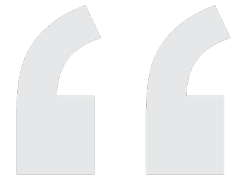


# Enabling Murihiku through infrastructure

Ross Copland, Chief Executive

24 May 2023



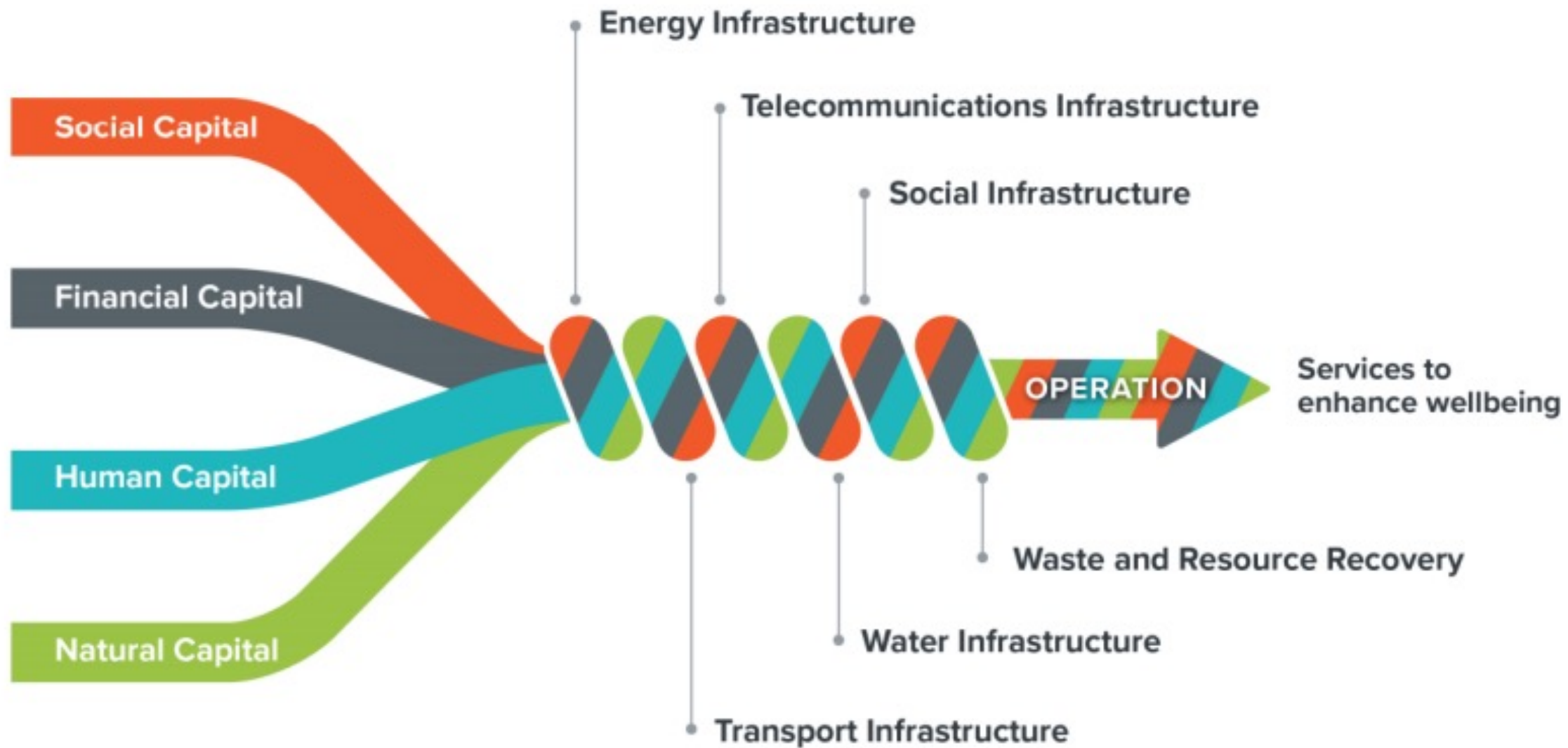


**Infrastructure is all about moving things around. Goods. Energy. Data. Ideas.**



**Geoff Cooper**

GM Strategy – Te Waihanga





# Looking Ahead:

## The infrastructure challenge



We need to spend **\$60 on maintenance** and renewal for every \$40 we spend on new infrastructure



