

NZGA 2022 Winter Seminar

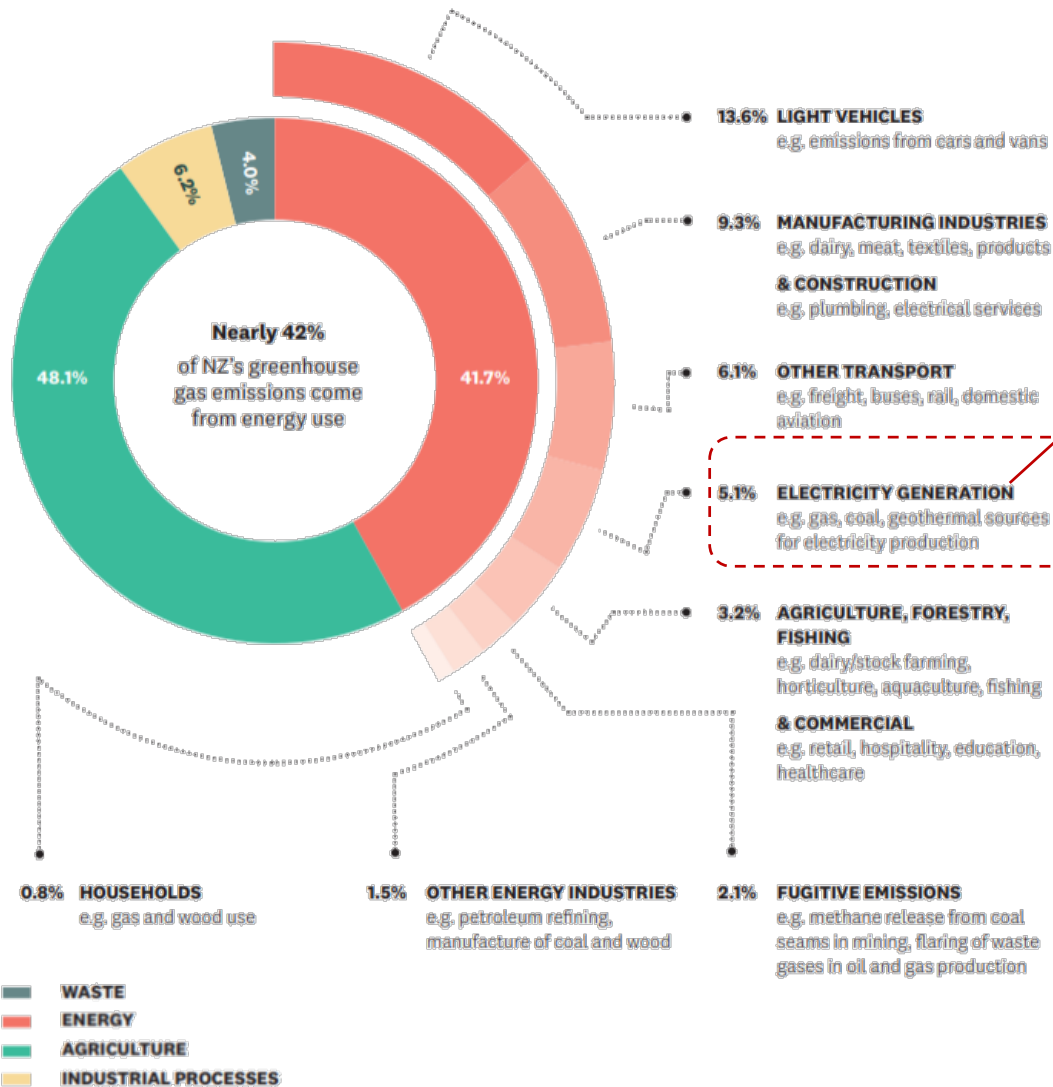
Towards Net Zero: Building a Sustainable Future



