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Beyond Local Hazards

Lifelines for a Systemically Stressed World

Dr Matt Boyd · Adapt Research
National Lifeline Utilities Forum · Hamilton · 10 Nov 2026

Aotearoa's six ships

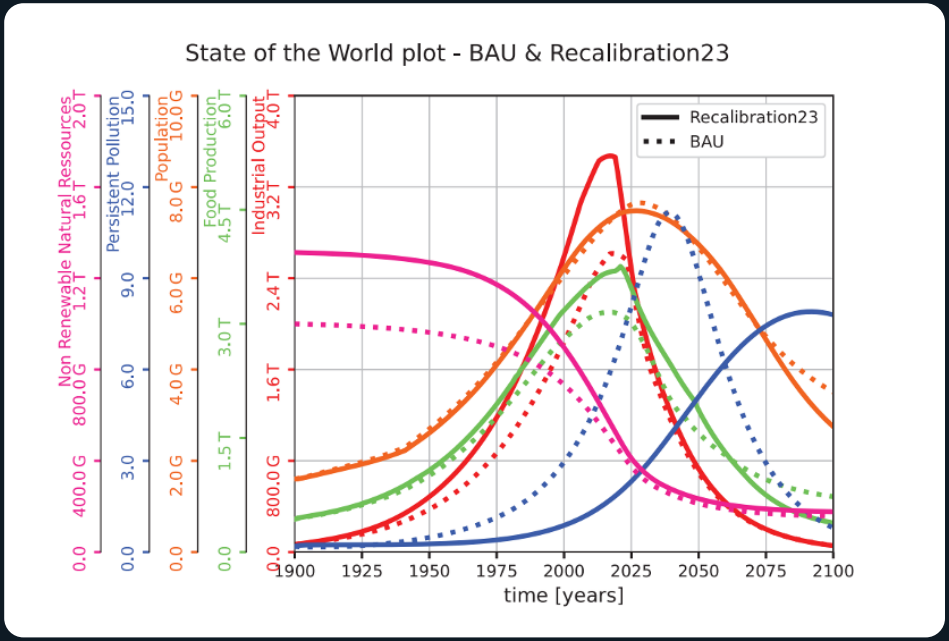


Diesel | Fertiliser | Seed | Medicines | Spare parts | Data

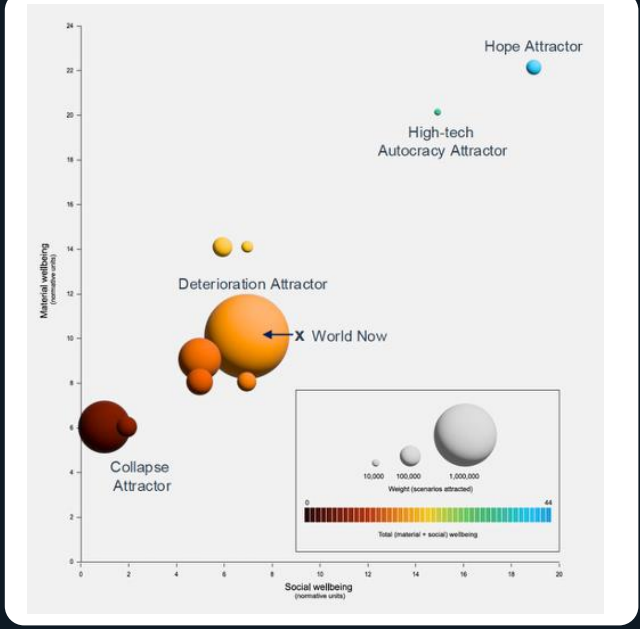
We don't own them. We don't crew them.
Nobody promised them to us.