Infrastructure construction costs have risen **60% faster than prices** elsewhere in the economy



New Zealand will have a shortfall of **118,500 construction workers** in 2024



Half of population growth will be in **five major centres**



New Zealand's population will grow to **6.2 million people** (or more) over 30 years



**115,000 more homes** are needed to fix the current housing crisis



There is a **75%** chance of an Alpine Fault earthquake by 2070



By 2050 **one in four NZers** will be over the age of 65



**\$90 billion** to fix up water networks



**\$5 billion** of council infrastructure is exposed to sea level rise



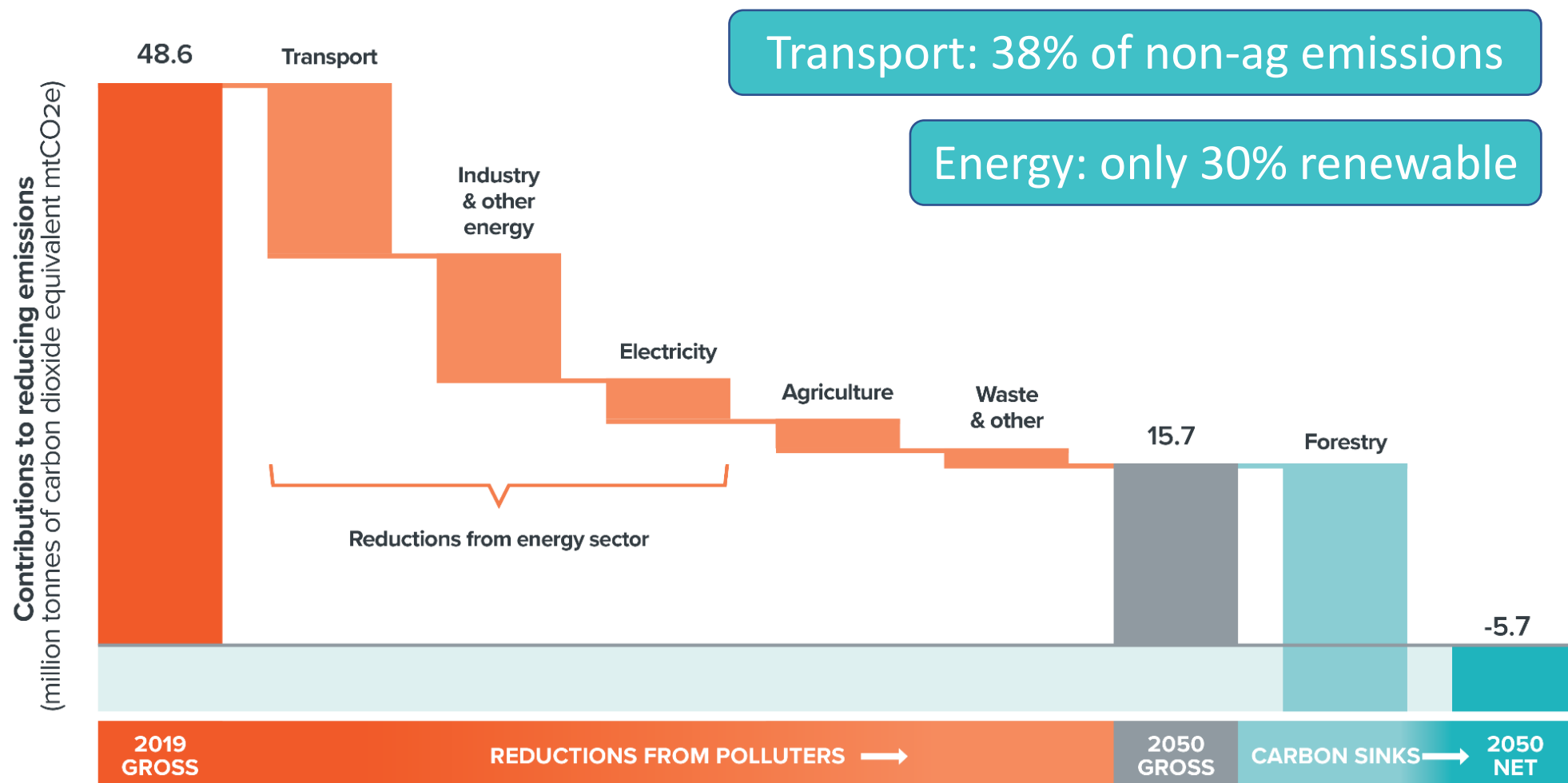
Electricity generation capacity needs to **increase by 170%**



