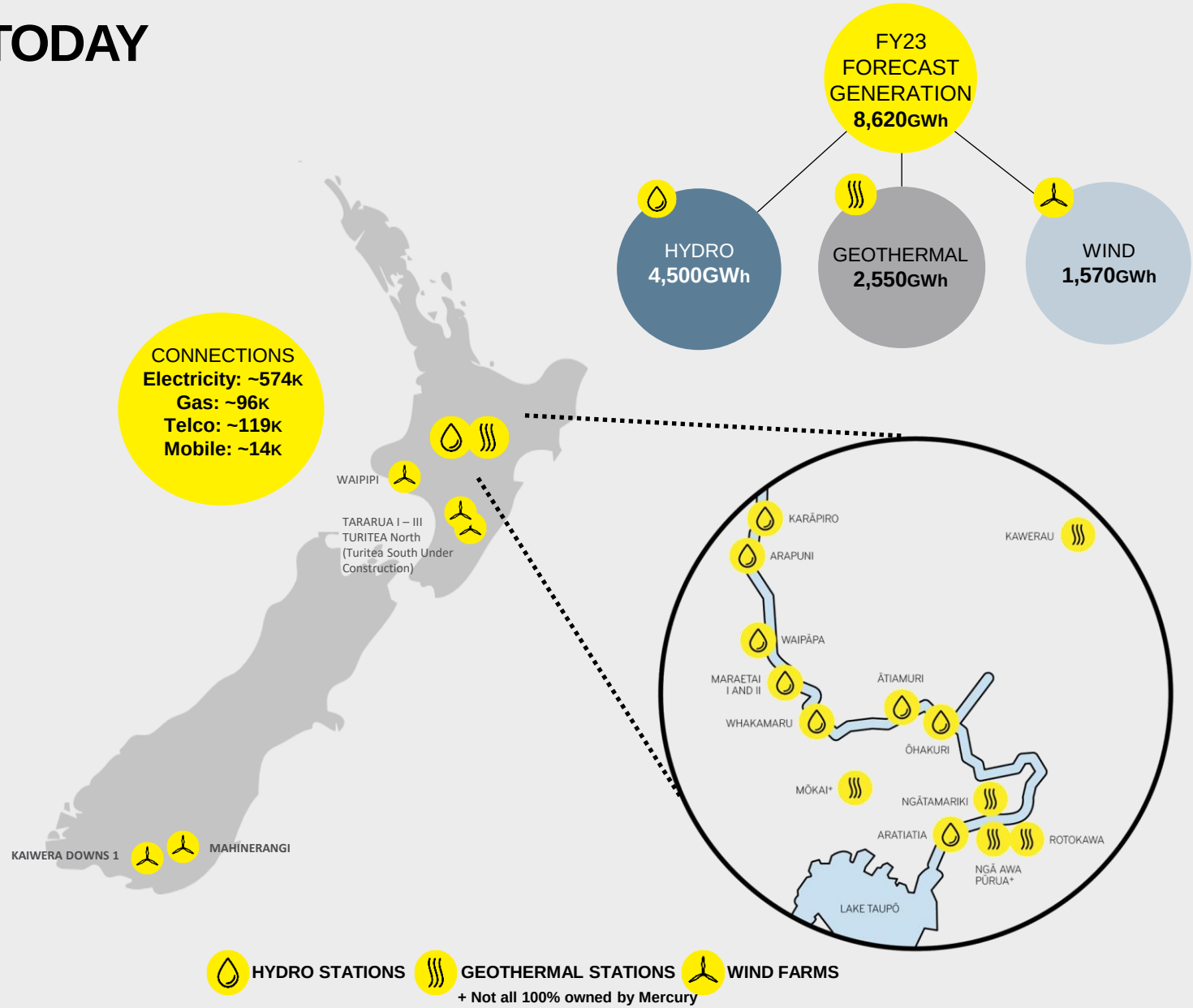
> Multi-product utility retailer of electricity, gas, broadband and mobile services focused on delivering wonderful solutions for New Zealanders at home, at work and on the move.

> New Zealand's second largest gentailer by value ($7.6B),[1] NZ's largest wind generator and NZ's largest electricity retailer by customer market share (26%)

> 74k shareholders. 51% owned by the New Zealand Government, 25% institutional (9% from NZ) and 24% retail.