28 July 2022

Dr. Cristiano Marantes, Chief Executive, Ara Ake

> New Zealand current state and future targets



Carbon Neutral Government Programme

Public sector to be carbon neutral by 2025

100% renewable electricity generation

Geothermal
741.9 kt CO₂-e

Zero Carbon bill

Net zero long-lived GHG emissions by 2050

Budget period

2022–25

2026–30

2031–35

All gases, net (AR5)

290 Mt CO₂e

305 Mt CO₂e

240 Mt CO₂e

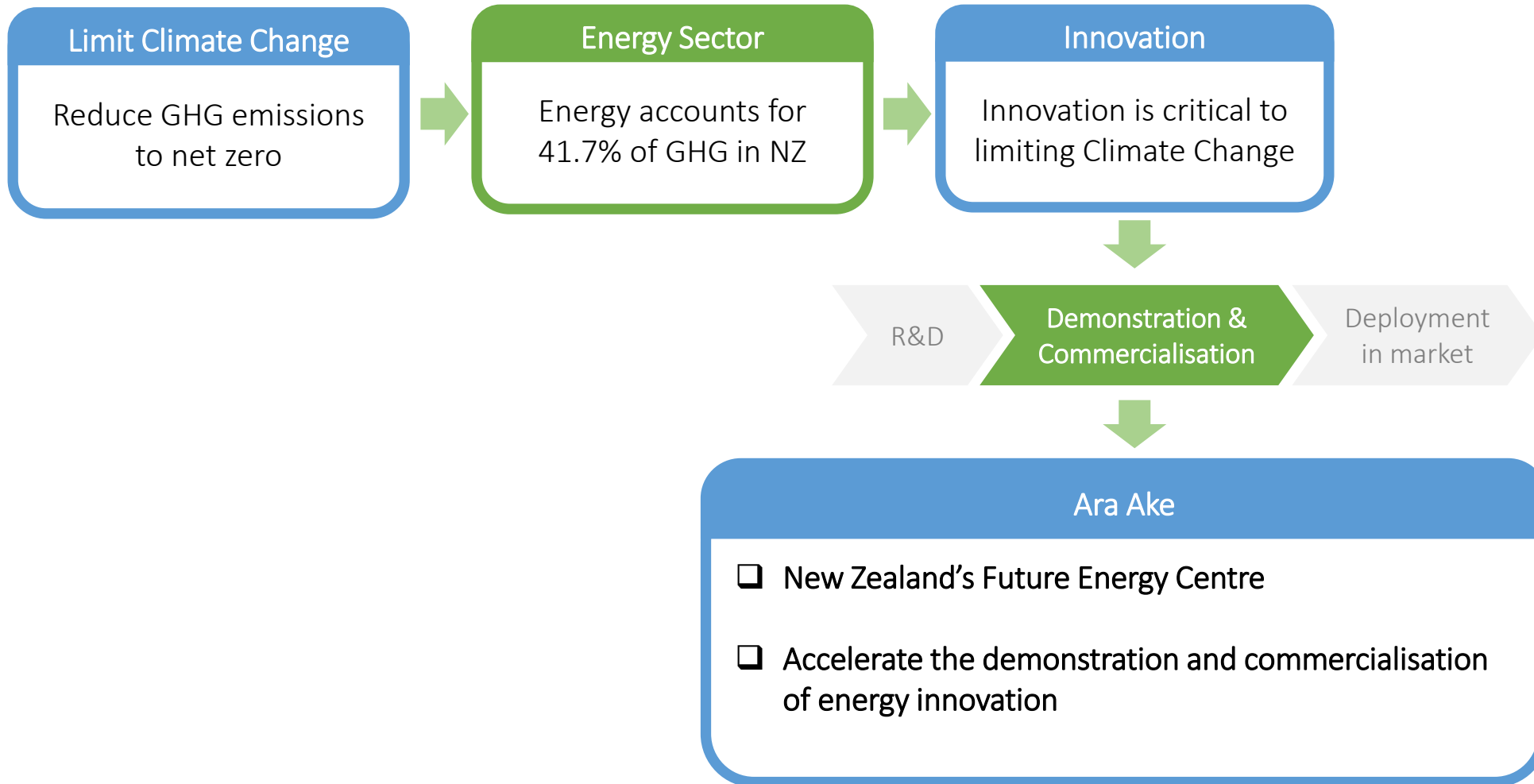
Annual average

72.5 Mt CO₂e

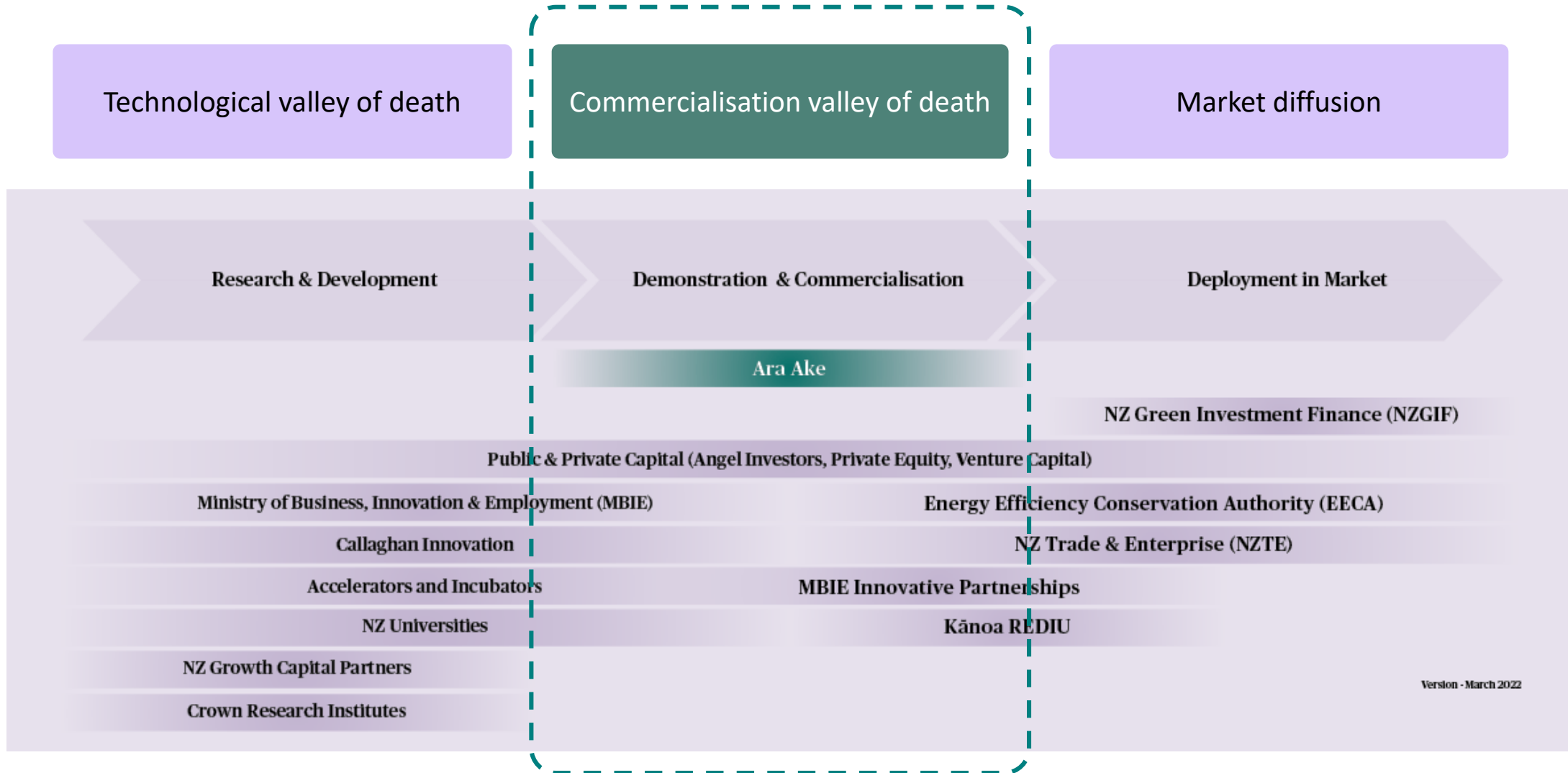