The average Auckland commuter spends over **5 days in traffic** per year

# Climate change is an infrastructure problem

**Contributions to reducing emissions (million tonnes of carbon dioxide equivalent)**



Source: Te Waihangā, adapted from Statistics New Zealand (2021)



# Rautaki Hanganga o Aotearoa

New Zealand  
Infrastructure Strategy

2022 - 2052

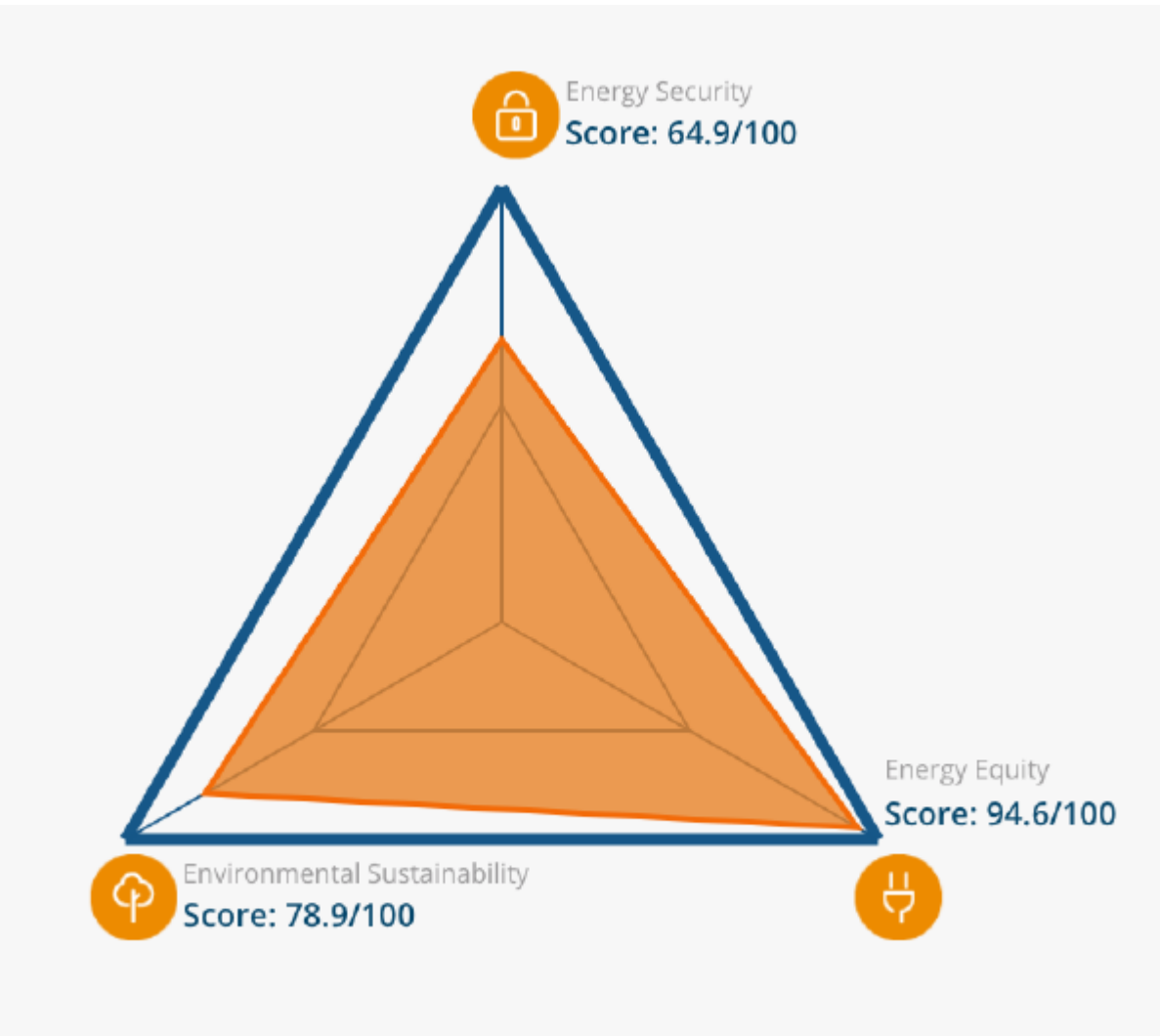


## Renewable Energy Recommendations

- Rec 5** – Achieve net-zero carbon emissions at minimum cost.
- Rec 6** – Speed the build of low-emissions energy infrastructure to leverage our abundant resources.
- Rec 16** – Reduce costs by optimising infrastructure corridors.
- Rec 18** – Standardise planning rulebooks.
- Rec 38** – Strengthen government as a sophisticated client of infrastructure.



