



New Zealand's Energy and Geothermal Future: Opportunities and Challenges

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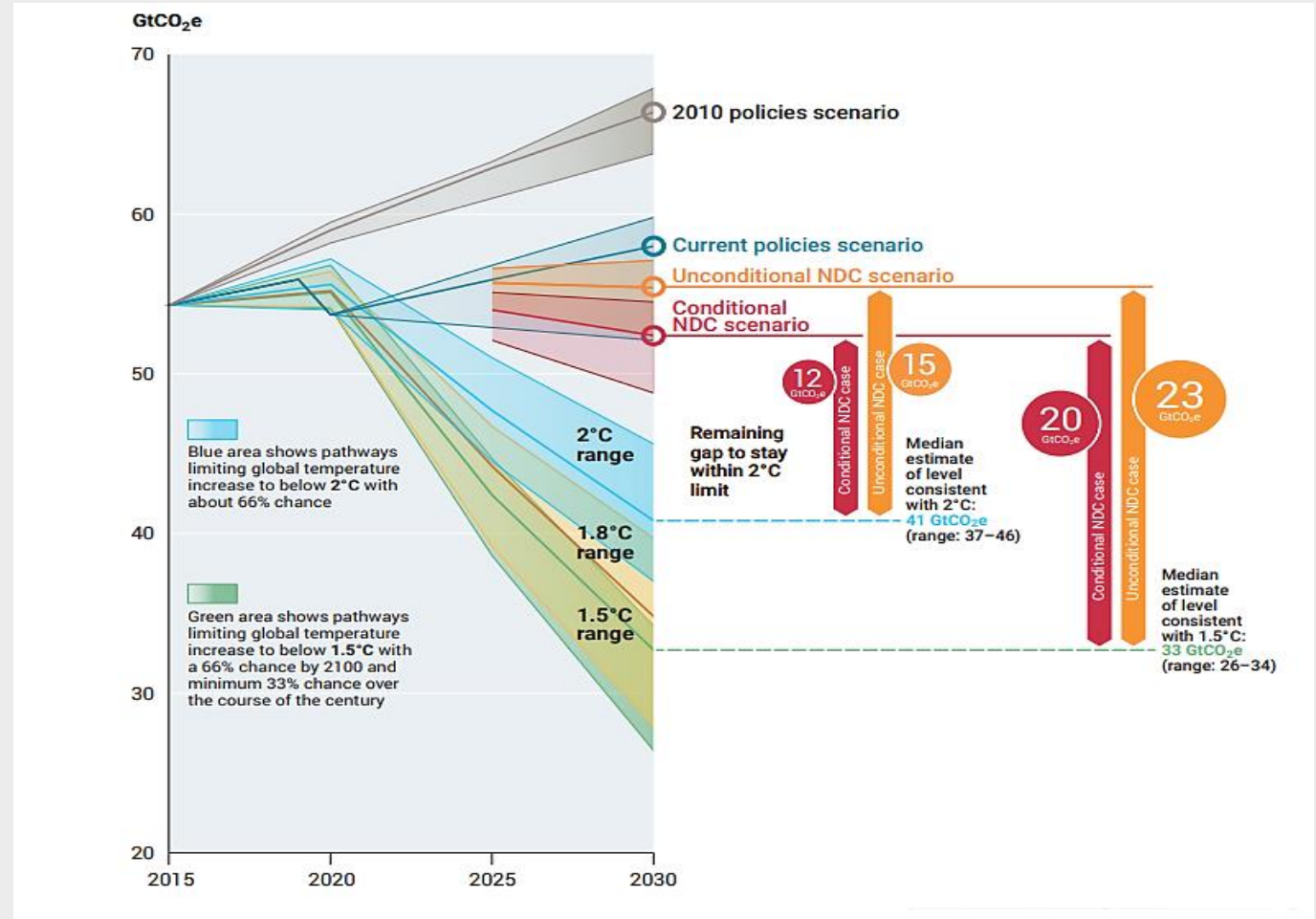


CLOSING WINDOW FOR ACTION

- > International community falling short of the Paris goals, no credible pathway to 1.5°C in place.
- > Even with full implementation of unconditional and conditional NDC¹s the 2.0°C emissions gap is still 12 GtCO₂e.
- > Current policies point to a 2.8°C temperature rise by 2030.