61 Mt CO₂e

48 Mt CO₂e

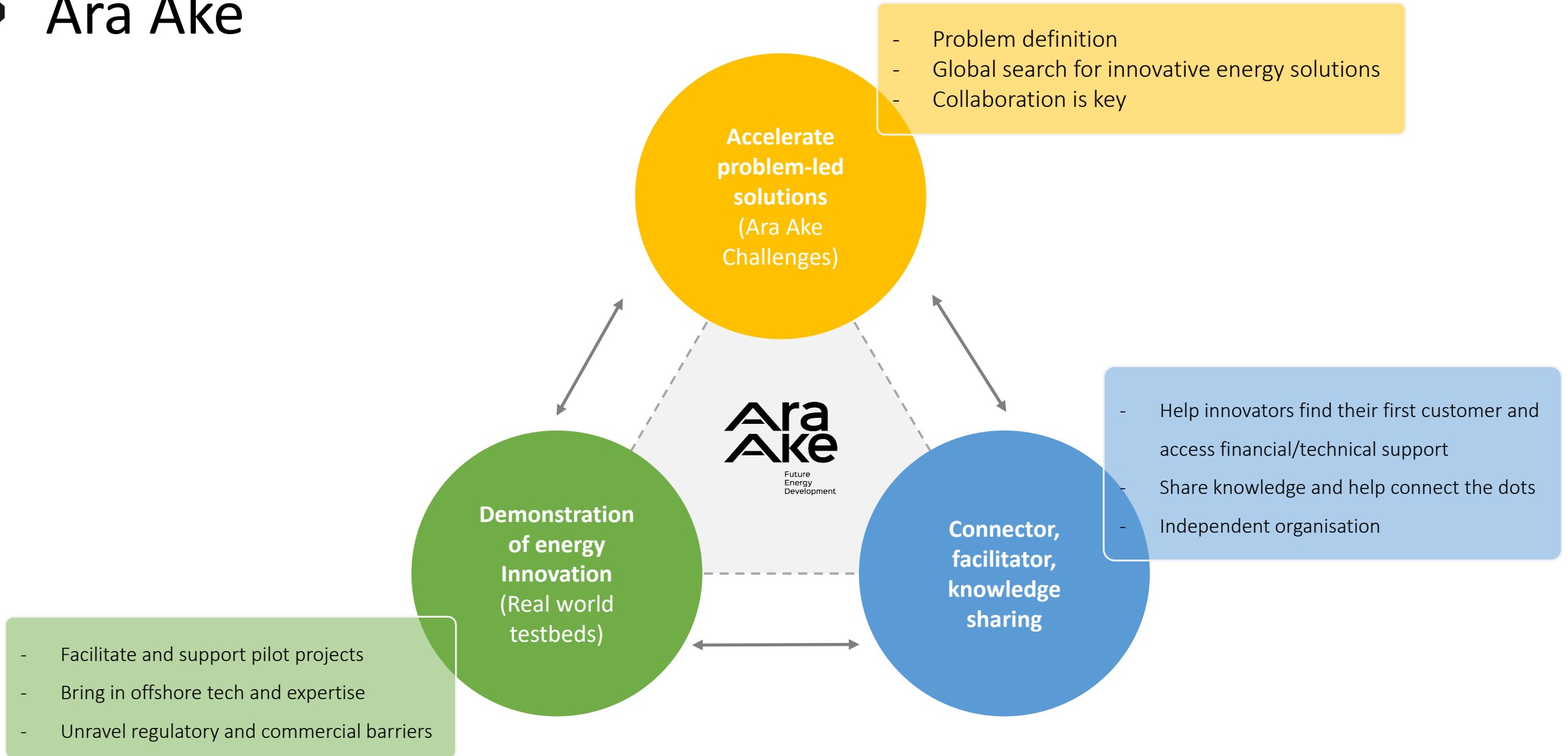
> Ara Ake



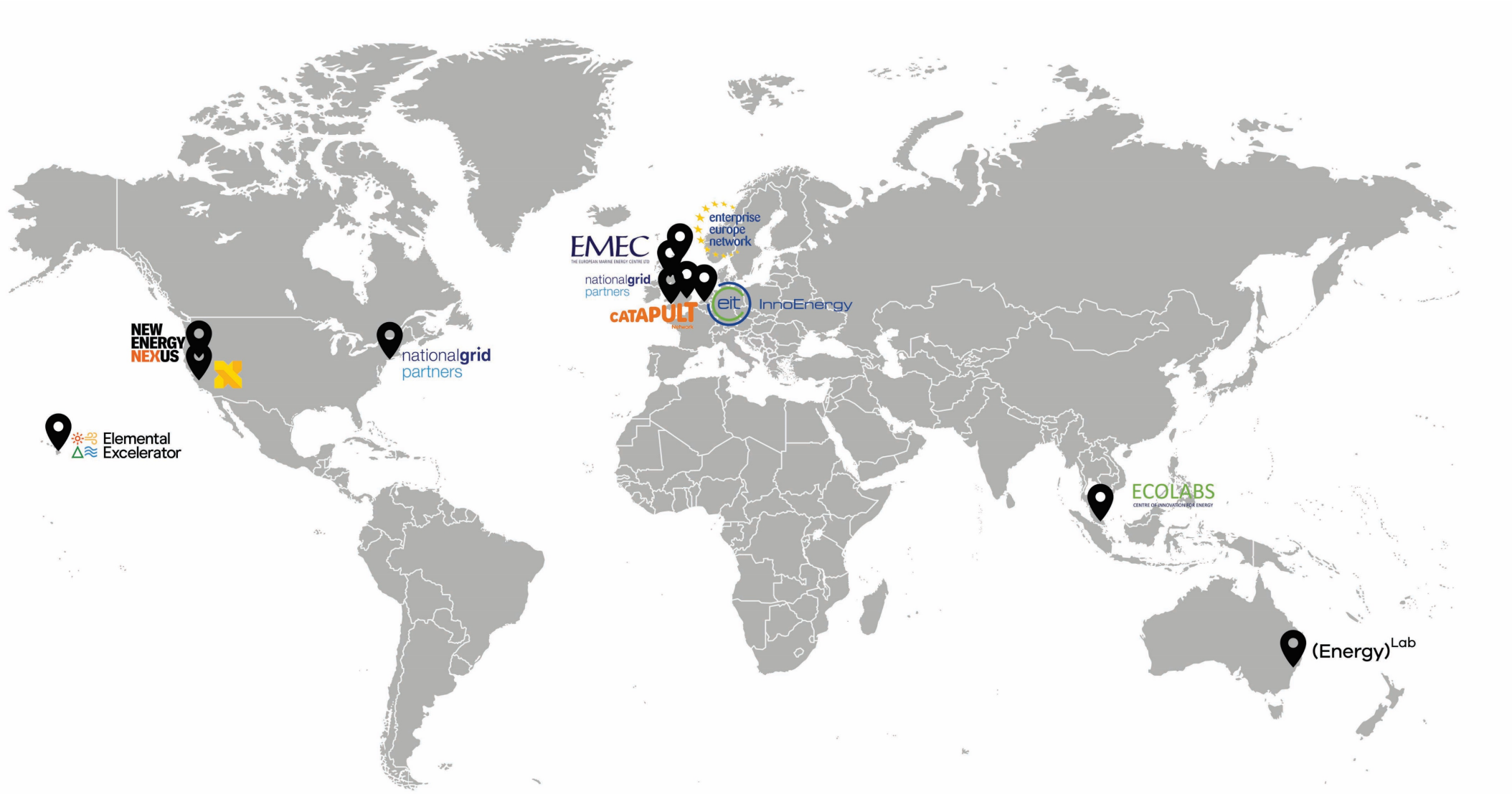
> Energy Innovation Value Chain in Aotearoa



