Opportunities for innovation and impact in Energy

6 July 2021 | Tina Schirr | Executive Director | BusinessNZ Energy Council (BEC)

Agenda

1 | About the BEC

2 | Exploring possible energy futures in New Zealand

3 | Innovation in Energy

4 | Q&A

About the BEC

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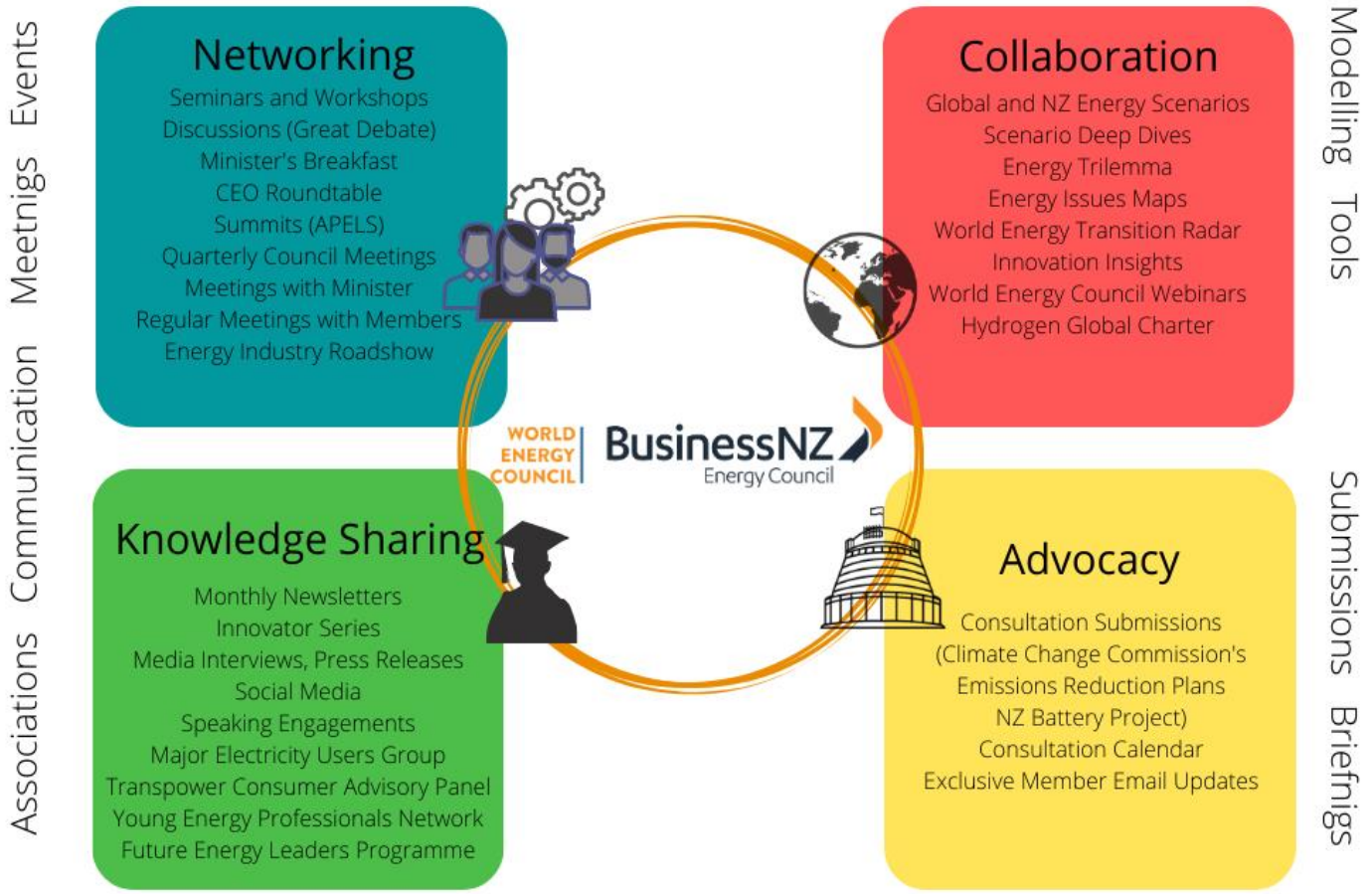
How we operate

How do we **add-value**?

We **SHARE**

And?

We SHAPE



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Exploring possible energy futures in New Zealand

How do you tell the story of the future?

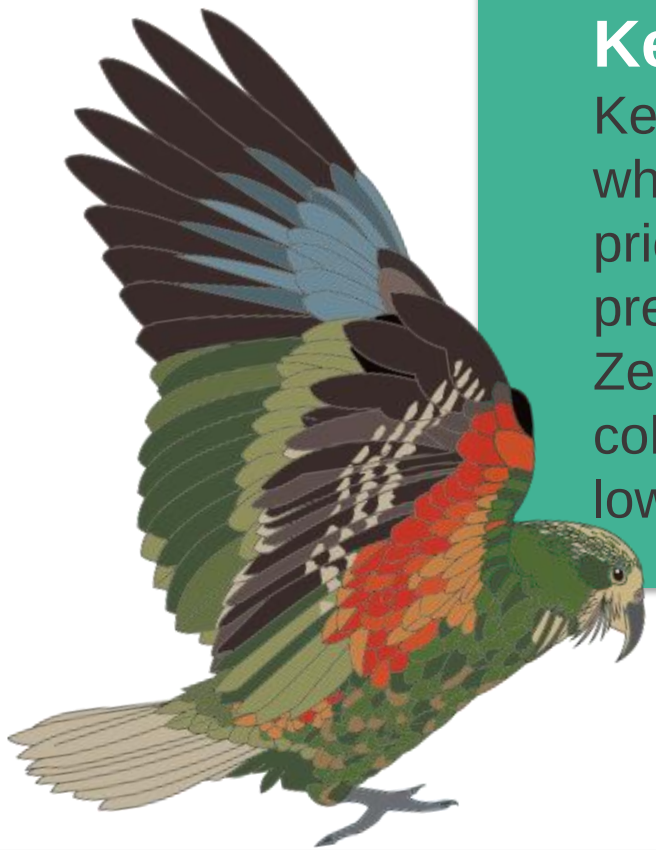
What if most Kiwis chose to see climate change as the most important problem to solve?

What would happen if we invested now
in new technologies
and led the world in decarbonising the economy?

How would New Zealand's energy sector evolve?

What are the choices and trade-offs?

New Zealand Energy Scenarios – TIMES-NZ 2.0.



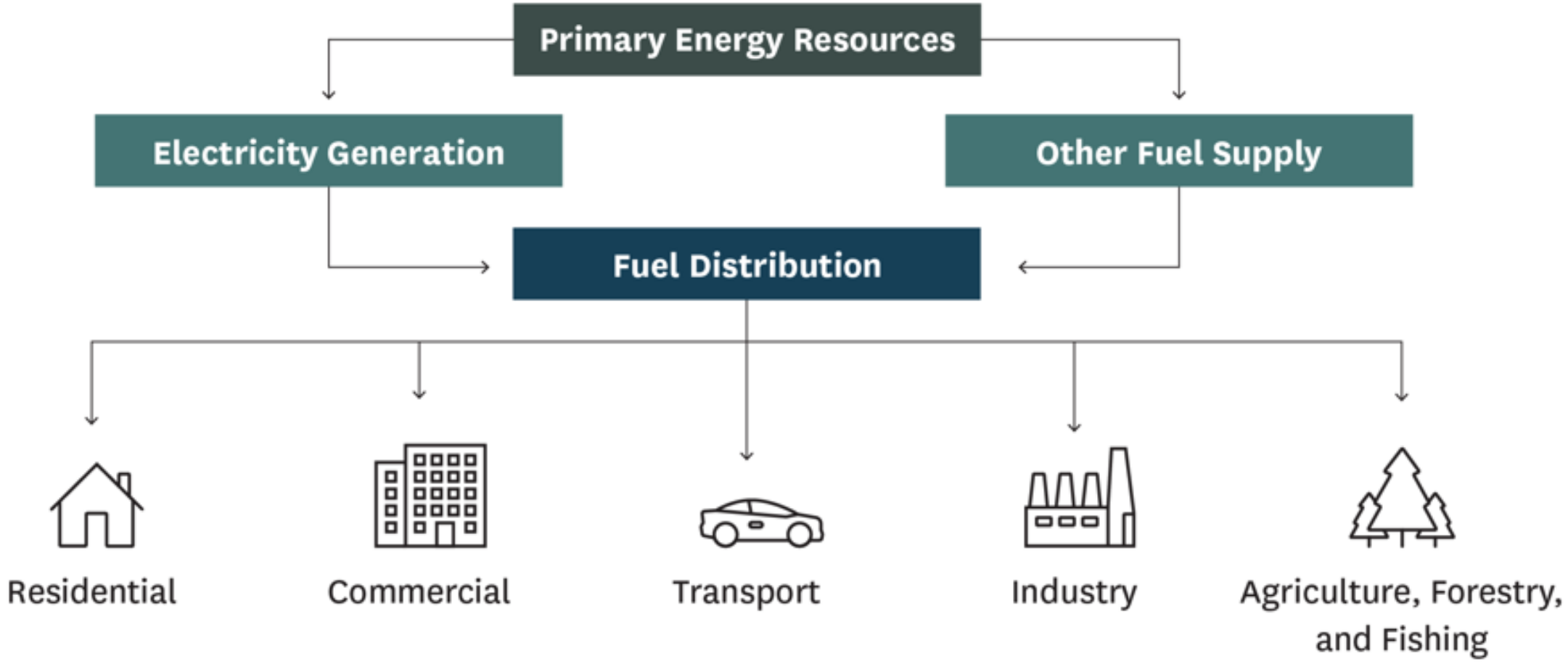
Kea (cohesive)