¹ NDC = nationally determined contribution

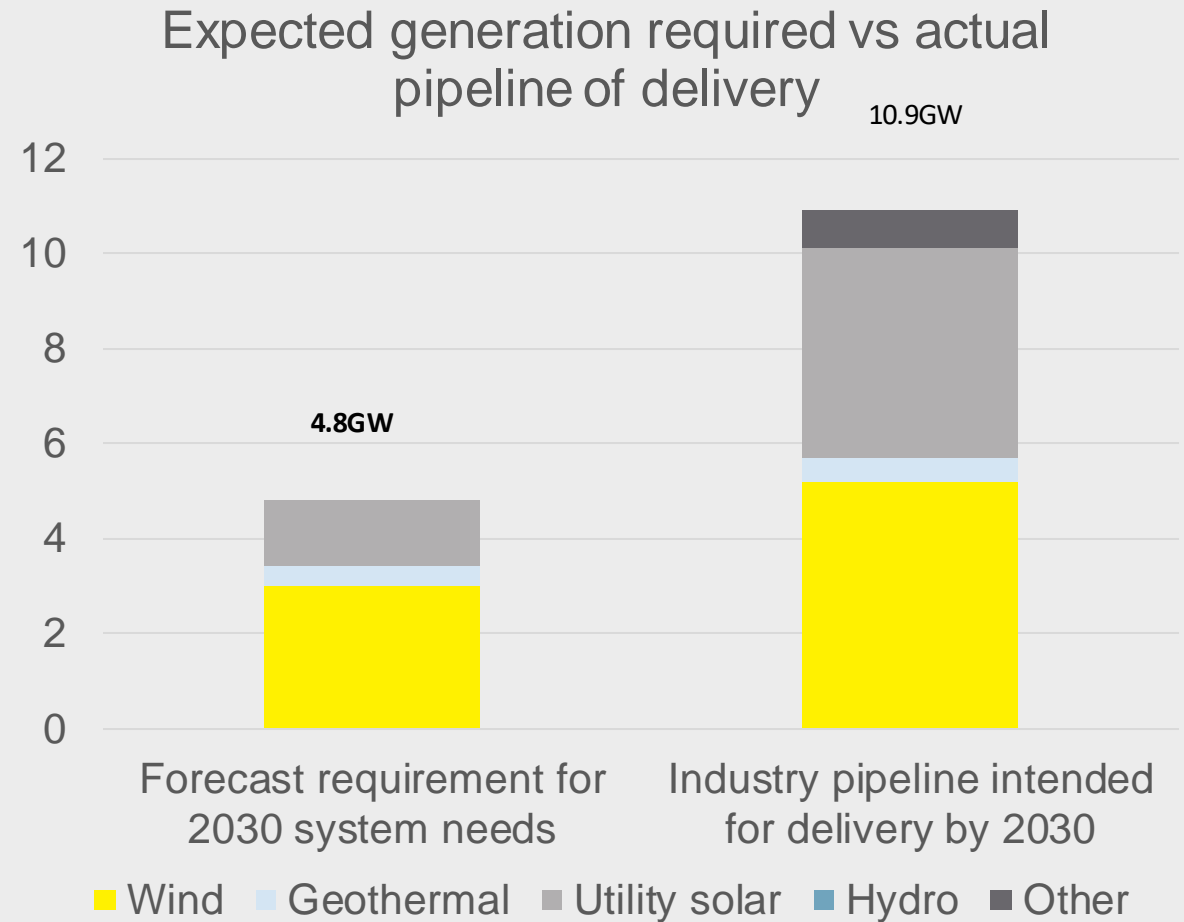
UN 2022 Emissions Gap Report: Global GHG emissions under different scenarios and the emissions gap in 2030



THE NEW ZEALAND STORY

By 2030 we could achieve:

- > 98% renewable electricity
- > High degree of electrification
- > 10% reduction in household energy bills
- > Improved energy independence & resilience