> 1,335 employees

> ~580k customers



[1] As at 1 December 2022

KEY HIGHLIGHTS

$413M OVER 10 YRS

NEW AND EXISTING

GEOTHERMAL GENERATION

$300M OVER 10 YRS

HYDRO REFURBISHMENT

PROGRAMME

$600M OVER 3 YRS

NEW WIND GENERATION

CUSTOMER CARE FOCUS

7 MAJOR INITIATIVES

CURRENTLY UNDERWAY

7 FORMAL IWI RELATIONSHIPS

OVER 21 YEARS

3 RENEWABLES PROJECTS

162MW MORE RENEWABLES

UNDER CONSTRUCTION

SUMMARY

> The generation needed to decarbonize New Zealand

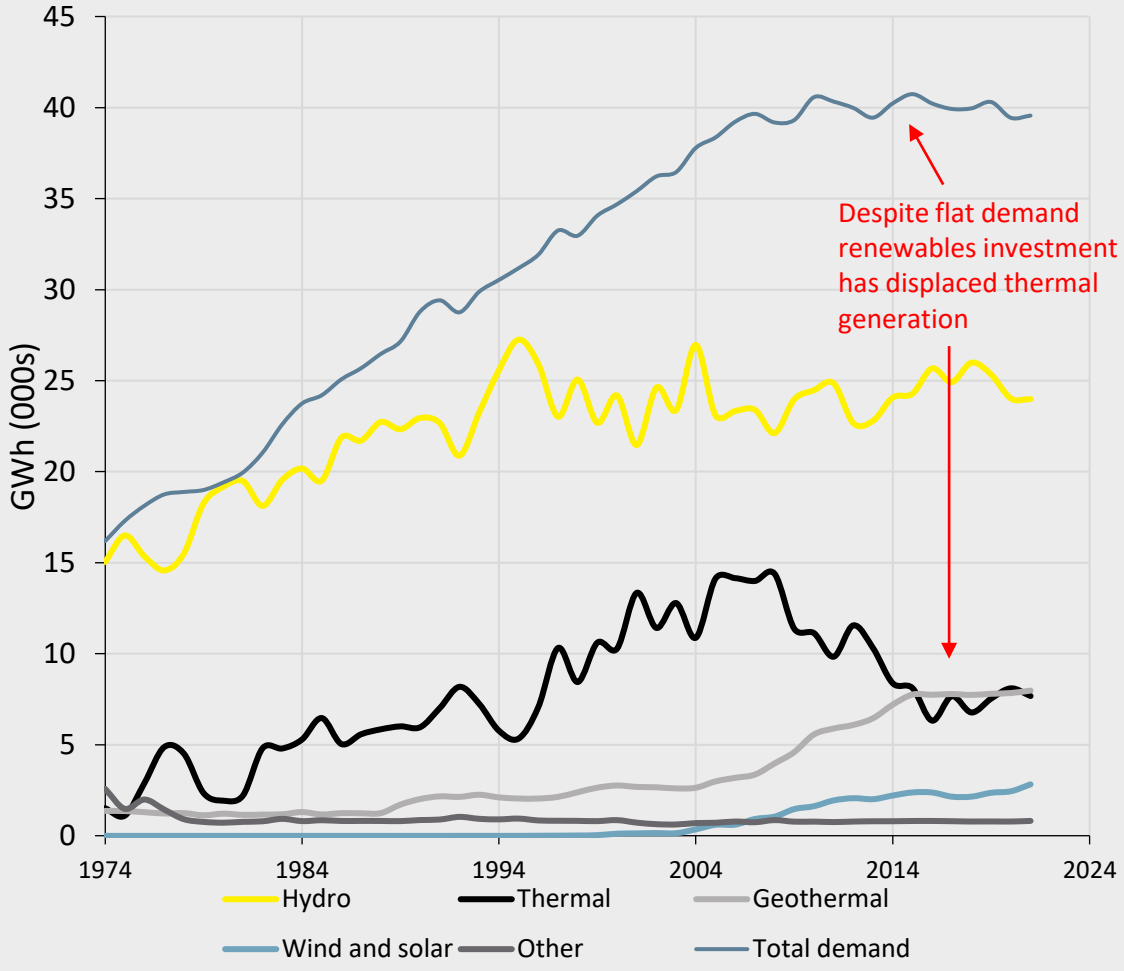
> How Mercury is going to deliver more renewable generation

