Energy Transition Issues

Two key pieces of work:

- Southland-Murihiku Energy Strategy
- Just Transitions Clean Energy Plan

Murihiku Regeneration

Invercargill City Council

Electricity System Pressure

- Southlands decarbonisation electricity demand increase could be 150MW
- "This highlights the need for considerable additional generation, transmission and distribution upgrades"
- So the bigger picture: 150 MW decarbonization + new industry + possible Green Hydrogen Plant (500-600 MW over time)
- Future of Tiwai and SGH are essential decisions

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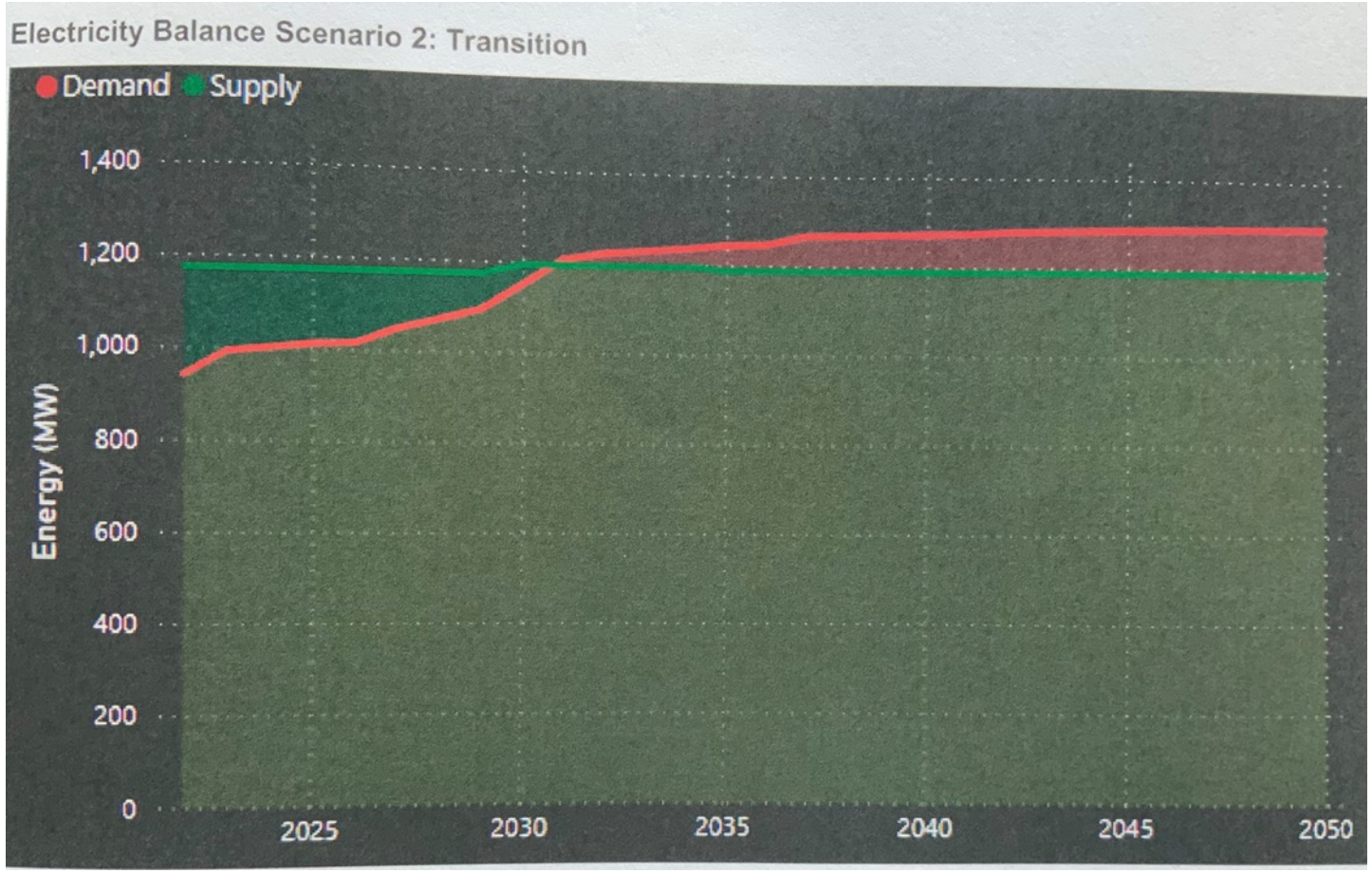
Tiwai closes, SGH is developed