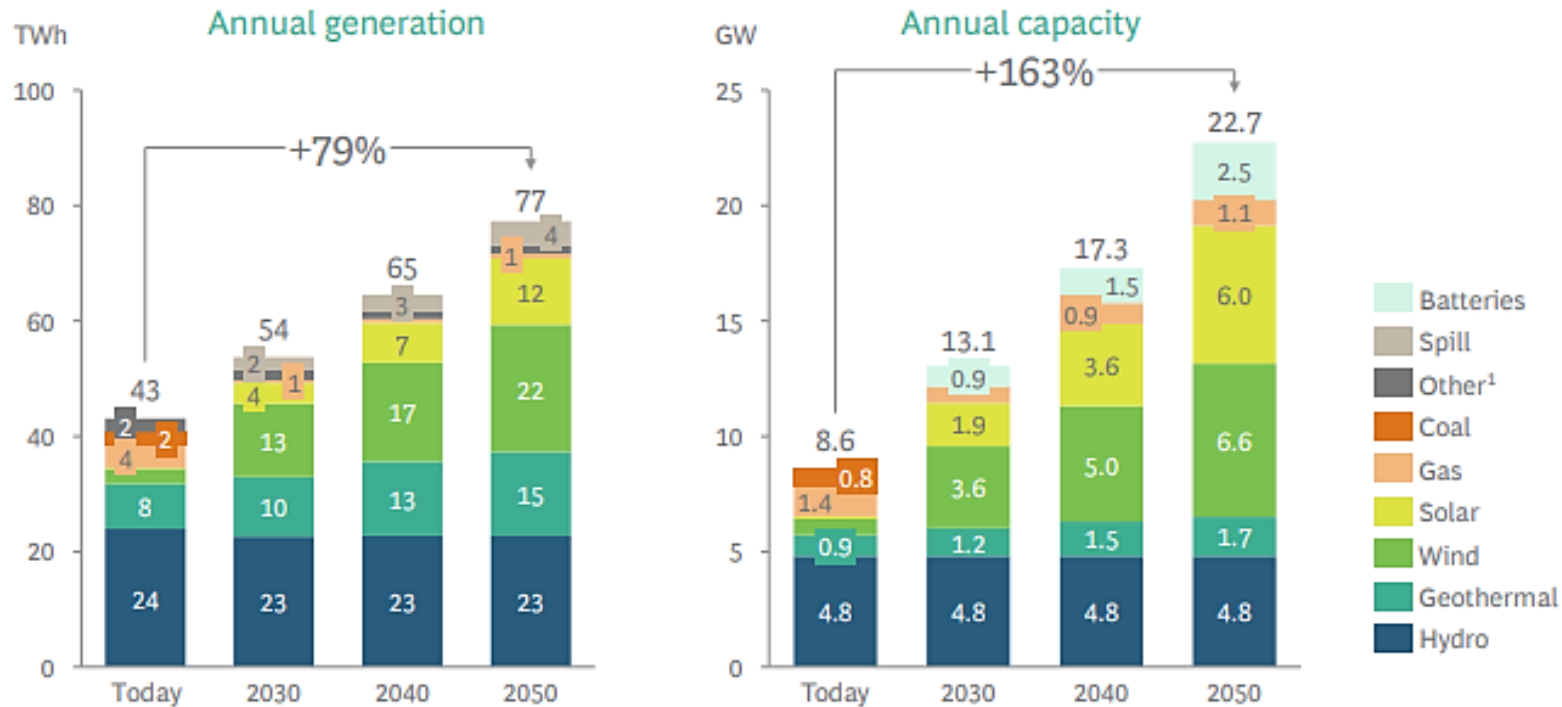


Source: BCG 'The Future is Electric' 2022



THE SCALE OF THE CHALLENGE

Generation and capacity