Kea represents a scenario where climate change is prioritised as the most pressing issue and New Zealand deliberately pursues cohesive ways to achieve a low-emissions economy

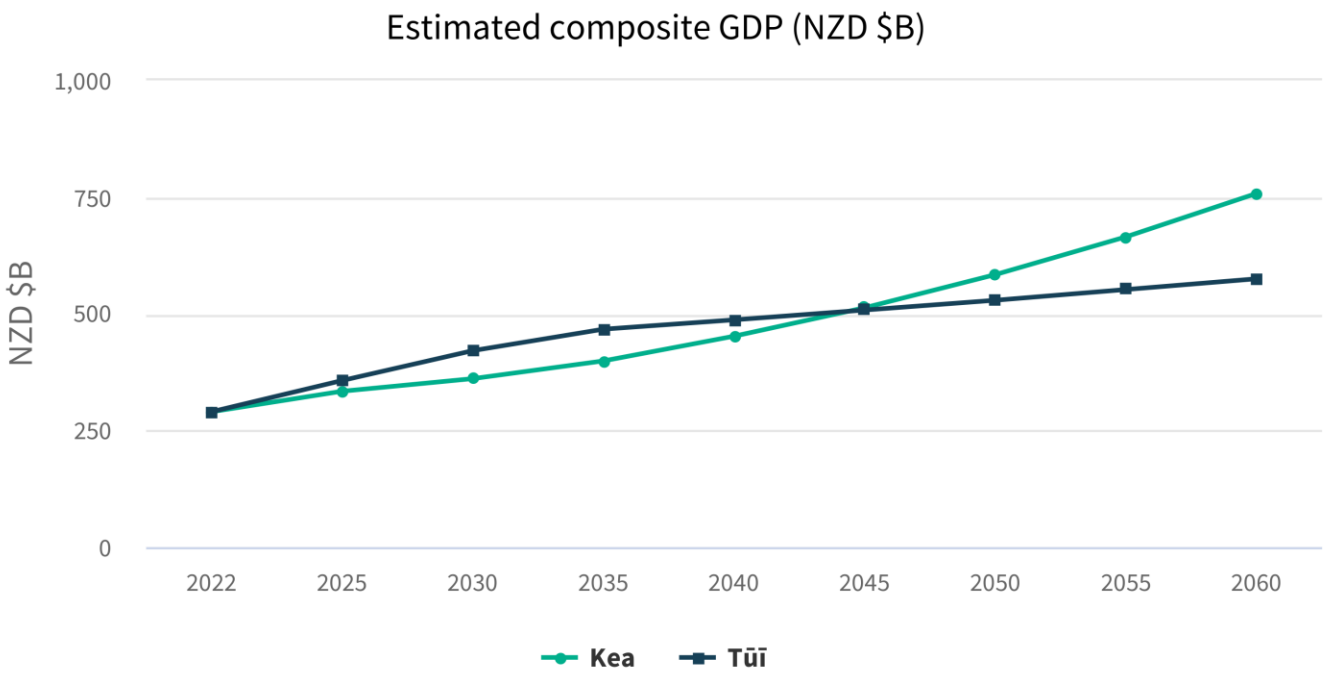
Tūī (individualistic)

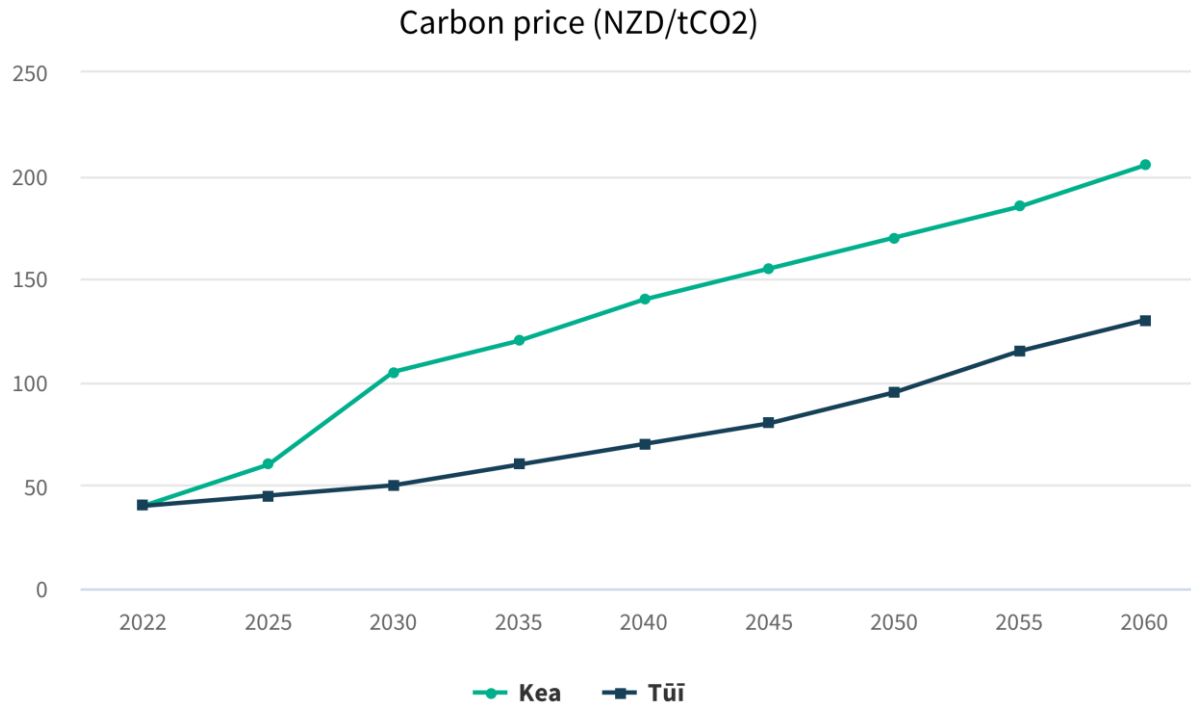
Tūī represents a scenario where climate change is an important issue to be addressed as one of many priorities, with most decisions being left up to individuals and market mechanisms

Our model and its structure



Key model input differences between Kea and Tūī





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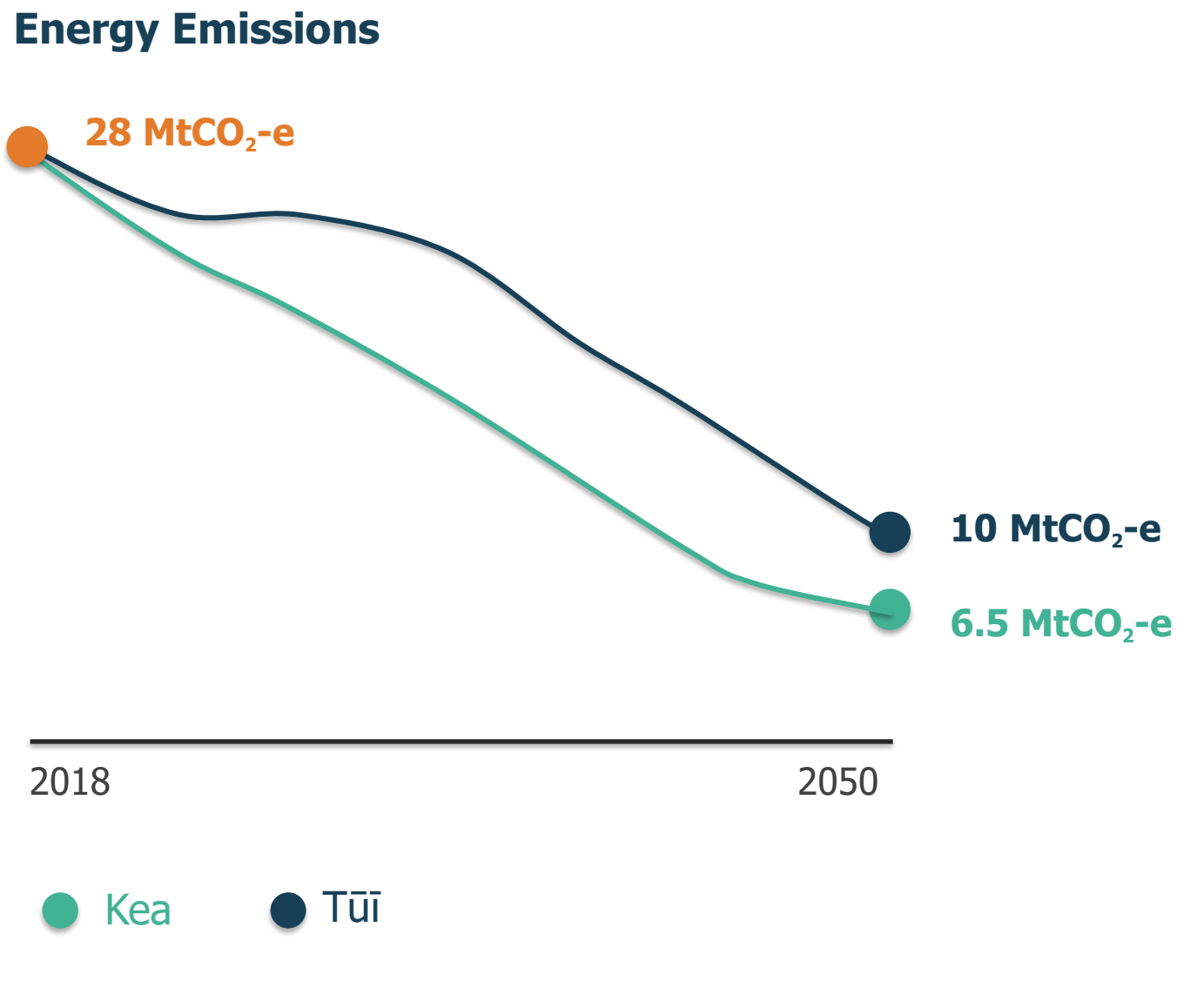
Key Insights