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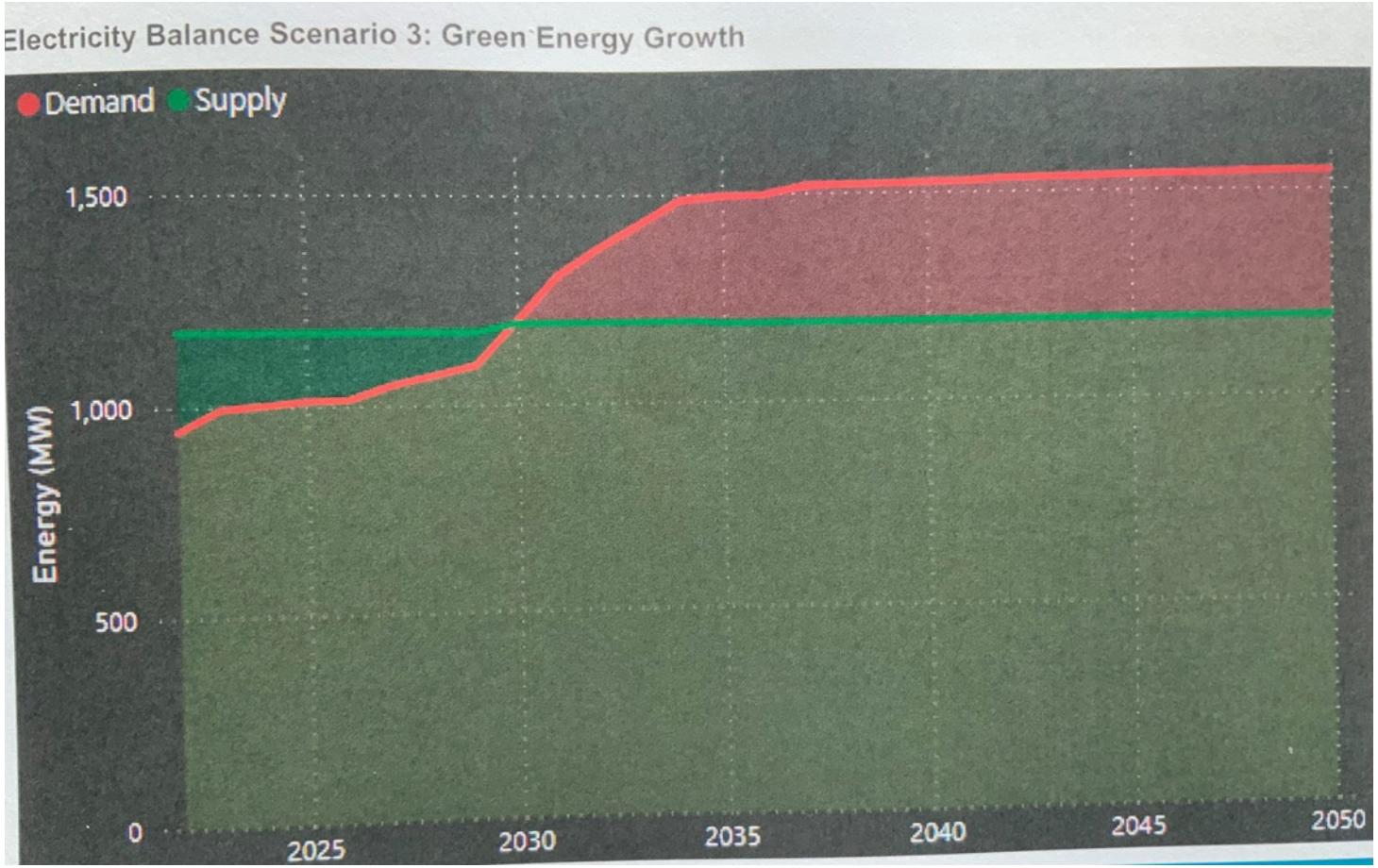
Tiwai stays, AND SGH is developed