> Reflections on the key challenges to navigate

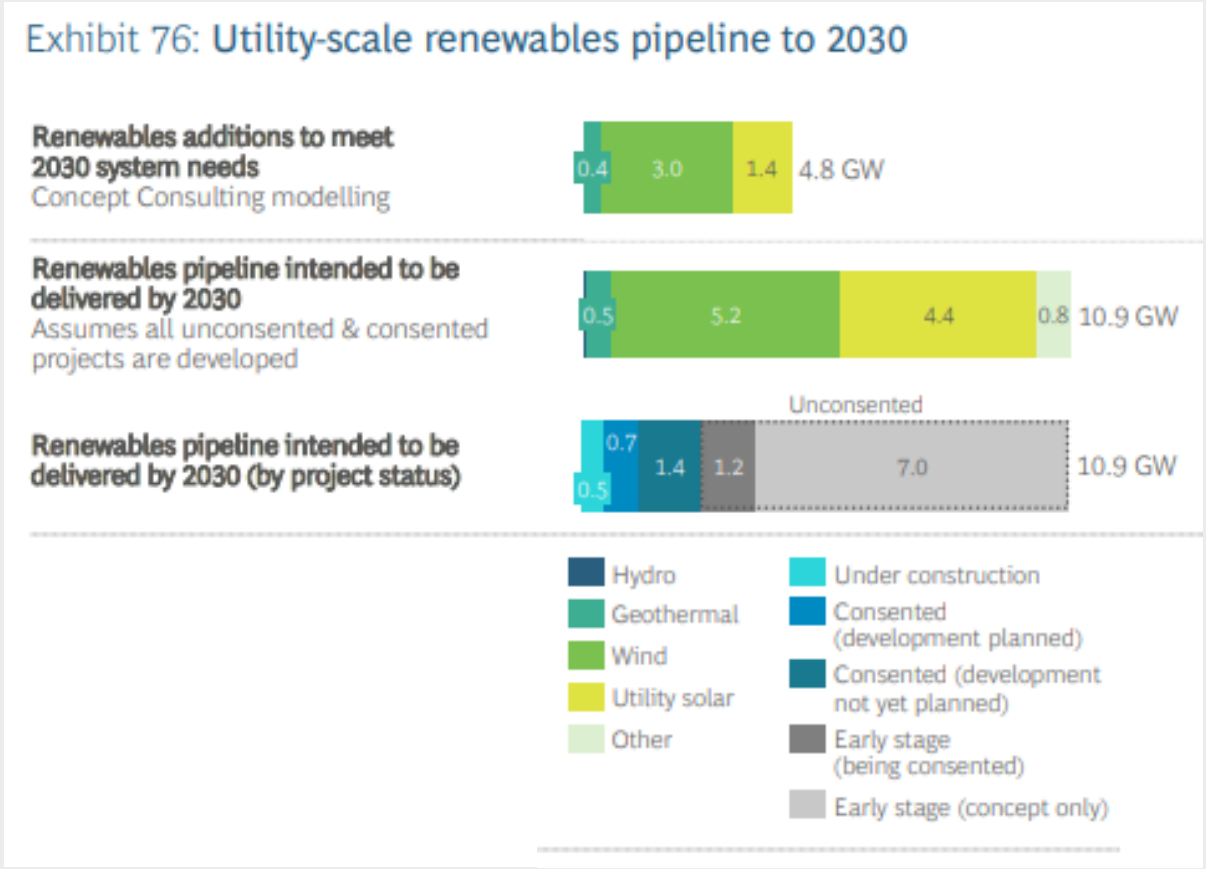
> Innovations Mercury sees coming in the Generation space

RENEWABLES INVESTMENT SUPPORTS DECARBONISATION

New Zealand Historical Electricity Generation By Type



Sector pipeline of renewables well placed to meet 2030 demand

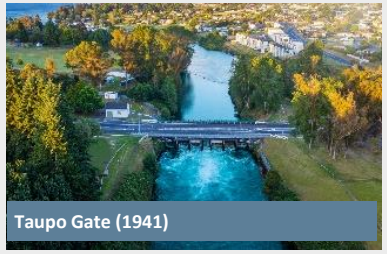


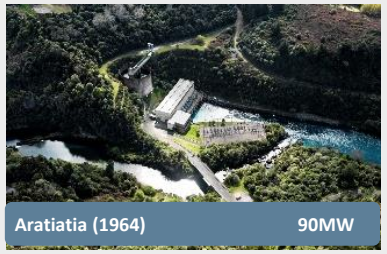
Source: Concept Consulting modelling; BCG analysis; Transpower (BCG The Future is Electric – November 2022)