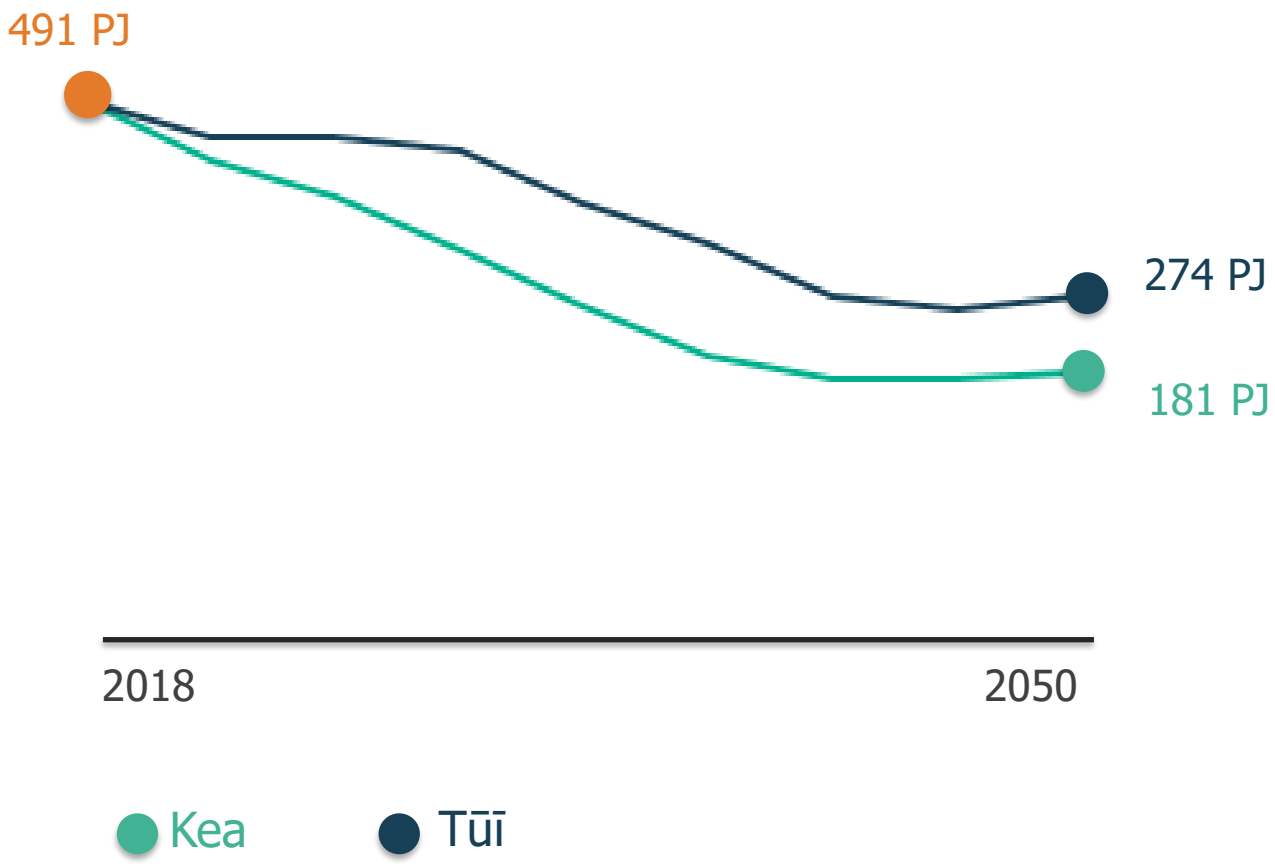
All Sectors

#1 Energy emissions decline strongly in both scenarios

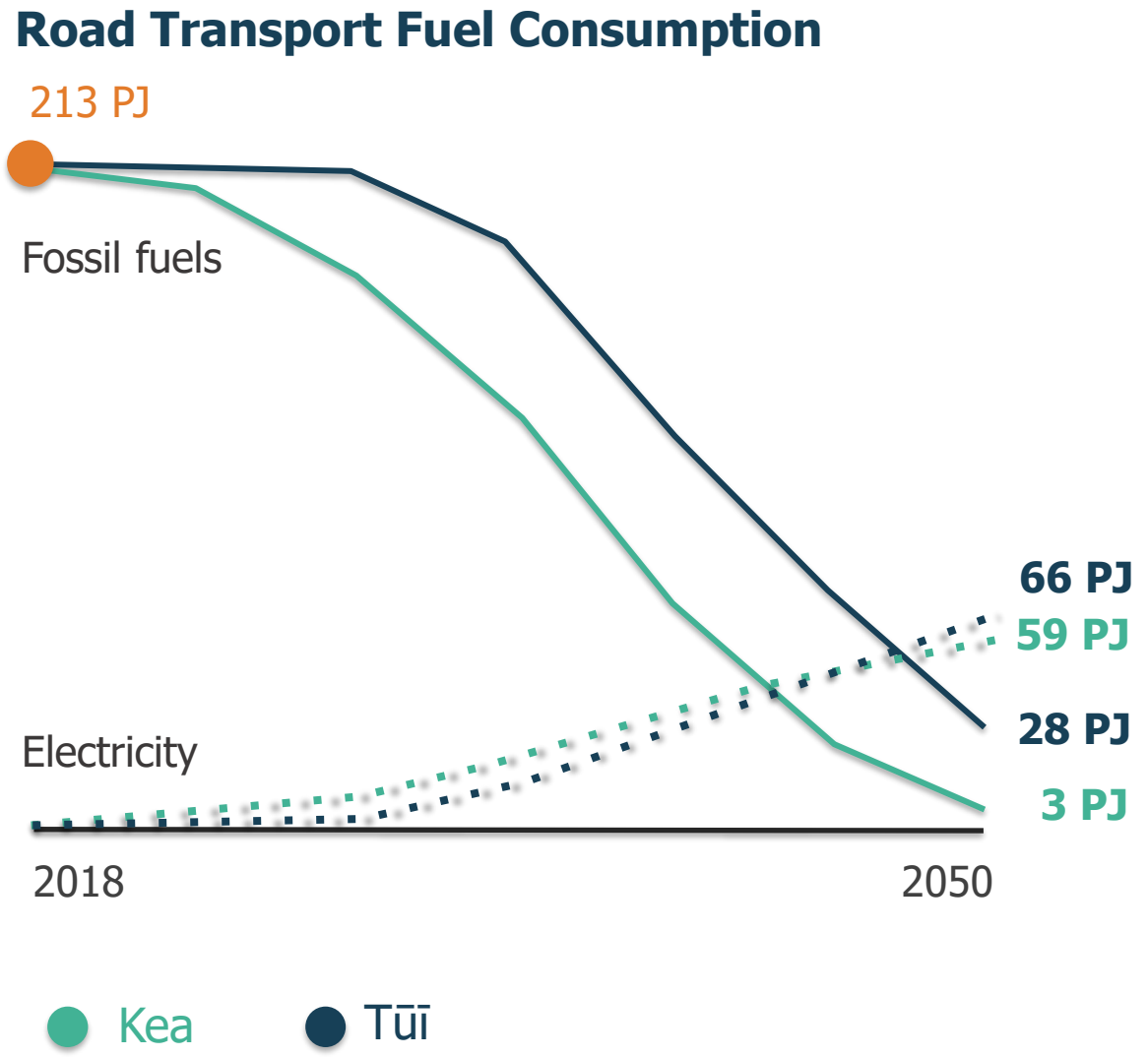


#2 Demand for fossil fuels decreases in both scenarios

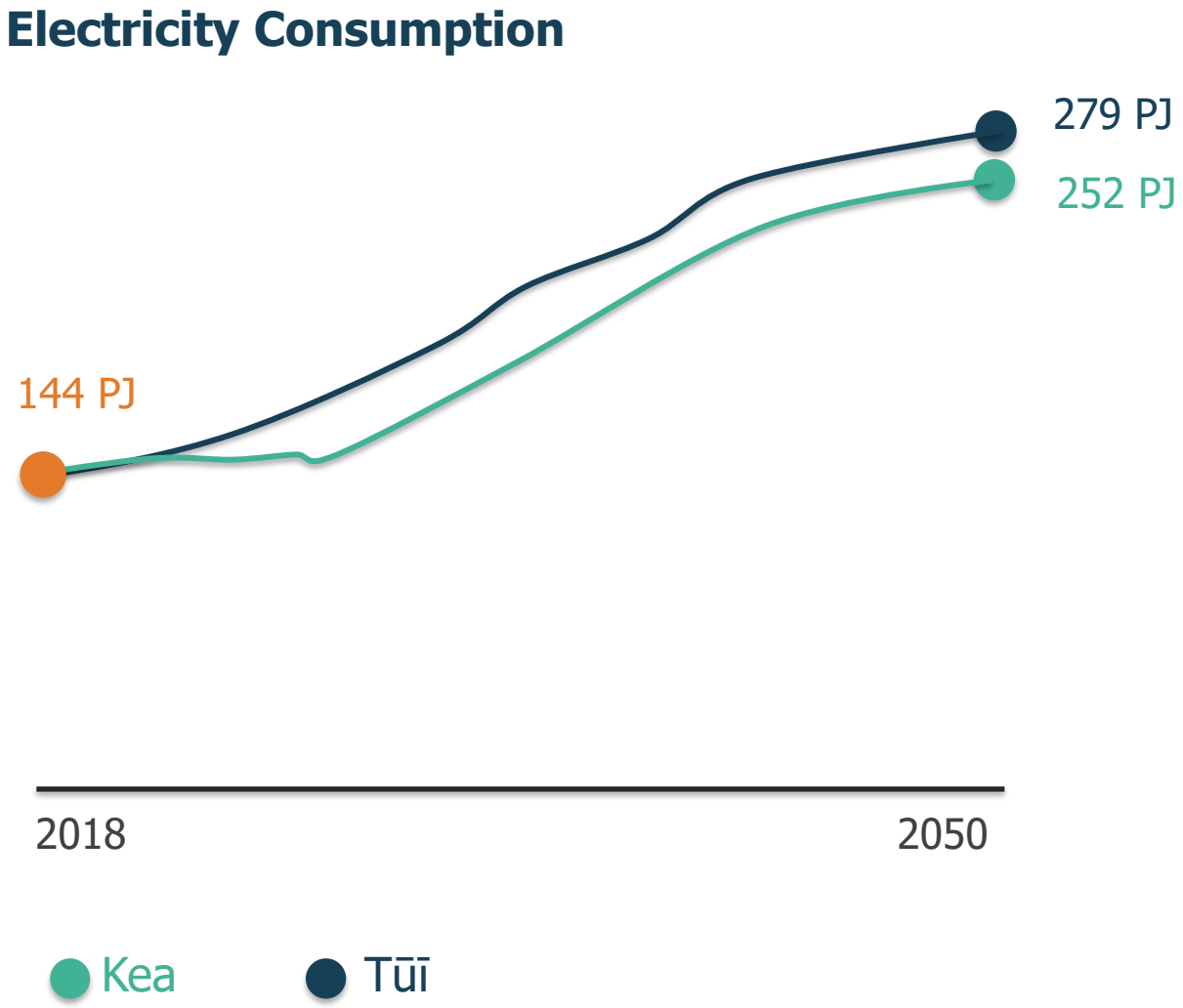
All Fossil Fuel Consumption



#3 Road transport becomes almost fossil-fuel free



#4 Electricity demand roughly doubles in both scenarios



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Key Insights