need to increase significantly over next 3 decades

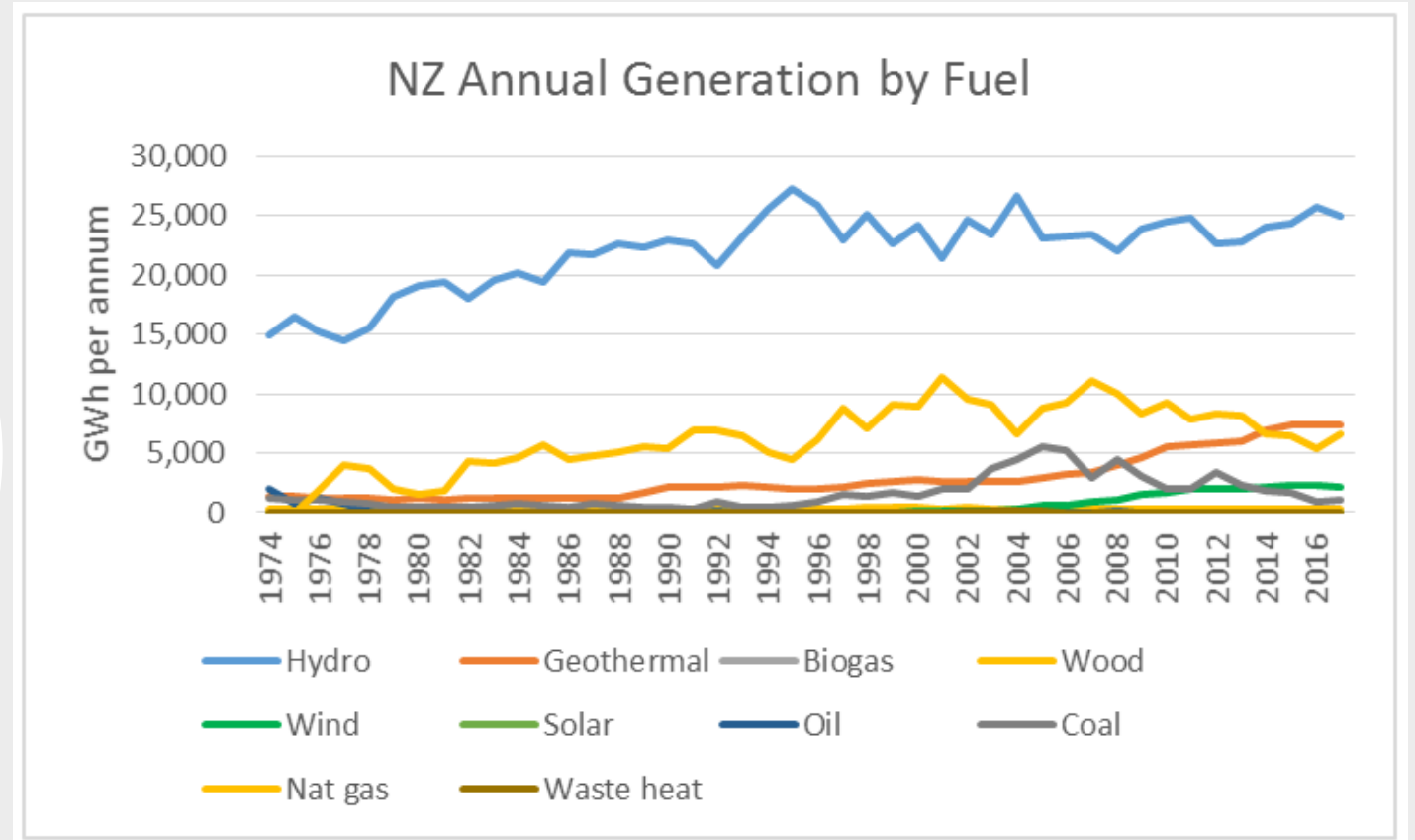
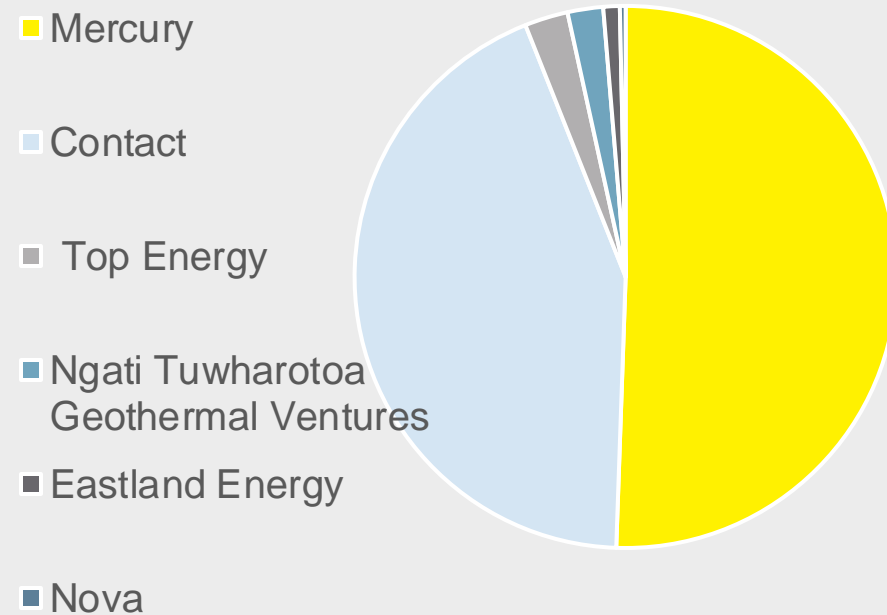