Source: MBIE, Annual electricity generation and consumption

DEVELOPMENT OF MERCURY COMPLEMENTARY ASSETS

10 x HYDRO ASSETS: 1,112MW[1] ~4,060GWh


Taupo Gate (1941)


Aratiatia (1964) 90MW


Ohakuri (1961) 112MW


Ātiamuri (1958) 84MW


Whakamaru (1956) 124MW


Maraetai I & II (1950 & 1970) 360MW

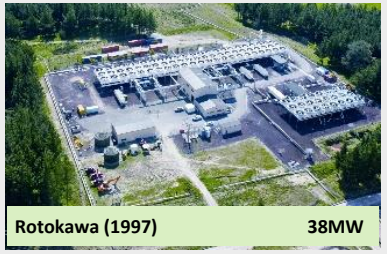

Waipapa (1961) 51MW

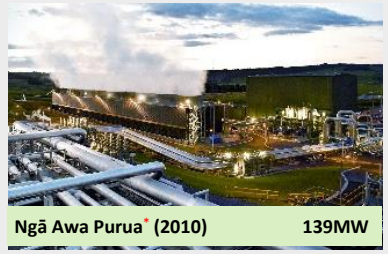

Arapuni (1929) 198MW


Karāpiro (1946) 96MW

5 x GEOTHERMAL ASSETS: 466MW[1] ~2,867GWh


Kawerau (2008) 106MW


Rotokawa (1997) 38MW


Ngā Awa Purua* (2010) 139MW

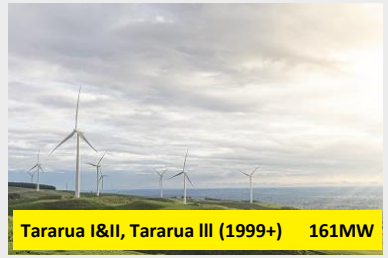

Ngā Tamariki (2013) 85MW

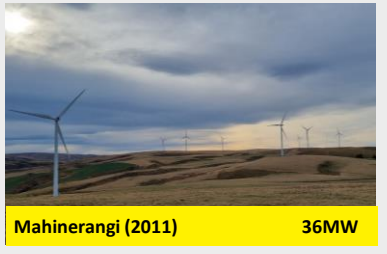

Mōkai* (2000) 100MW

6 x WIND ASSETS: 594MW ~2000GWh


Turitea (2020) 221MW


Waipipi (2021) 133MW


Tararua I&II, Tararua III (1999+) 161MW


Mahinerangi (2011) 36MW


Kaiwera Downs (2023) 43MW

[1] Total Maximum Continuous Rating | * Not 100% owned by Mercury

DELIVERING NEW RENEWABLES A KEY FOCUS FOR MERCURY…

FORWARD PIPELINE OF DELIVERY

Under construction - 520GWh pa

> Turitea South Wind Farm – complete Q2 2023.

> Kaiwera Downs Stage 1 Wind Farm – complete Q3 2023.