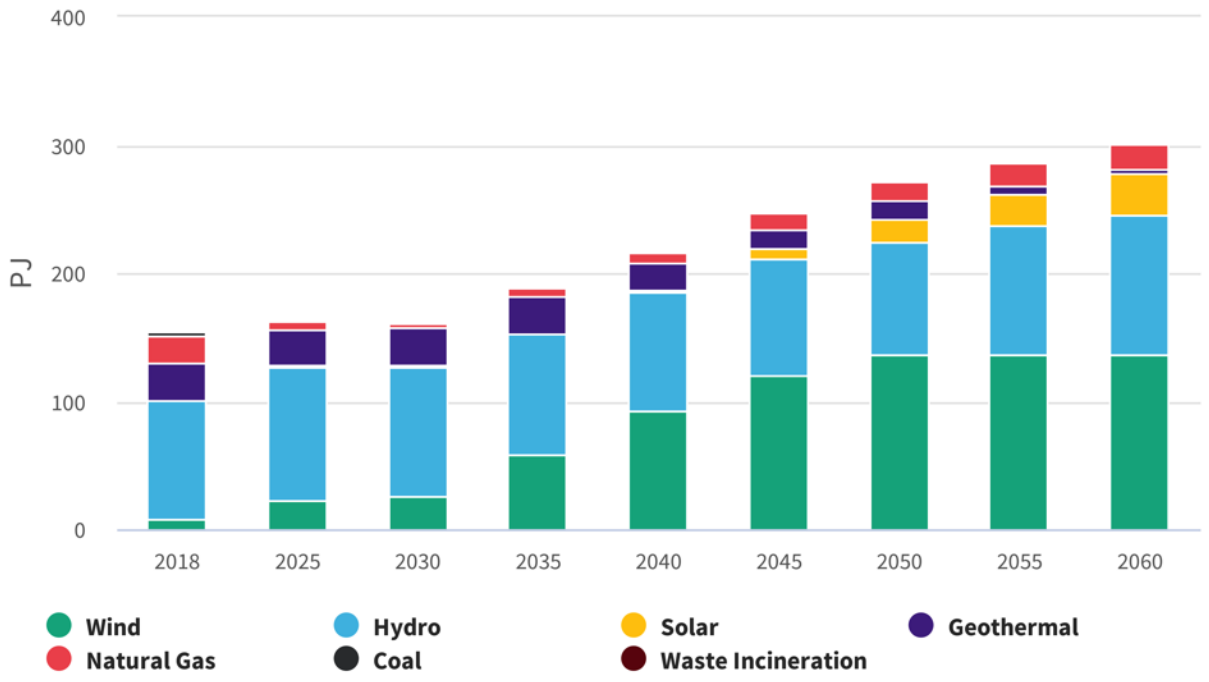
Sector Specific

Electricity

What might electricity generation look like?

Kea

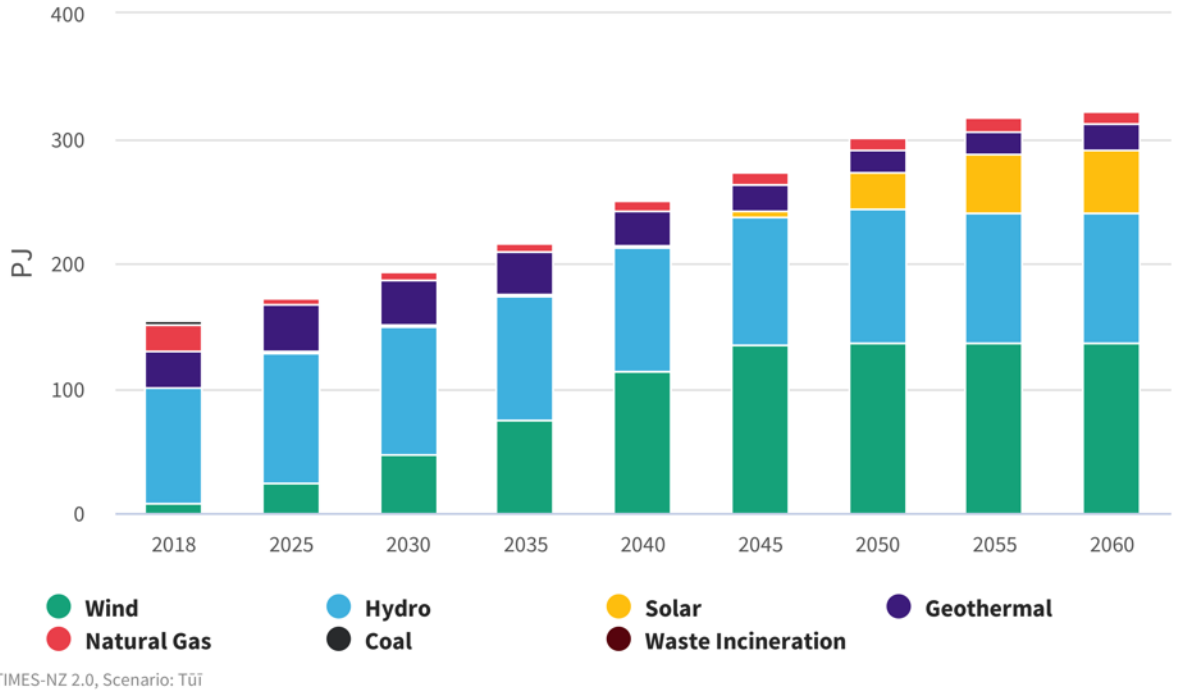
Electricity generation electricity generation for all subsectors, all enduse and all technology (PJ)



TIMES-NZ 2.0, Scenario: Kea

Tūī

Electricity generation electricity generation for all subsectors, all enduse and all technology (PJ)