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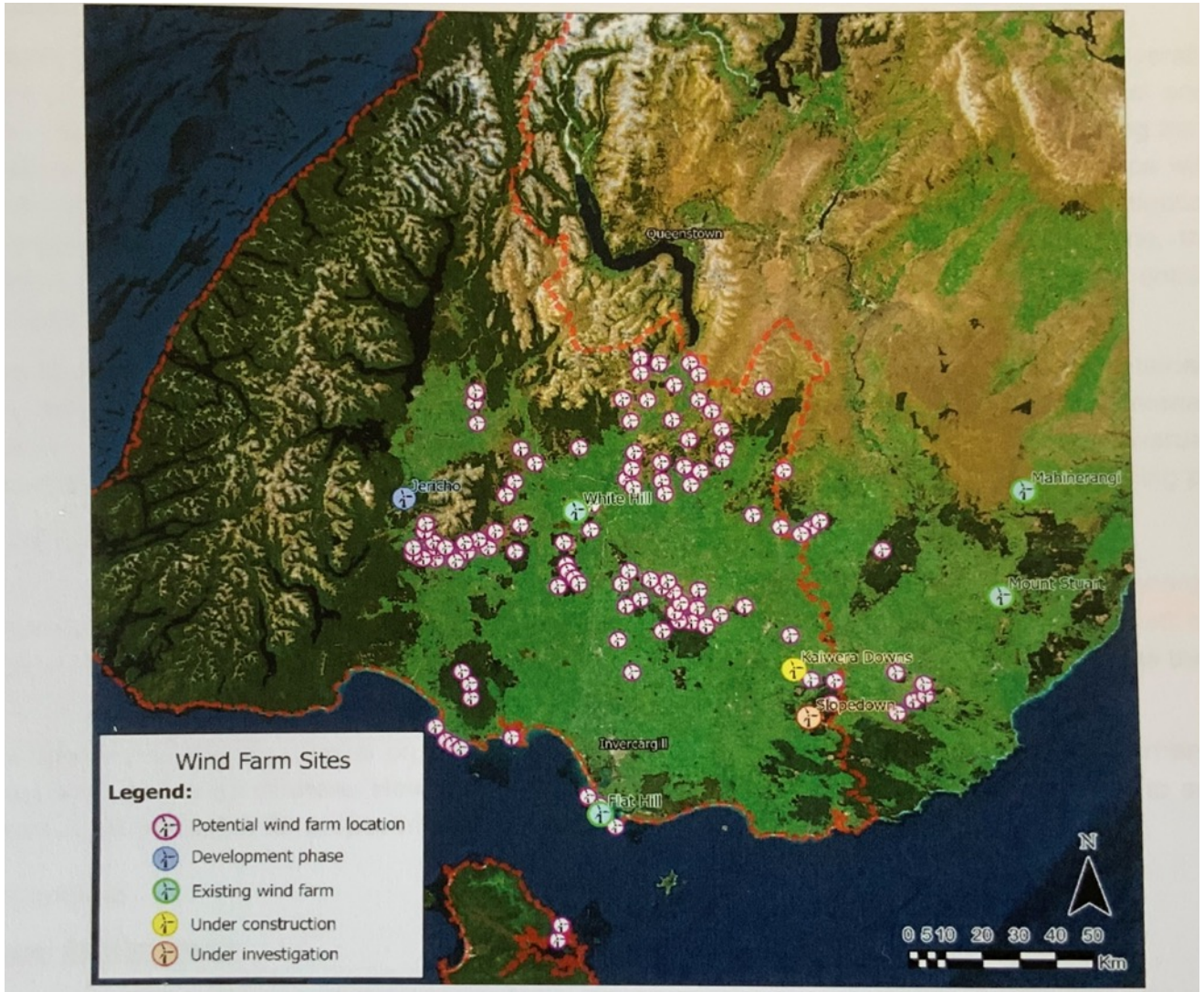

Figure 5-3 Planned and potential wind farm sites in Southland Murihiku (Source: Great South)

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Some Transition Issues

- Variable Generation & new technology:

  - Pot / potline shut down **NZAS**
  - Dynamic (intraday) demand side response deep modulation tech – **Enpot**
  - Batteries / Metal Hydride storage

- Capital Sources and electricity prices
- Regulatory framework – e.g., supply contracts & infrastructure build
- People & capability and social infrastructure – e.g., housing, health services

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Conclusions

- Affordability of “big projects” for generation/transmission requires careful consideration
- Grids/Networks will probably move along a continuum to be more regional – generation closer to load
- Solar/wind generation has increased variability, openness to new tech & supply contracts essential system stability
- Focus on expanding options & analytical rigor essential

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