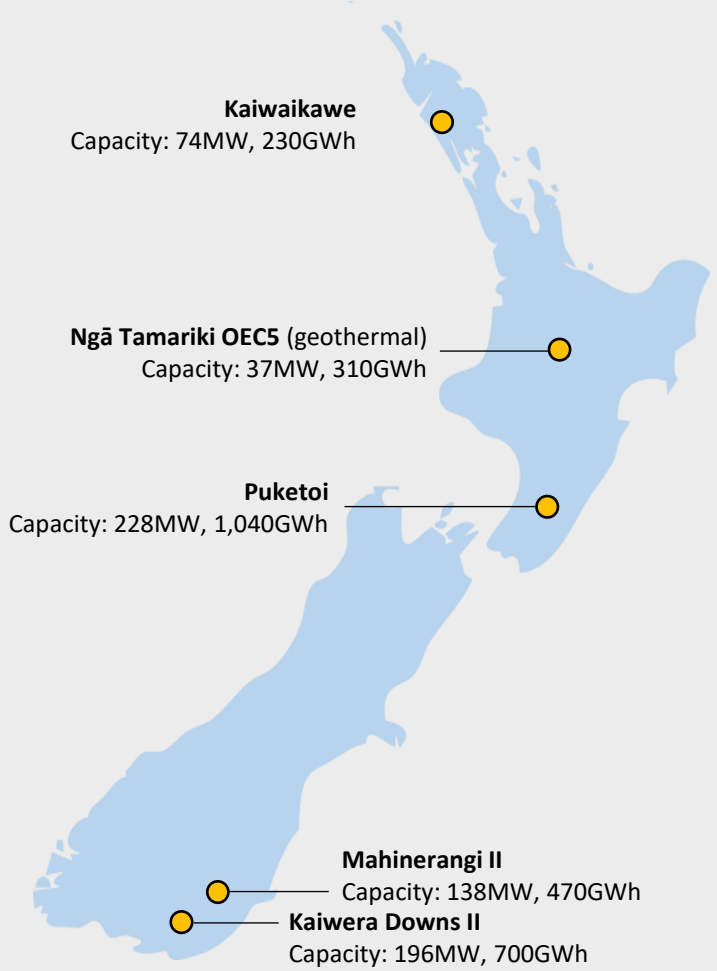
Consented - 2,430GWh pa

> Four consented on-shore wind farm projects (see map).

In consenting - 310GWh pa

> 5th binary unit at Ngā Tamariki geothermal station (OEC5)

Also considering early-stage options across wind, geothermal, battery and solar.



…AS IS PROTECTING AND ENHANCING OUR EXISTING ASSETS

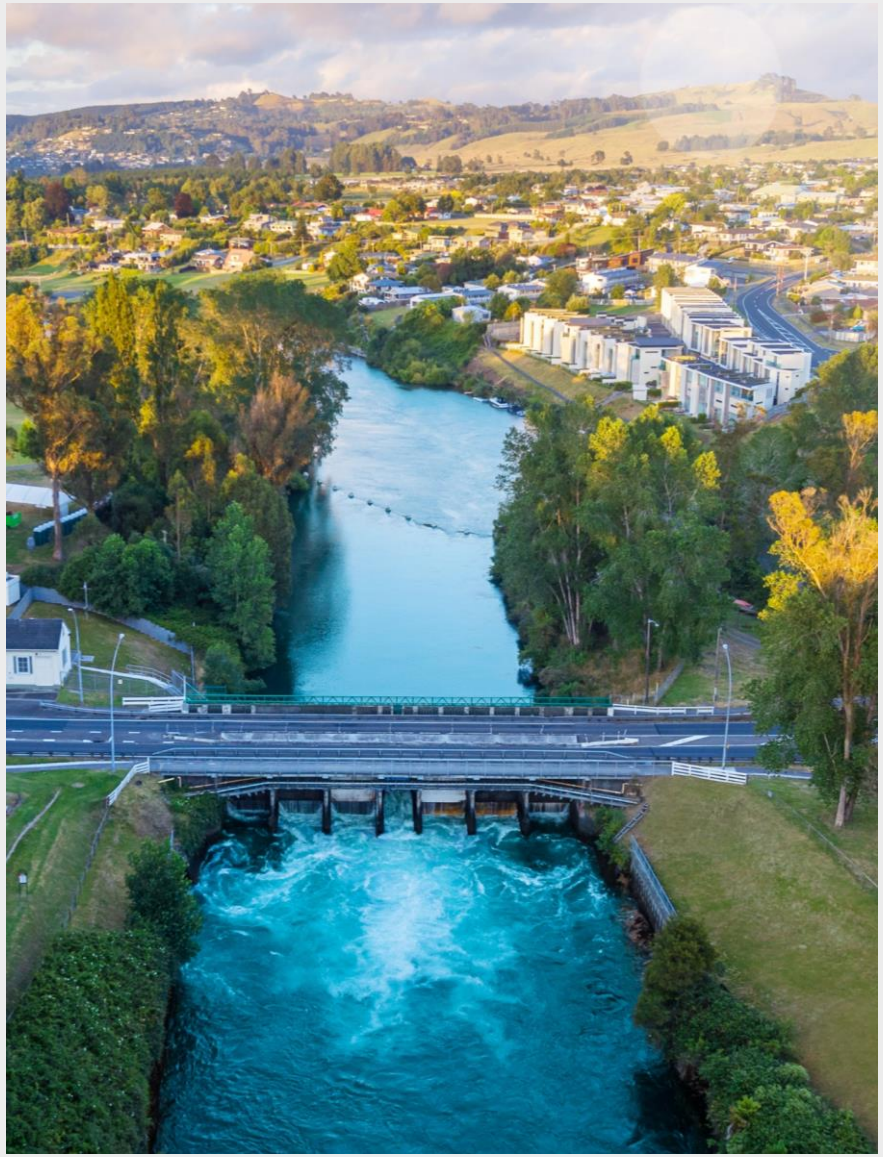
> Significant investment in upgrading and maintaining legacy equipment