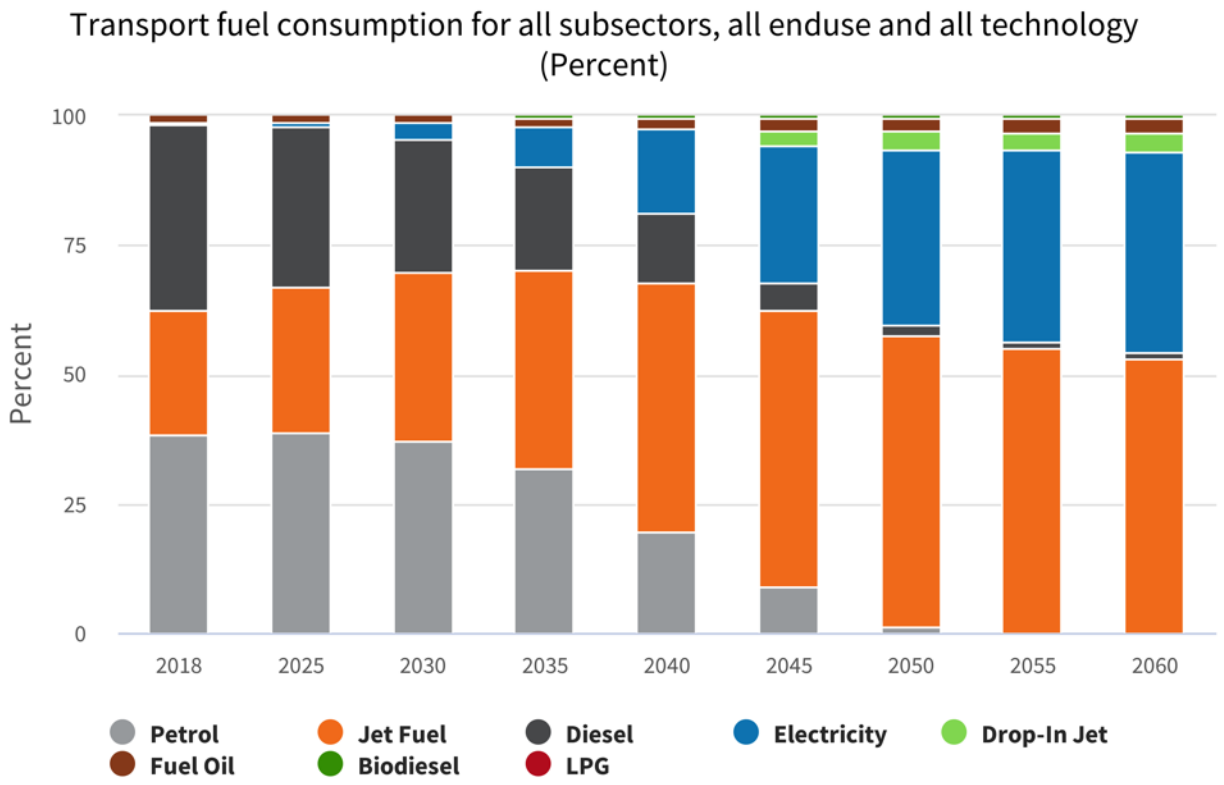


TIMES-NZ 2.0, Scenario: Tūī

Transport

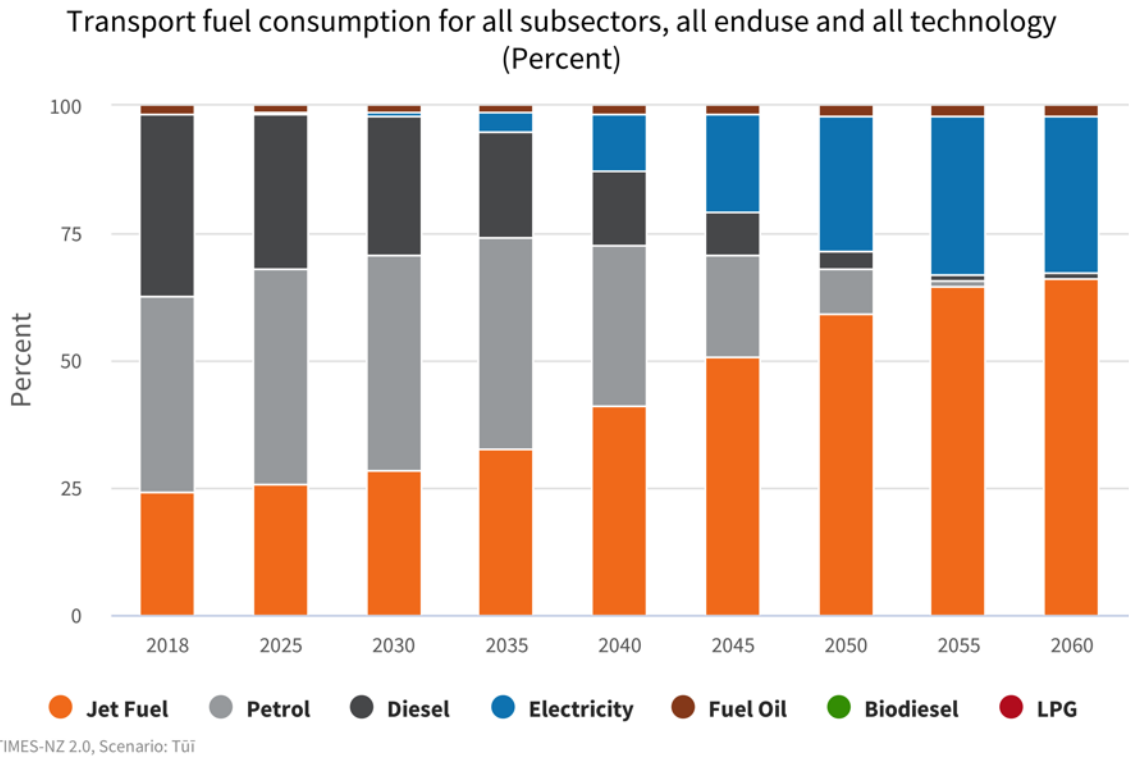
What fuel innovation might impact our emission footprint?

Kea



TIMES-NZ 2.0, Scenario: Kea

Tūī



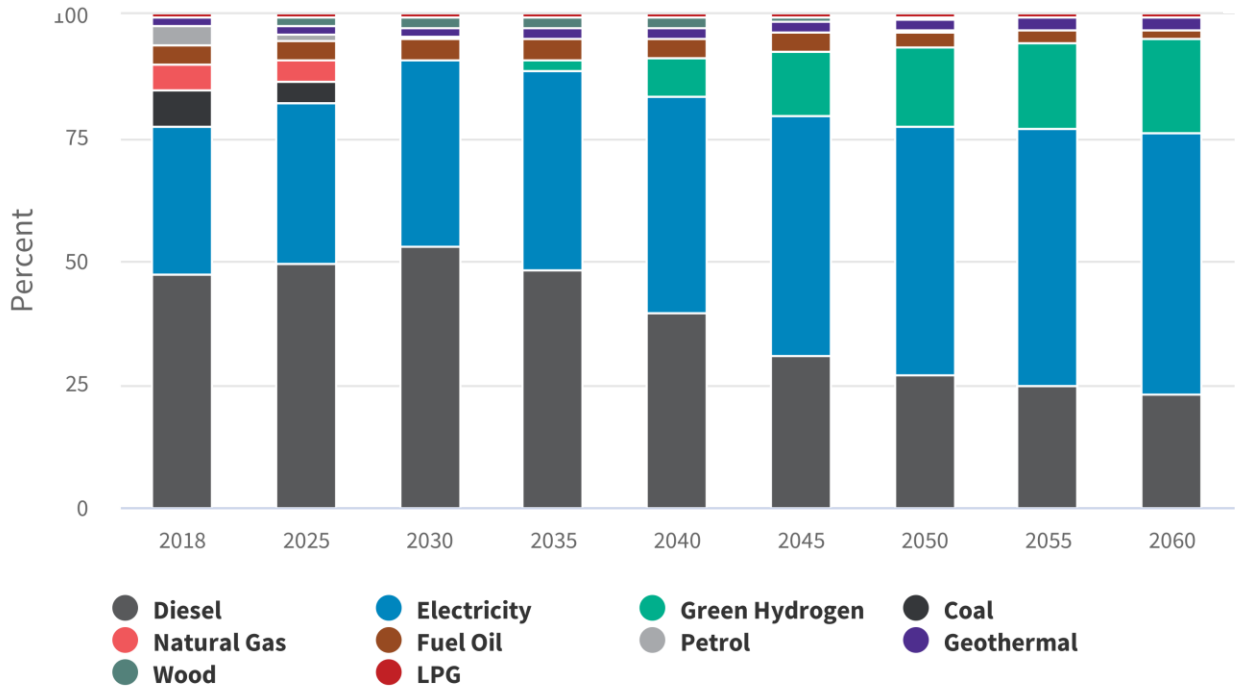
TIMES-NZ 2.0, Scenario: Tūī

Agriculture

How close might we get to carbon zero?