Not the pipes and wires that end at our coast, but the lifelines that begin there

Futures worth hedging



Limits to Growth: still tracking



Deterioration is the largest attractor

Left: World3 business-as-usual vs 2023 recalibration (Nebel et al. 2023). Right: polycrisis attractors Cascade Institute's CORE Model

Past a point, connection becomes fragility

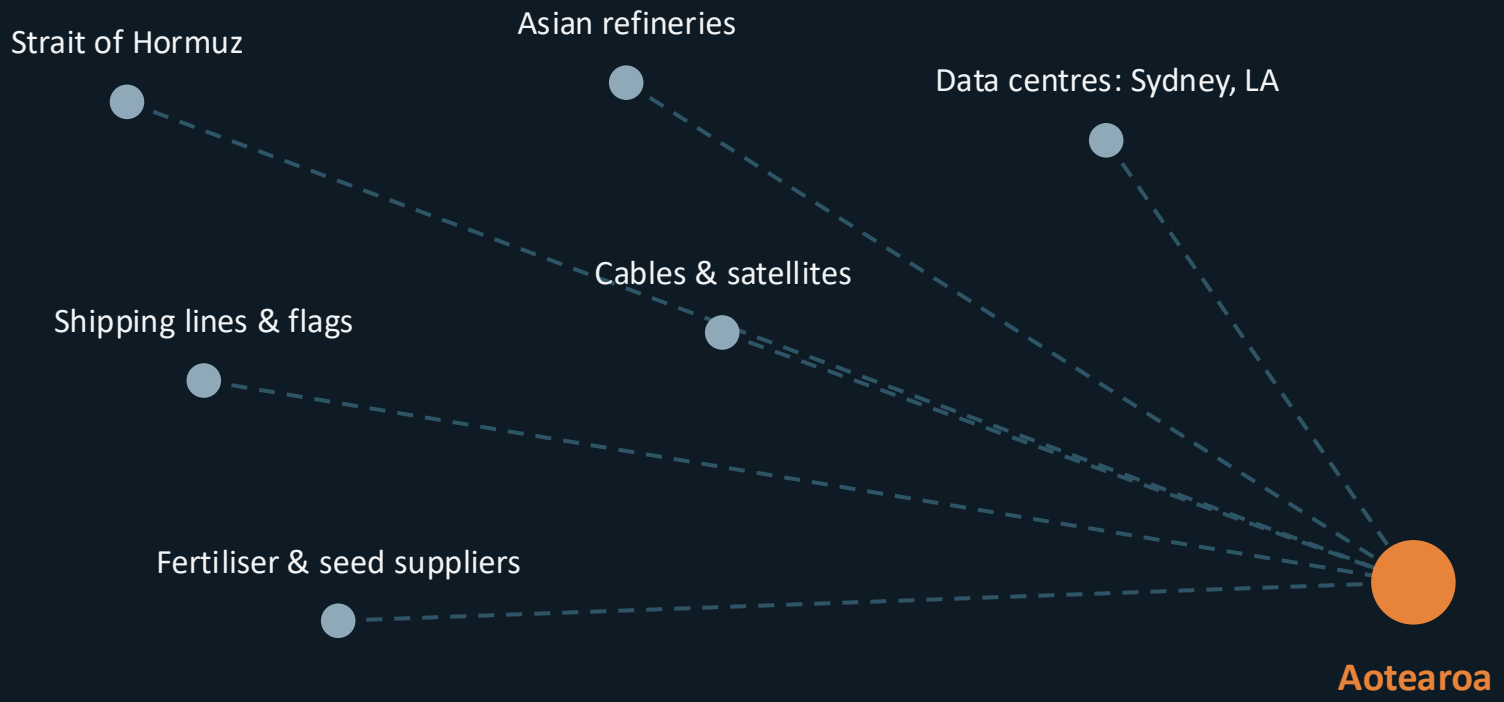
Stressed systems › **One trigger** › **Cascading failure**

Resources already tightening

~25% copper supply short of need by 2035 (IEA)

2+ yrs lead time for large transformers

Most of our critical infrastructure is offshore



Globally critical infrastructure: outside our borders, our regulators and our control (Kallenborn & Willis 2025)

Sovereign control is a resilience property



No ships, no stockpile

Fuel arrives refined, on foreign ships. Our coastal tankers are gone.



Three US companies

run most of our cloud. A handful of cables carry our data.