> Ara Ake



> Partnerships



> Current initiatives

Ecosystem

- Ara Ake Forum
- Energy Innovation Fund Navigator
- Mapping the innovation ecosystem
- Low Carbon Aotearoa, Energy Roadmap to 2030
- Blue and Green Technology Conference
- Climate Connect Aotearoa
- Industry Decarbonisation Best Practice

Micro & off grids

- Community energy how-to guide
- On-farm energy
- Parihaka microgrid
- Ara Ake HQ solar



Generation

- Offshore Future Energy Forum 2021 & 2022
- WeGaw hydro-optimisation project
- Biogas Connector Event

Transmission & Distribution

- Emrod wireless power transmission pilot
- Orion Energy Accelerator 2021
- EDB Energy Innovation Challenge
- FlexForum
- EEA OpenADR

Consumers

- Multiple Trading Relationships (MTR) pilot
- Kāinga Ora Solar Sharing
- EcoLabs < > WITT carbonzero testbed
- EcoLabs < > Ara Ake testbed

Transport

- Total Cost of Ownership (TCO) comparison tool
- TCO project with Freightways and HWR

Storage

- Carbon Capture, Utilisation and Storage (CCUS)



Problem led initiatives

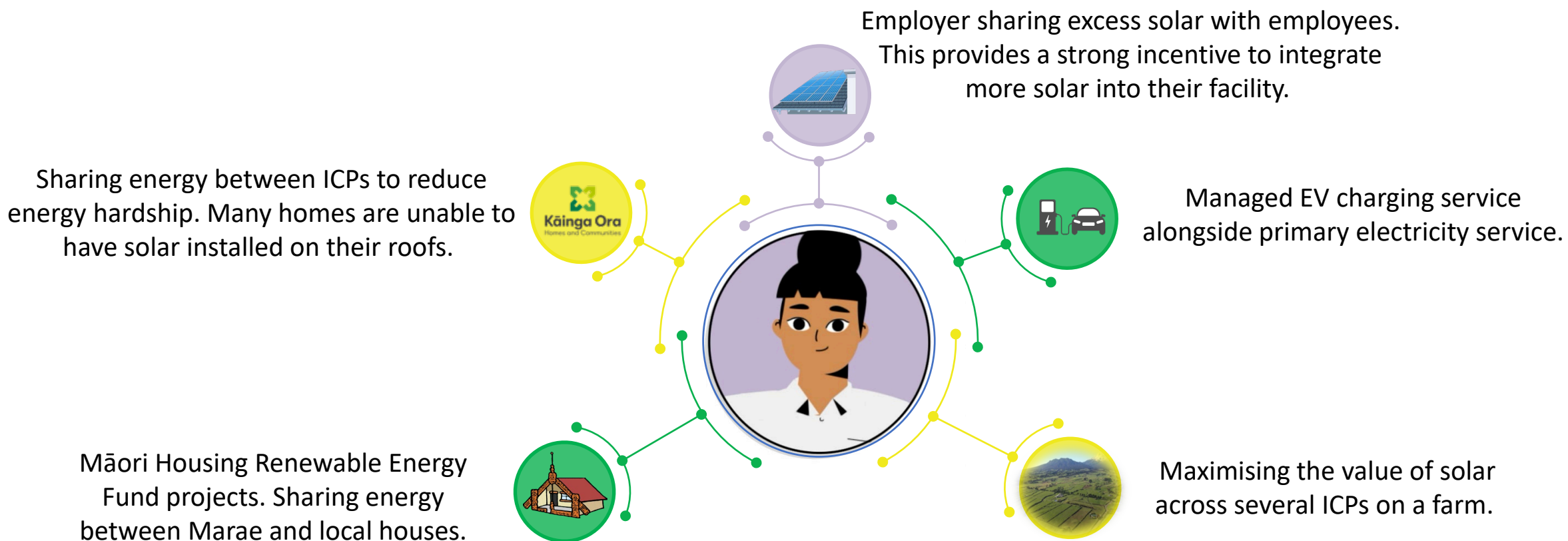
A large yellow circle is positioned on the right side of the slide. Inside the circle, the text "Accelerate problem-led solutions (Ara Ake Challenges)" is written in a white, sans-serif font.