Kea

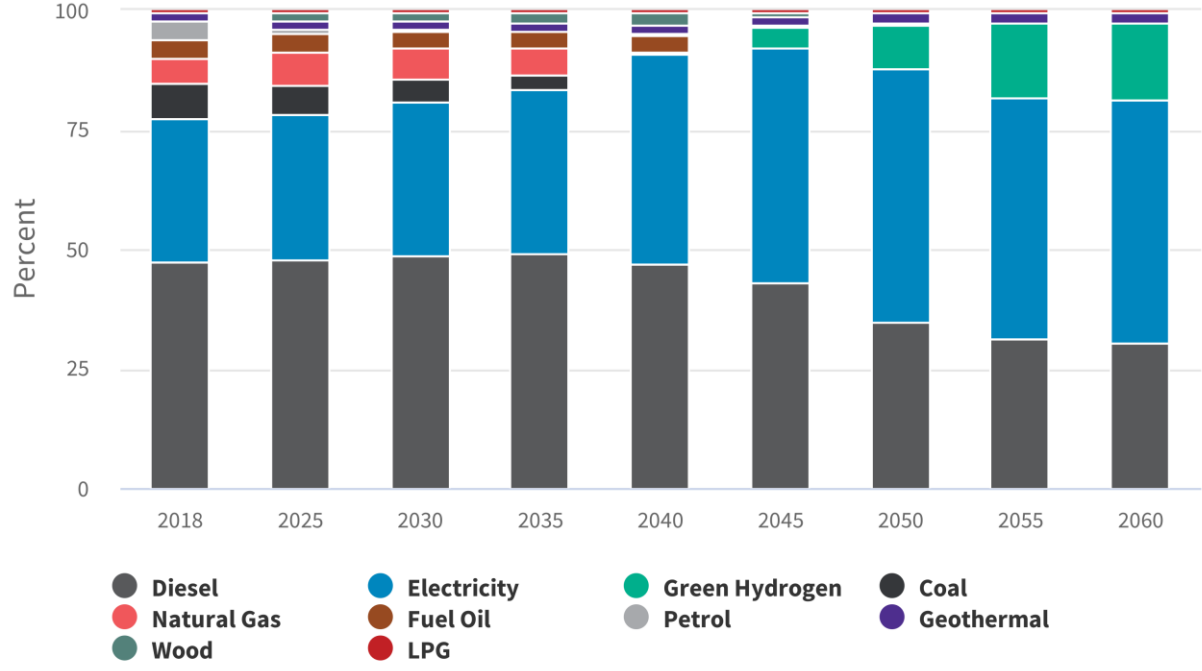
Agriculture fuel consumption for all subsectors, all end use and all technology



TIMES-NZ 2.0, Scenario: Kea

Tūī

Agriculture fuel consumption for all subsectors, all end use and all technology

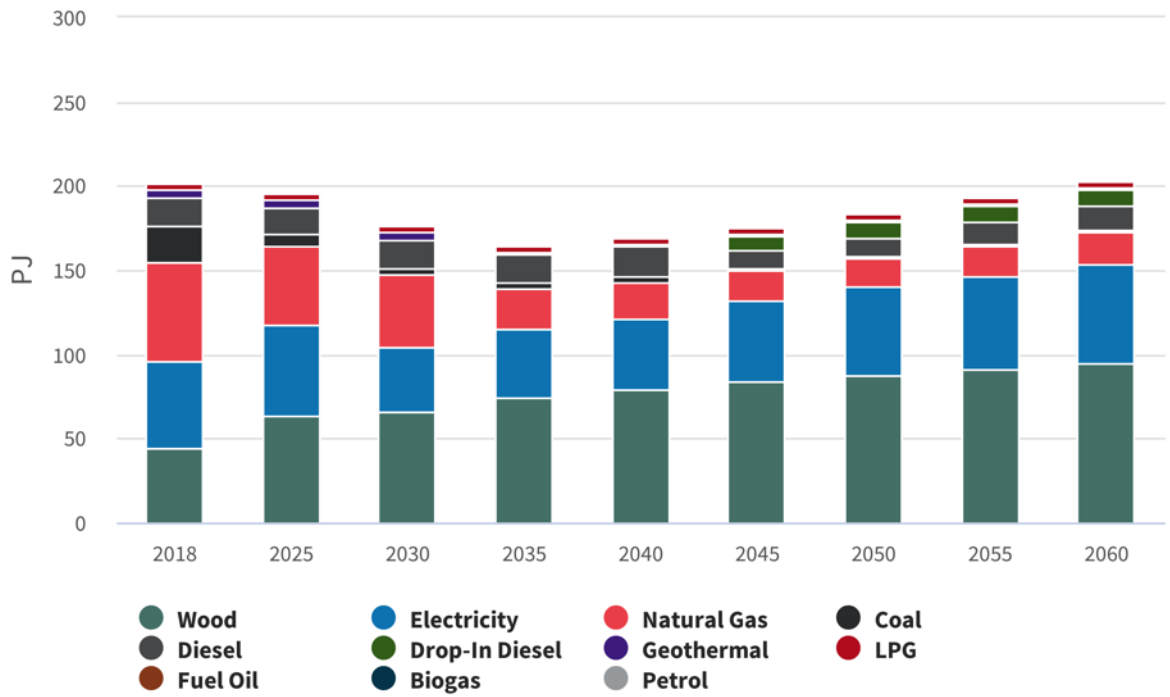


TIMES-NZ 2.0, Scenario: Tūī

Industrial

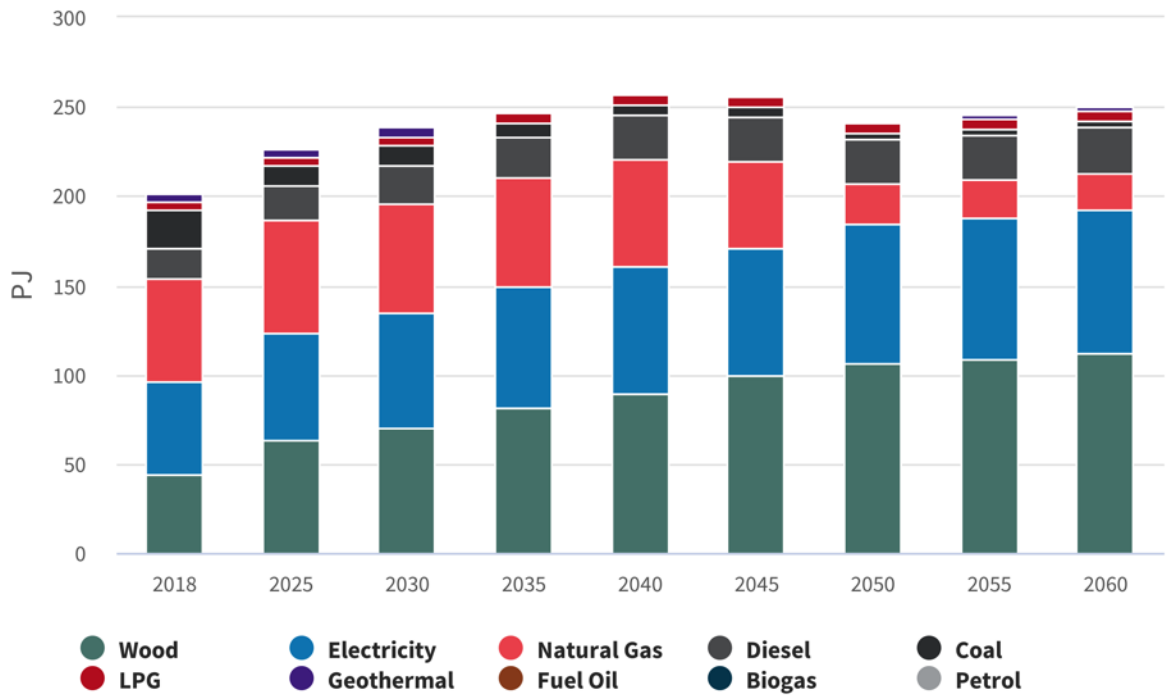
What technology change might we see in industry?