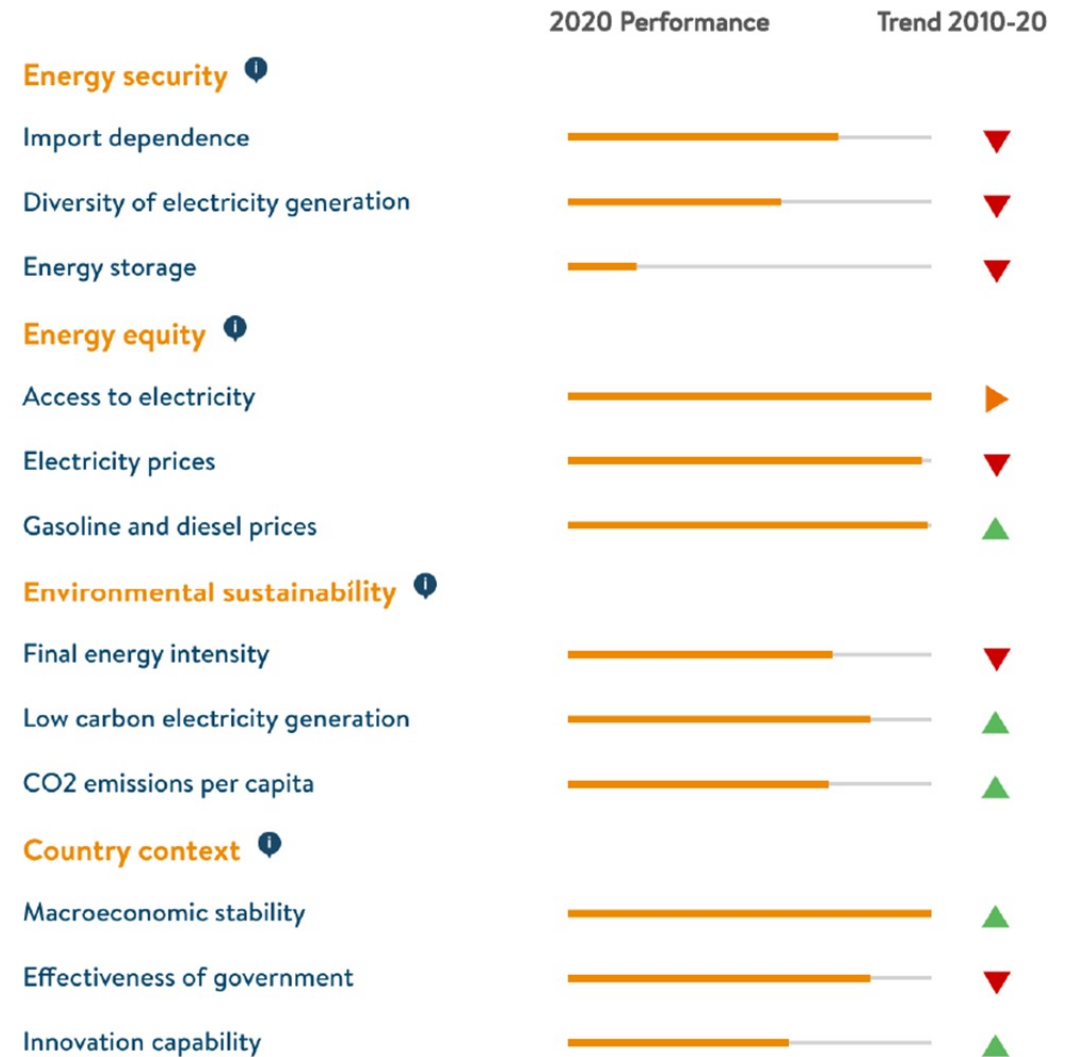
# World Energy Council Energy Trilemma



# New Zealand scores 10th

## Key metrics

Metrics are determined relative to other countries, with a full bar representing a score of 100.







## Over 5GW of new generation will be needed<sup>1</sup>

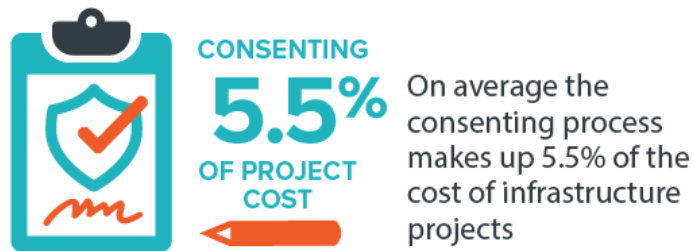
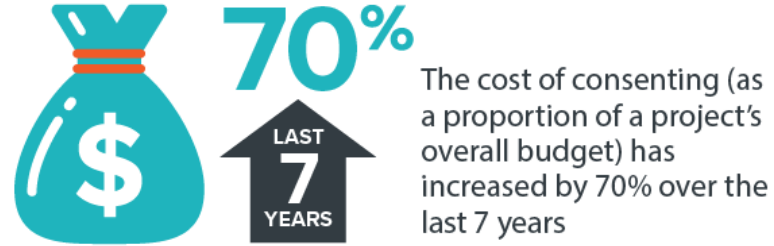
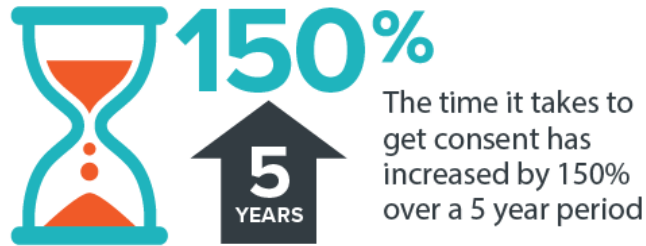
- To meet the government's target of 100% RE by 2030.
- Driven by growth in EVs and electrification of process heat.
- Represents more than a **50% increase** over our existing national generating capacity.
- We need roughly 1 Clyde dam annually (494MW) to 2050 to meet our net-zero carbon goal.<sup>2</sup>
- An 'over-build' of generating capacity is required.

<sup>1</sup> "Accelerated Electrification." Interim Climate Change Committee, p48 & p51, 30 April 2019

<sup>2</sup> C. Hansen, "Leveraging our energy resources to reduce global emissions and increase our living standards, 2022.