Accelerate
problem-led
solutions
(Ara Ake
Challenges)

> Multiple Trading Relationships (MTR)

https://www.youtube.com/watch?v=J6KL_qM-LSI

> MTR pilot – projects under development



Collaborative EDB Initiative



> EDB energy innovation initiative

Goal: Finding innovative solutions to electricity distribution business decarbonisation challenges, as Aotearoa transitions to a low emissions future.

Overview of challenges

- › How to most effectively and efficiently integrate distributed energy resources (DER), such as solar, into their asset management planning and processes.
- › There is a shortage of skills and experience to support the decarbonisation journey, particularly in network demand forecasting and assessing the increasing volume of DER connection requests, in an efficient and timely manner.

Next steps

- › Finalise challenge/s with 11 EDBs
- › Global search for innovative solutions
- › Pitch event in late 2022
- › Finalists supported to pilot the technology with at least one EDB, goal of scaling deployment across numerous EDBs.

Ecolabs/WITT/Ara Ake testbed partnership

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Demonstration
of energy
Innovation
(Real world
testbeds)


➤ Programme vision



- › Demonstrable improvement to WITT's carbon footprint to align to 2025 net carbon zero goals
- › Global innovation outreach
- › Viable testbed & national scaling opportunities for innovators through Te Pūkenga network (16 Institutes of Technology and Polytechnics)
- › Tangible & interactive technology solutions to stimulate current & future new energy talent



Thought Leadership & Sharing Knowledge



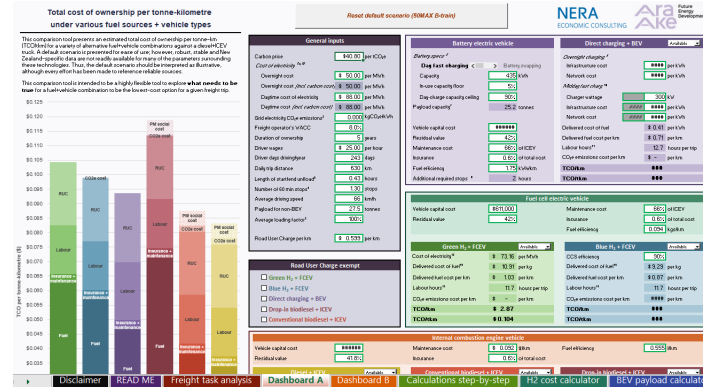
Connector,
facilitator,
knowledge
sharing

> Knowledge, insights & connector events

Knowledge & Insights



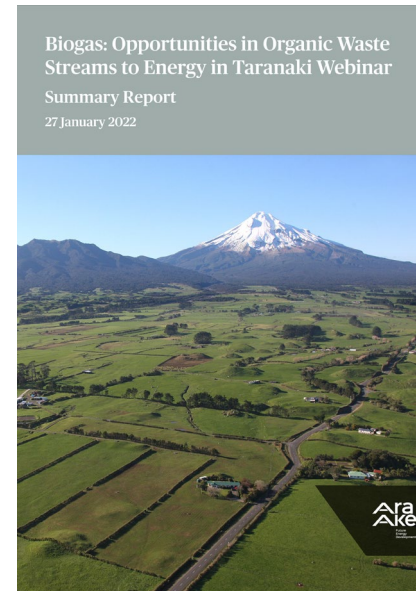
Carbon Dioxide Removal and Usage
in Aotearoa New Zealand Report
www.araake.co.nz/insights/ccus



Long Distance Heavy Freight Total cost of
ownership model

www.araake.co.nz/ldhf-phase-two

Connector Events



Taranaki Biogas Webinar
www.araake.co.nz/biogas-webinar



Offshore Future Energy Forum
www.araake.co.nz/offshore-future-energy-forum



www.araake.co.nz

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