Kea



TIMES-NZ 2.0, Scenario: Kea

Tūī



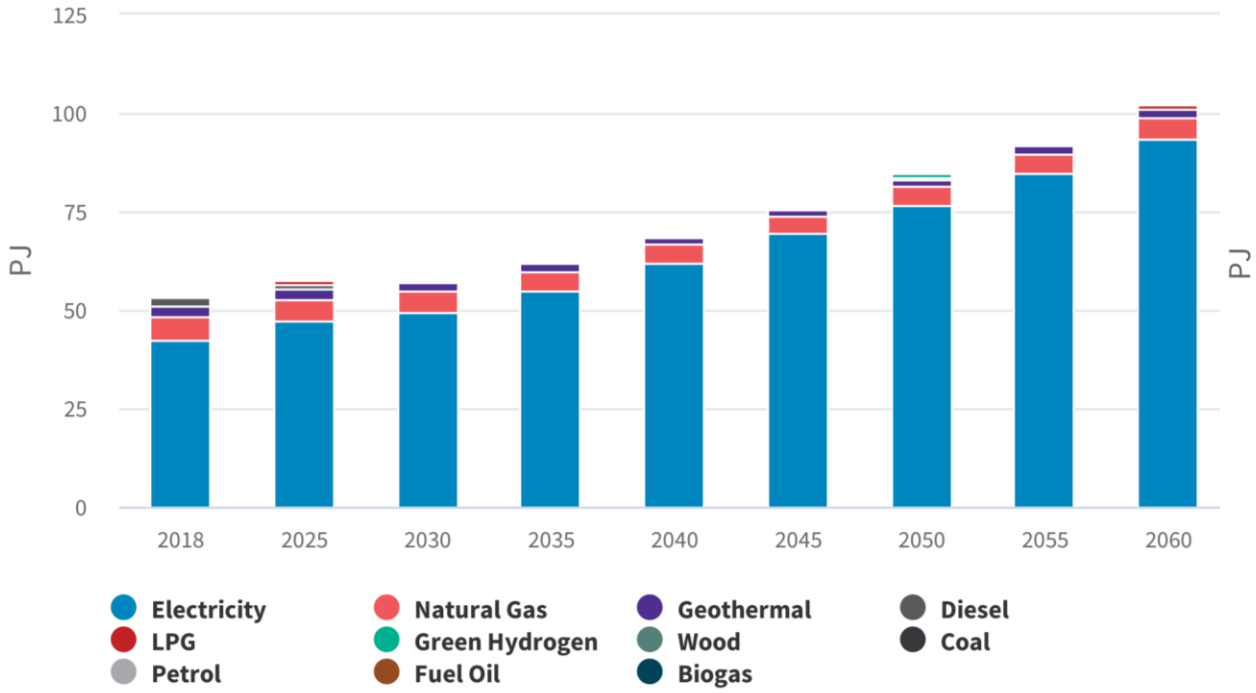
TIMES-NZ 2.0, Scenario: Tūī

Commercial

How might we manage increasing demad?

Kea

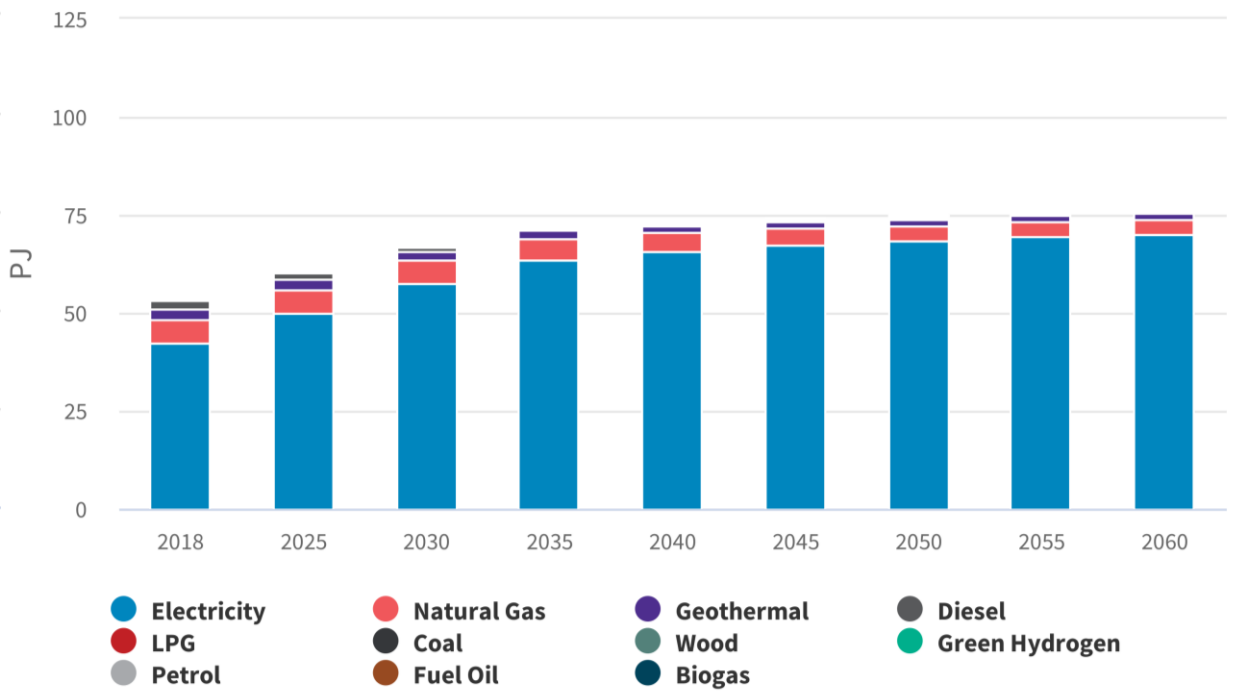
Commercial end use demand for all subsectors, all end use and all technology



MES-NZ 2.0, Scenario: Kea

Tūī

Commercial end use demand for all subsectors, all end use and all technology



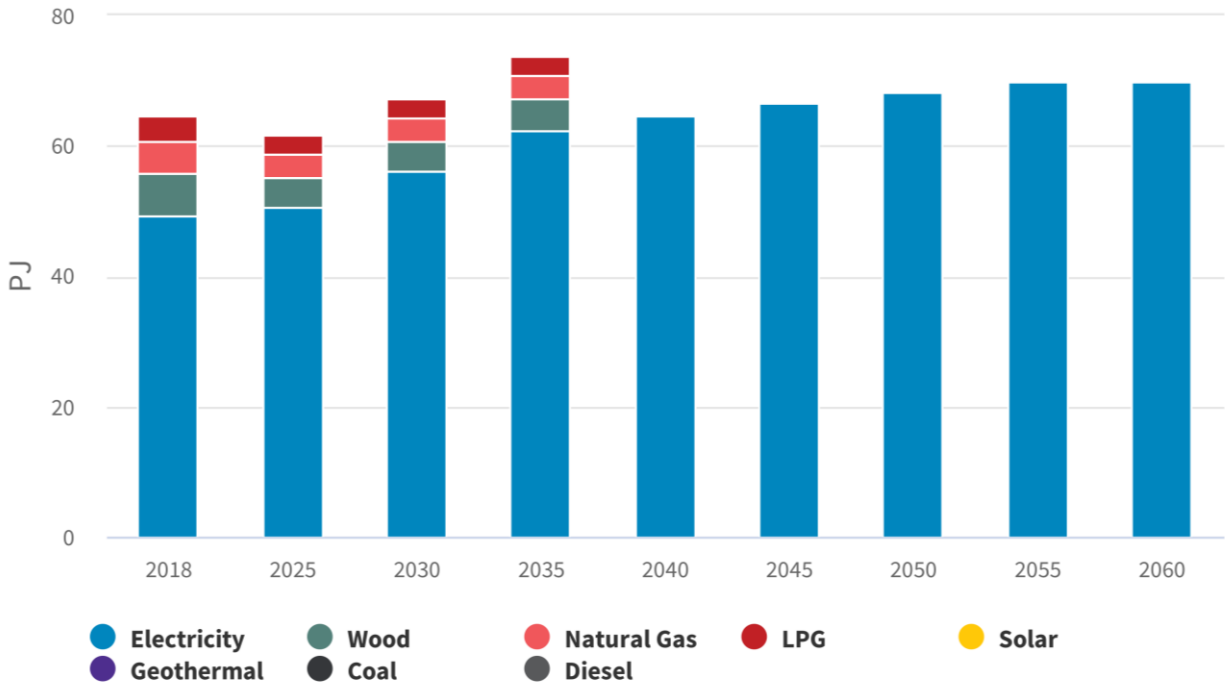
IMES-NZ 2.0, Scenario: Tūī

Residential

How might we transitioning our homes?

Kea

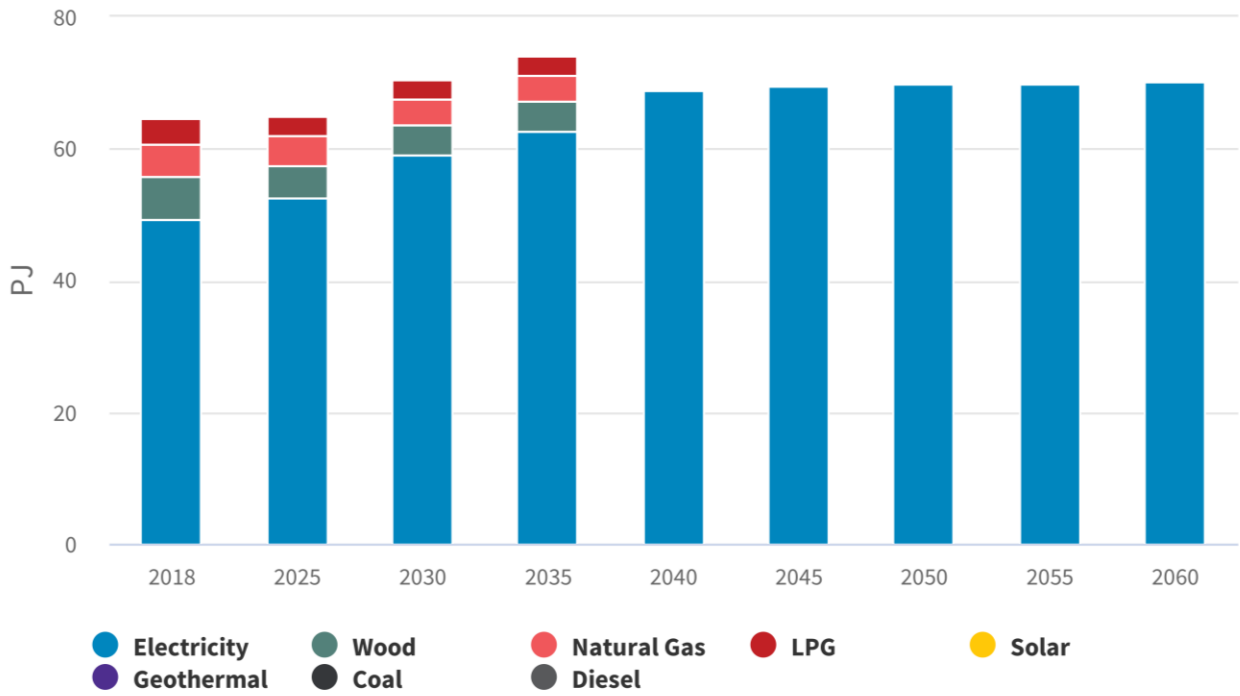
Residential fuel consumption for all subsectors, all end use and all technology