# Consent costs are out of control

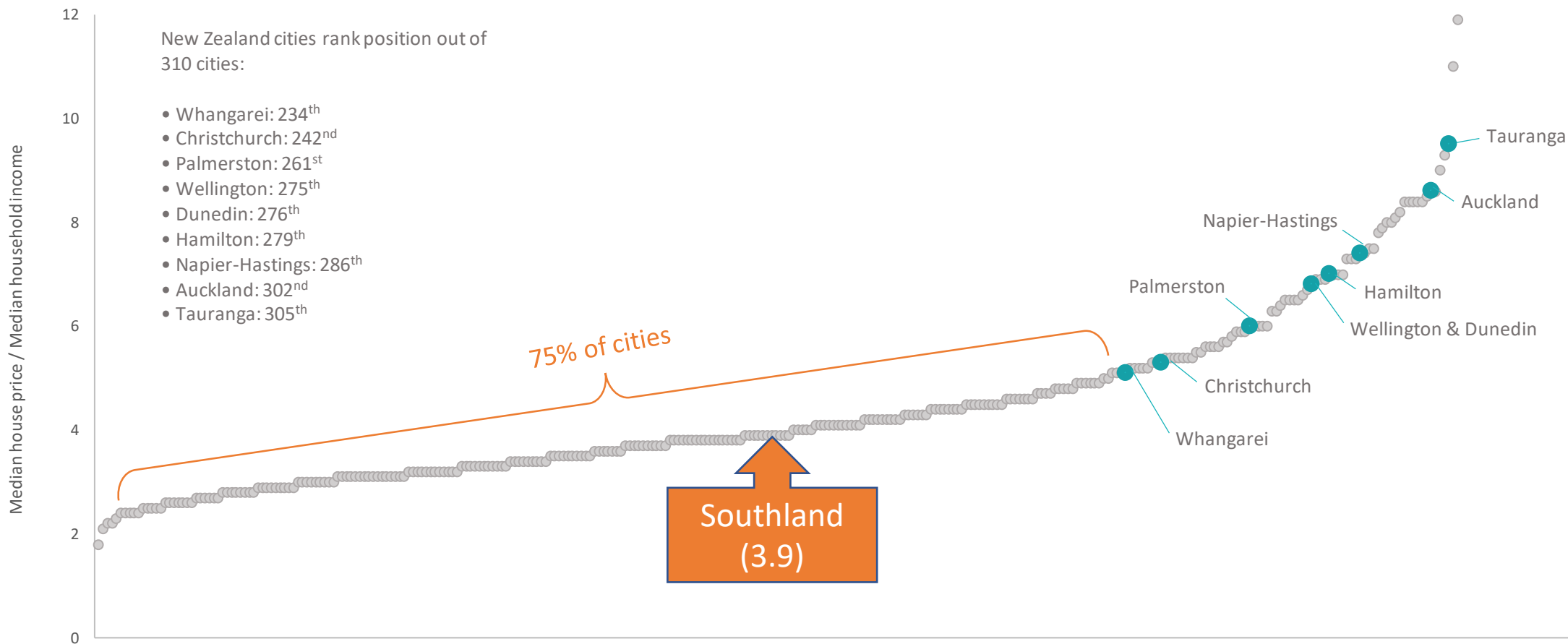


Source: Sapere, 2021



# Housing globally competitive in Southland

Housing markets ranked by affordability 2019



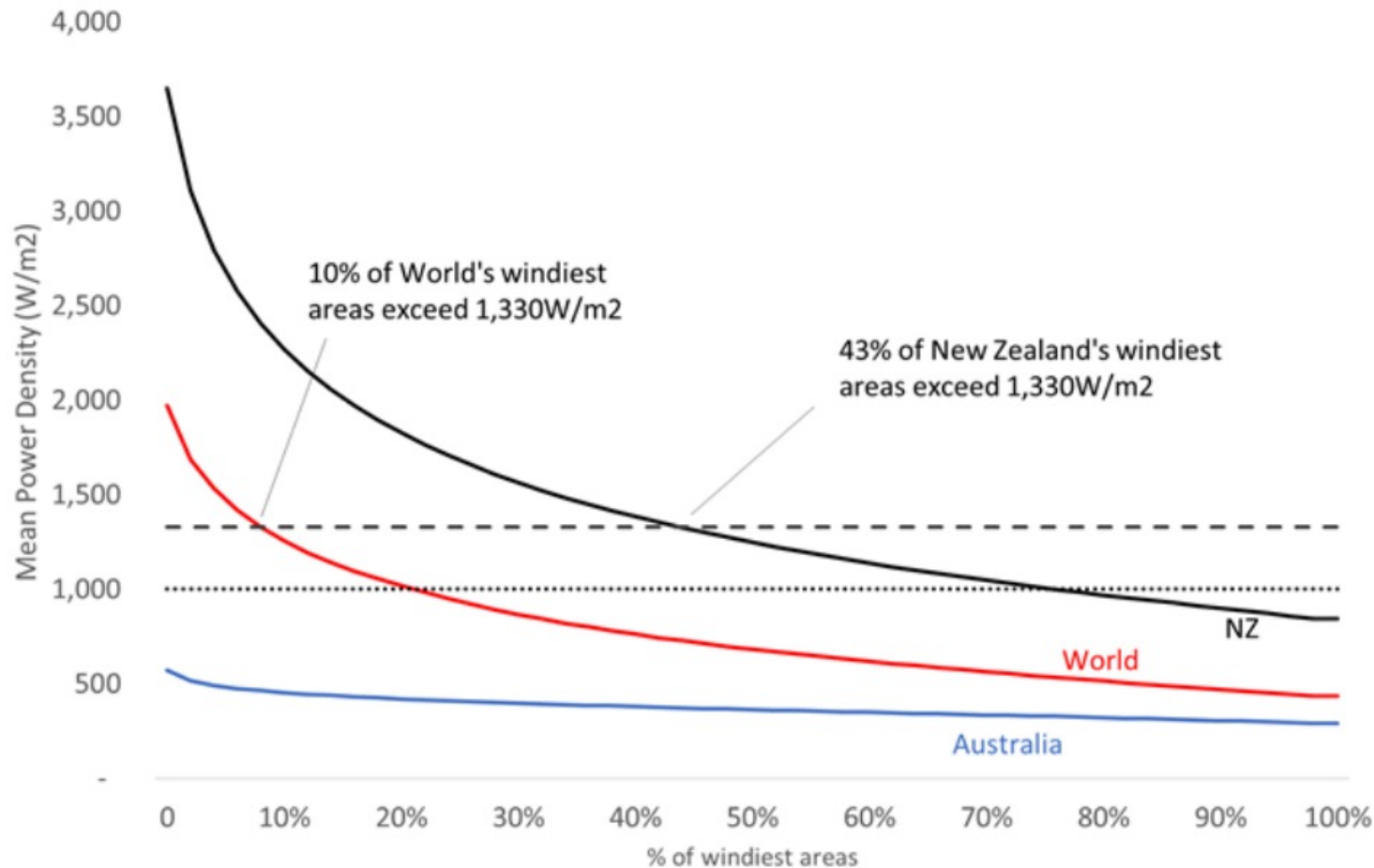
Source: 16th Annual Demographia International Housing Affordability Survey (2019: 3rd Quarter)

\*Hong Kong has a median multiple of 20.8



# Renewable resources globally competitive

Figure 5: New Zealand has an abundance of potential wind power



Source: Data obtained from the Global Wind Atlas 3.0<sup>6</sup>

“According to MBIE’s Wind Generation Stack Update in June 2020, Southland has among the best wind resources in New Zealand”



# What it will take

## Murihiku energy powerhouse

- Regulators and Local Govt
  - Enabling lead infrastructure investment
  - Willing to enable infrastructure and defend against NIMBYism
- Infrastructure Excellence
  - Transport: Port, Airport and Fibre
  - Energy: Electrification of everything, strategic use of coal, growth of biomass
  - Transmission and Distribution – coordination, collaboration, transparency
  - Social – schools, hospitals, education sector to attract and grow the workforce
- Social Licence
  - High paying jobs, enhanced standard of living, growing population
  - Genuine partnership with mana whenua