1. Development of new renewable generation at **sufficient pace**
2. Sufficient flexible demand and generation capacity to meet **increasing peak demand**
3. Sufficient flexible demand and generation energy to meet **dry year energy needs** when less hydroelectric generation is available
4. Sufficient **network infrastructure**



THE ROLE OF GEOTHERMAL

New Zealand geothermal generators by market share



Credit: <https://www.nzgeothermal.org.nz/geothermal-in-nz/what-is-geothermal/>



TAKING GEOTHERMAL TO NEXT LEVEL



Credits: National Library of New Zealand; <https://teara.govt.nz>

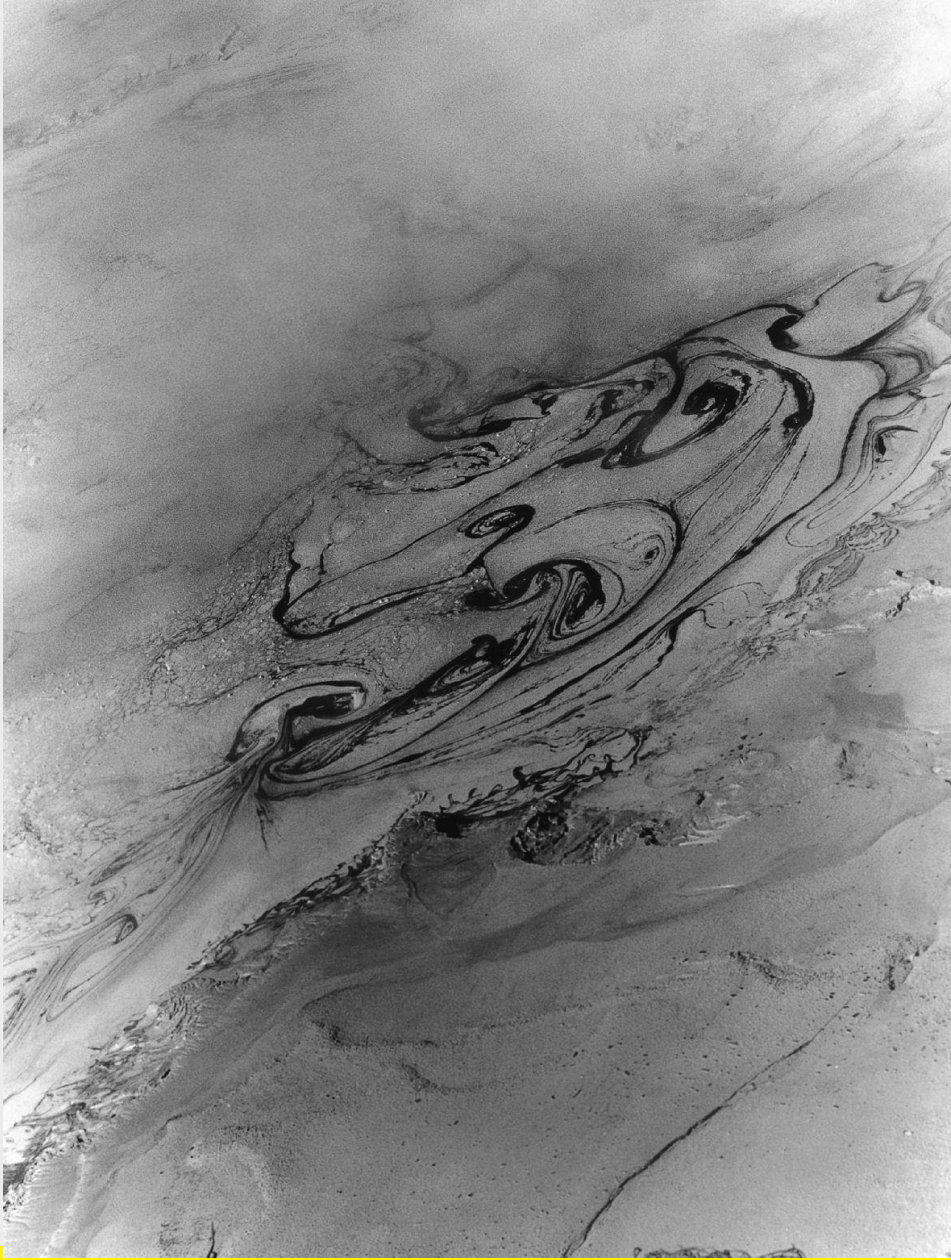
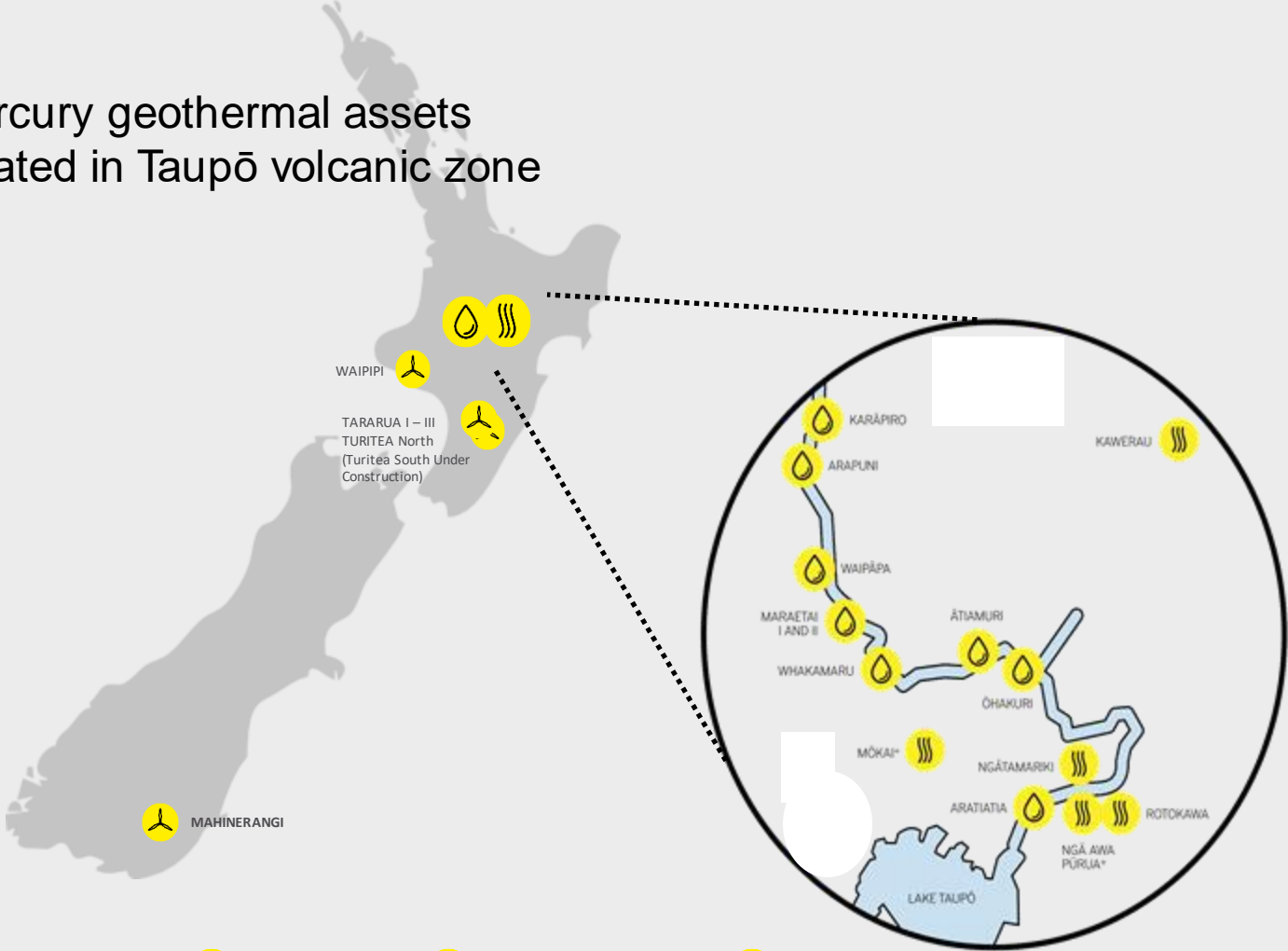