2025: the International Criminal Court's prosecutor lost access to his Microsoft email after US sanctions

Maritime unions, April 2026: diesel stockpiles are worthless without ships to move them

Destruction, not just disruption

Local natural hazard

- Temporary disruption
- Restore what existed
- Outside help arrives
- Parts and fuel flow

> Needs a response plan

Global catastrophe

- Years, not weeks
- Re-engineer what's needed
- Self-reliance
- Reorganise to survive

> Needs Plan B

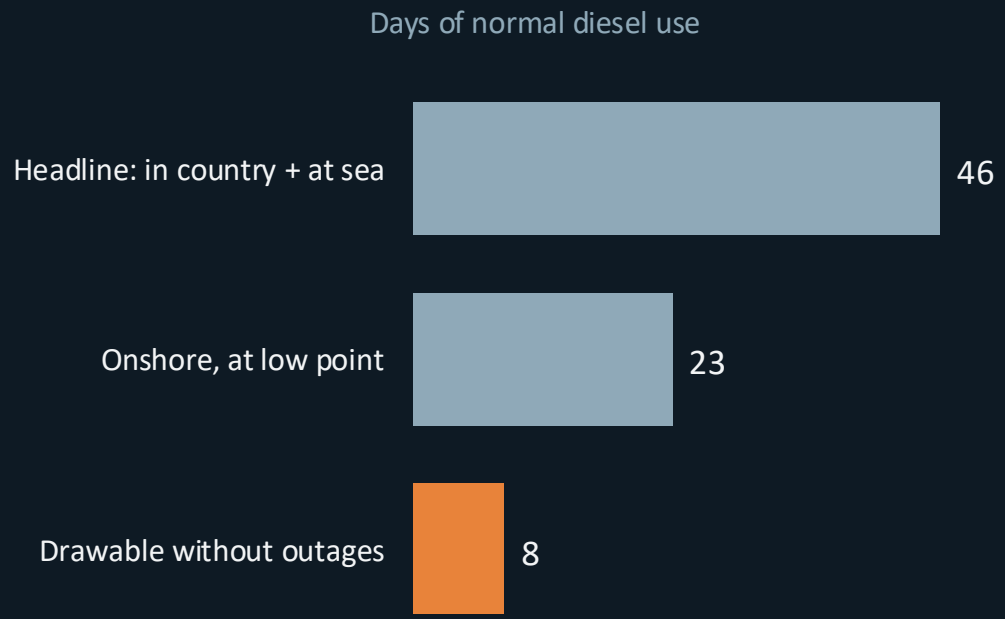
Food production as critical infrastructure



Must be secure before the event

"The supply chain becomes the incident" long before shelves empty (IAEM Bulletin, Oct 2026)

46 days on paper. 8 days of drawable diesel.



8 days lasts…

12.6 days

everyone in the government's priority fuel bands

Hodgkinson & Boyd (preprint), recalculated from the 2025 Fuel Security Study; headline from MBIE, March 2026

Plan B in numbers, and a menu of options

Land to feed Aotearoa if trade stops



A menu, not a single fix

- Sovereign shipping
- Biodiesel for agriculture
- Offline payments
- AI inference capability
- Trans-Tasman basic-needs pact & infrastructure to effect
- …

Hectares to meet NZ's food energy needs from dairy or wheat, and canola for biodiesel to grow the wheat (NZCat 2023). Squares to scale.

Nobody accountable for global tail risk



Shared pathways, split across agencies

Cost now to the provider · benefit later to everyone · failure paid by customers

National Resilience System Handbook (DPMC, 2026): 28 National Risks, no published likelihoods or worst cases

Three asks

1

Widen the frame

A global lens in the National Vulnerability Assessment: shipping, cables and cloud, food inputs

2

Plan for consequences

Count stocks in drawable litres, days and hectares. Cargo capacity. Agree who gets what and how, in advance

3

Decide the tail together

A public risk register with Plan B options. Mitigate 10% for 6 months, or 100% for 5 years?

A values choice: public deliberation, informed by independent risk advice, eg Parliamentary Commissioner for Catastrophic Risks

Aotearoa: Less exposed, not yet prepared



So, if the ships don’t come, how long can your sector keep going, and then what?

NZCat report (2023)

Policy Quarterly (2025)

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