> Updated technology means that generation is more efficient

> Nine hydro power stations: upgrade program across 39 units and ancillary equipment (including modernisation of safety assets)

> Ongoing schedule of geothermal maintenance annual shuts

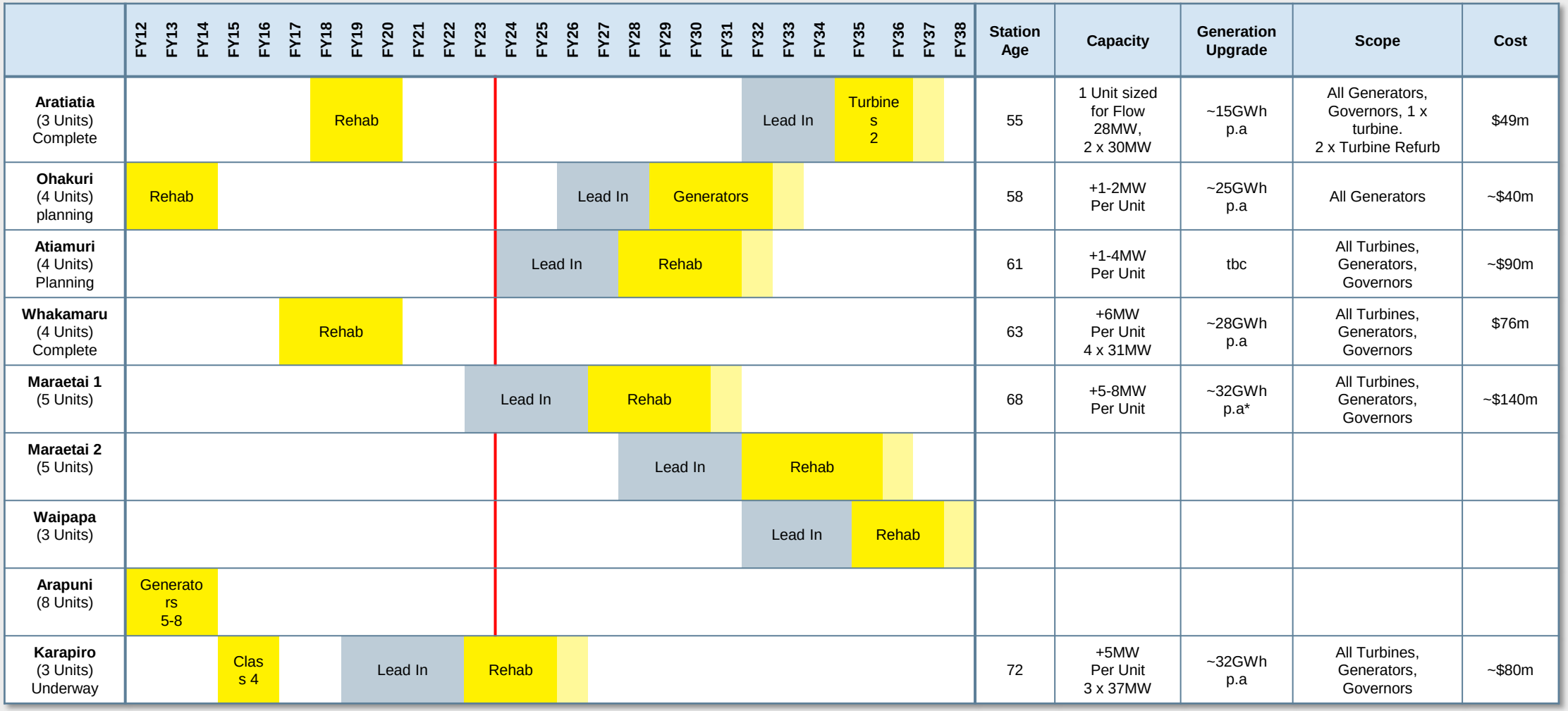
> Wind farm performance monitored, asset life extension for Tararua 1&2 turbines under consideration