CONSIDERATIONS FOR AN EVOLVING ENERGY SOURCE

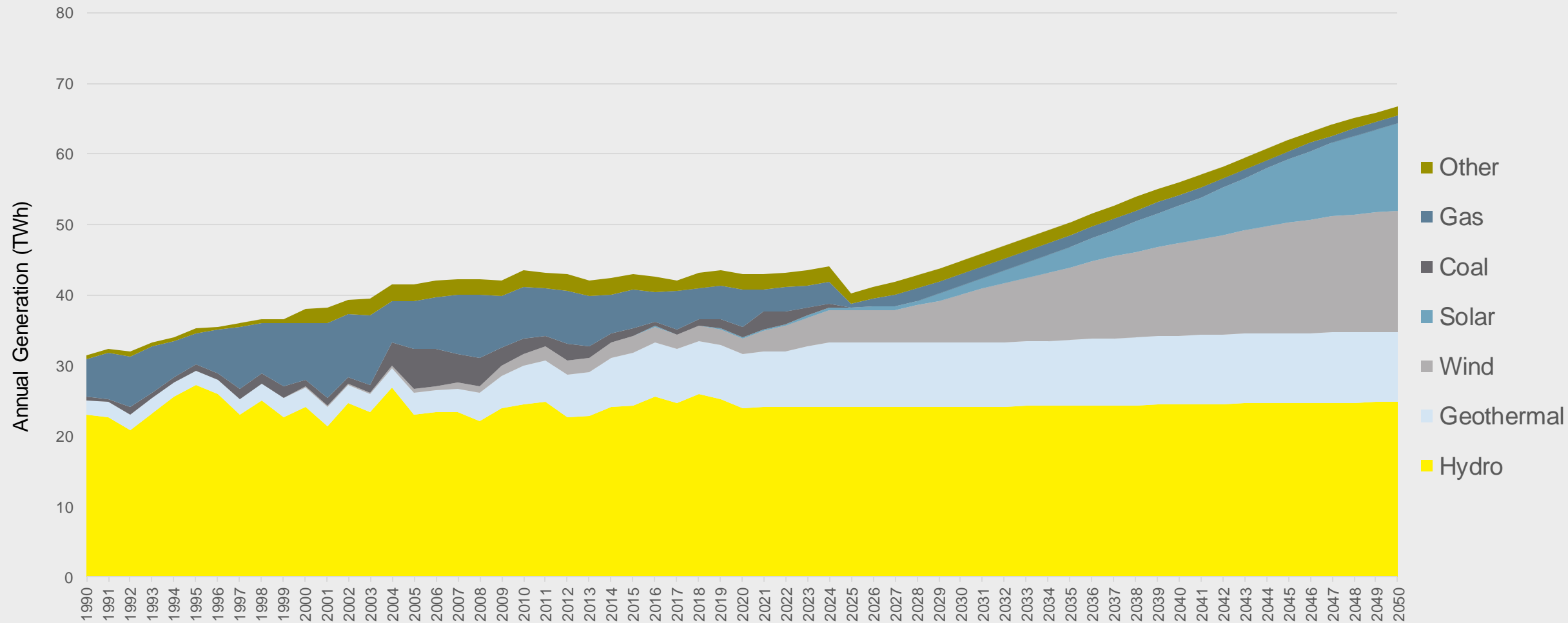


WE WATCH WITH INTEREST

Mercury geothermal assets
located in Taupō volcanic zone



IMAGINING NZ'S ENERGY FUTURE



Source: NZ Climate Change Commission final advice -“demonstration path”. Assumes Tiwai smelter exit at 2024.