THE RELIABILITY LEG OF THE ENERGY TRILEMMA

	MERCURY Hydro	MERCURY Geothermal	MERCURY Wind
Location	**Central North Island**	**Central North Island**	**Central North Island (dominant)**
Operating Role	Peaking, firming, frequency, reserves	Baseload (24/7)	Intermittent
Capacity factor	On average 50-60% but ranges from 30-70%	94-97%	~43%
Strengths	Flexible, fast start, large capacity, comparatively slower machines, more gradual decline of asset condition	Weather independent, high availability	Complementary to hydro, comparably high capacity factor
Variables	Hydrology dependent but inflows positively correlated with winter demand, ~580GWh of storage	Dynamic fuel, single shaft risk, faster machines with potential for more rapid decline of asset condition	Wind dependent
Maintenance cycles	Continuous but targeting high availability in winter	Minimum two-yearly due to baseload, single shafts	Long-term maintenance agreement with availability guarantees

CHALLENGE TO MAINTAIN AND ENHANCE PEAKING CAPACITY



	Station Age	Capacity	Generation Upgrade	Scope	Cost
Aratiatia (3 Units) Complete	55	1 Unit sized for Flow 28MW, 2 x 30MW	~15GWh p.a	All Generators, Governors, 1 x turbine. 2 x Turbine Refurb	$49m
Ohakuri (4 Units) planning	58	+1-2MW Per Unit	~25GWh p.a	All Generators	~$40m
Atiamuri (4 Units) Planning	61	+1-4MW Per Unit	tbc	All Turbines, Generators, Governors	~$90m
Whakamaru (4 Units) Complete	63	+6MW Per Unit 4 x 31MW	~28GWh p.a	All Turbines, Generators, Governors	$76m
Maraetai 1 (5 Units)	68	+5-8MW Per Unit	~32GWh p.a*	All Turbines, Generators, Governors	~$140m
Maraetai 2 (5 Units)					
Waipapa (3 Units)					
Arapuni (8 Units)					
Karapiro (3 Units) Underway	72	+5MW Per Unit 3 x 37MW	~32GWh p.a	All Turbines, Generators, Governors	~$80m

> 2017-2032 ~$475m total investment

CASE STUDY: KARĀPIRO POWER STATION

> Power station originally commissioned in 1946

> $80m investment over 6-year project (from 2019)

> Extends asset life by 50 years: replacement for all three generating units including generators, turbines and governors.

> Updated technology means that generation is more efficient:

- provides an additional 5MW per unit,
- increasing capacity from 96MW to 112.5MW (32GWh/year).

GEOTHERMAL FUEL SUPPLY SECURED FOR THE LONG TERM

Drilling campaign FY23-FY25: eight “make up” wells and one well repair.

The campaign will see an investment of $128m[1] and is due to be completed in late 2024.

Field	Well	FY23-FY25	FY26-FY30[3]
Kawerau	Production	2	1
	Injection	1	1
Ngā Tamariki[2]	Production	1	0
	Injection	1	0
Rotokawa Joint Venture (Mercury / TN2T)	Production	3	1
	Injection	0	1
Total		8	4

[1] typical standard deep well project cost is ~$14m, inclusive of well pad preparation, construction and pipeline installation
[2] supports OEC5 upgrade I [3] Historic average drilling rate 2014-2020 is 1.2 wells/year. Forward projection drilling rate circa 1.3 wells/year.

CASE STUDY: NGĀ TAMARIKI – INCREASING GEOTHERMAL CAPACITY

> Project under development to add a fifth generating unit (OEC5) at Ngā Tamariki Power Station.

> Increase generation by ~37MW (314GWh/year), increasing total station capacity to ~123MW (net)

> The fifth unit (OEC5) will be installed in an area of the site already established for future expansion

> Ongoing care for health and sustainability of geothermal reservoir

NAVIGATING CHALLENGES OF THE TRANSITION

Action needed in number of key areas to support trilemma:

> Supporting REG consenting

> Right mix of energy and capacity

> Focus on stimulating demand

> Enable smart network innovation / flexibility

> Skills and expertise / capacity

> Industry and government collaboration

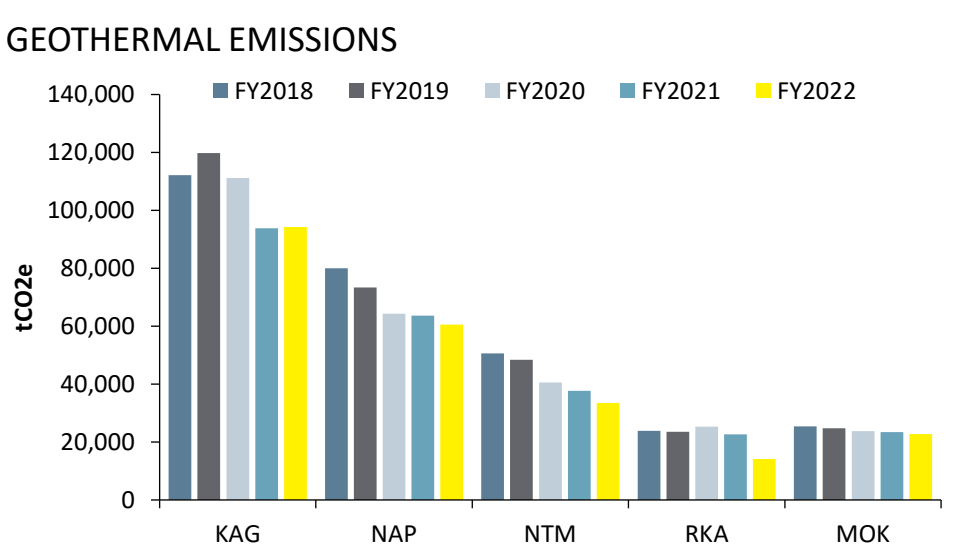
INNOVATION SUPPORTING DECARBONISATION

Reducing geothermal carbon emissions

> Developing technology to re-inject geothermal emissions (working with others in the sector).

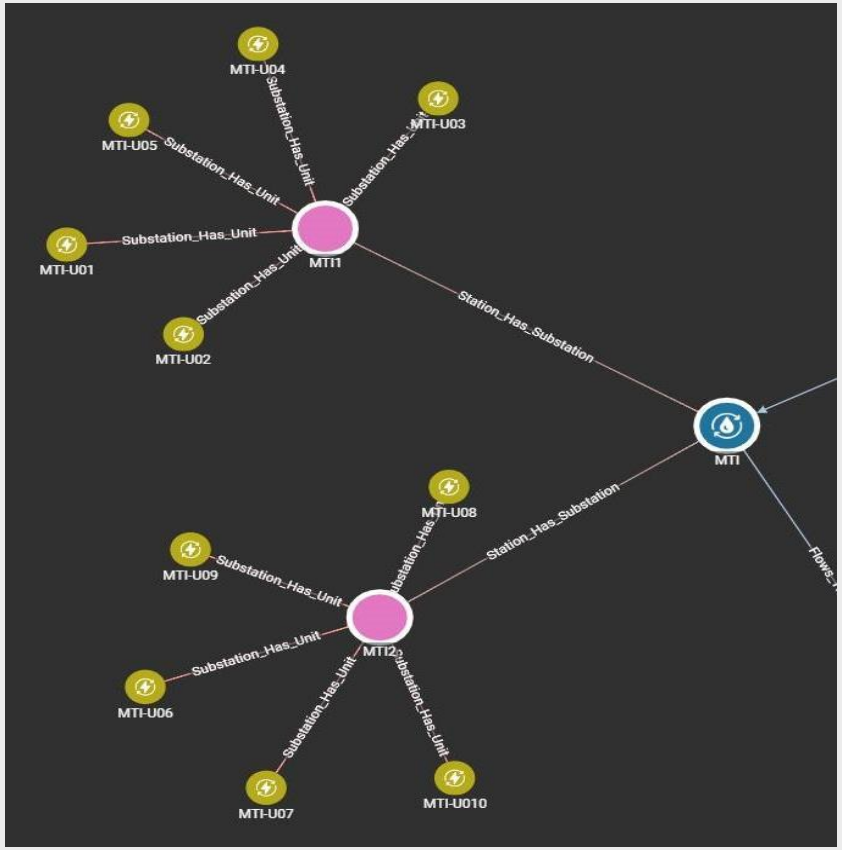
> Ngā Tamariki reinjected over 8k tonnes CO_2-e (~25% of total station emissions/yr).

> Carbon dioxide can also be used to create renewable fuels such as Methanol through combination with green Hydrogen.



Supporting asset efficiency and reliability

> Digital River: Creating a digital twin of the Waikato Hydro Scheme to inform better dispatch decisions. Technology can be applied to other assets.



SUMMARY

> There is enough generation in the pipeline

> Mercury is a leader in renewable generation development

> Numerous challenges to navigate – including in reliability of our base and peaking plants

> Innovations in the Generation have only just begun

> There is a lot more to do – and we’re up for that challenge!