TIMES-NZ 2.0, Scenario: Kea

Tūī

Residential fuel consumption for all subsectors, all end use and all technology



TIMES-NZ 2.0, Scenario: Tūī

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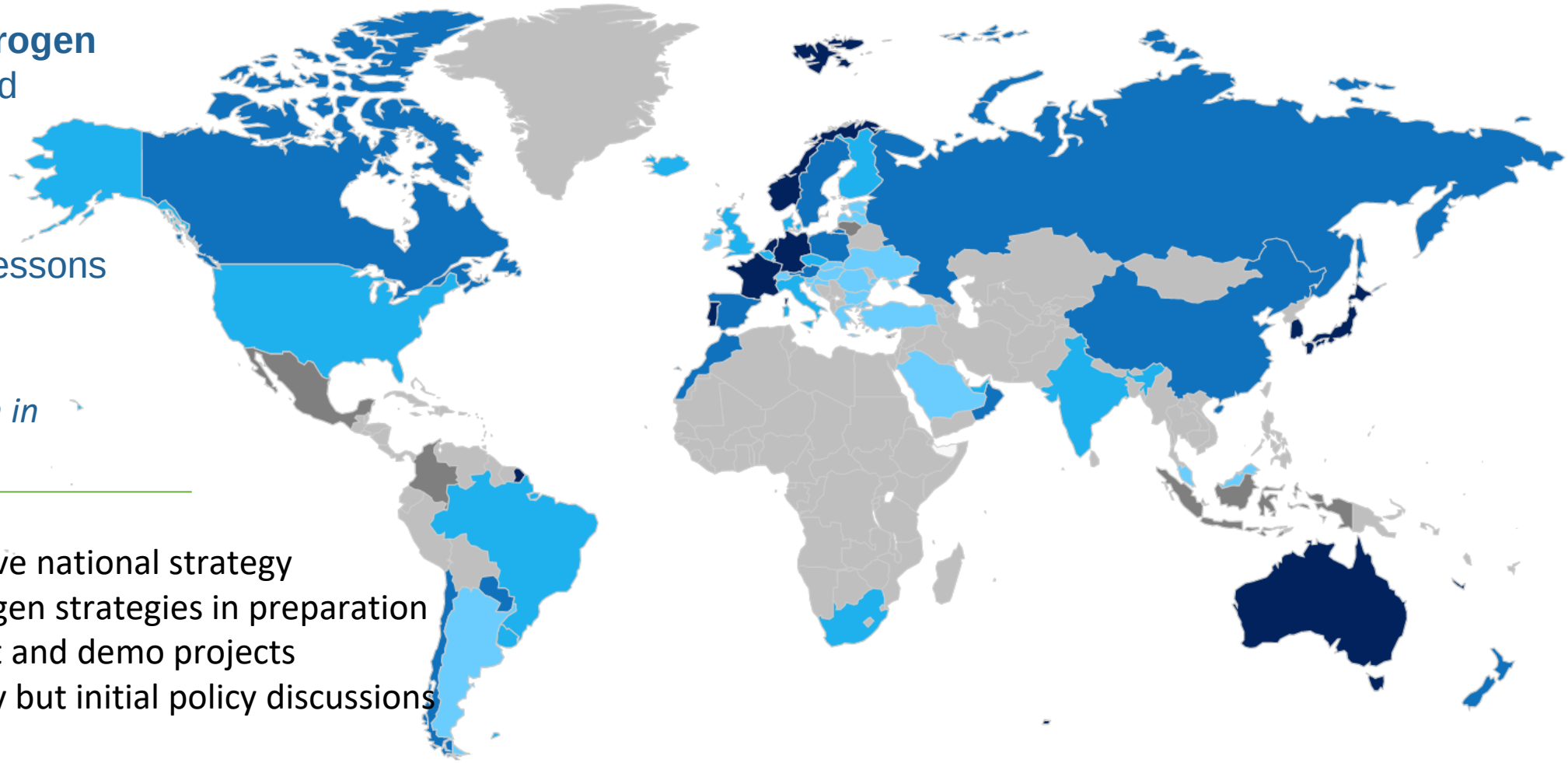
Innovation in Energy

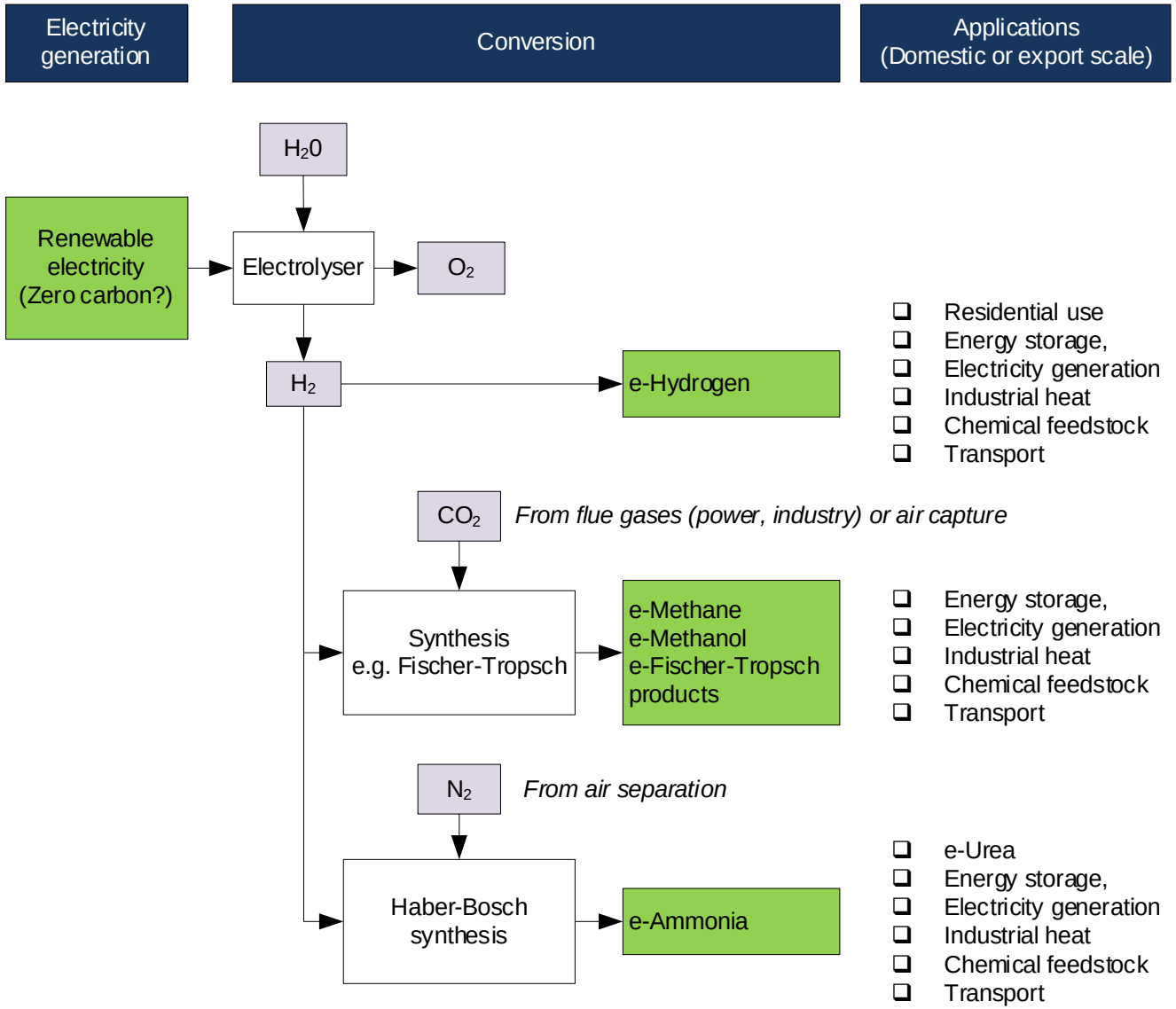
Hydrogen not just a hype anymore

Mapping **national strategies on hydrogen** to better understand focus and target of strategies, what influenced their development and lessons learned,

In collaboration with German MC – launch in Sept 2020



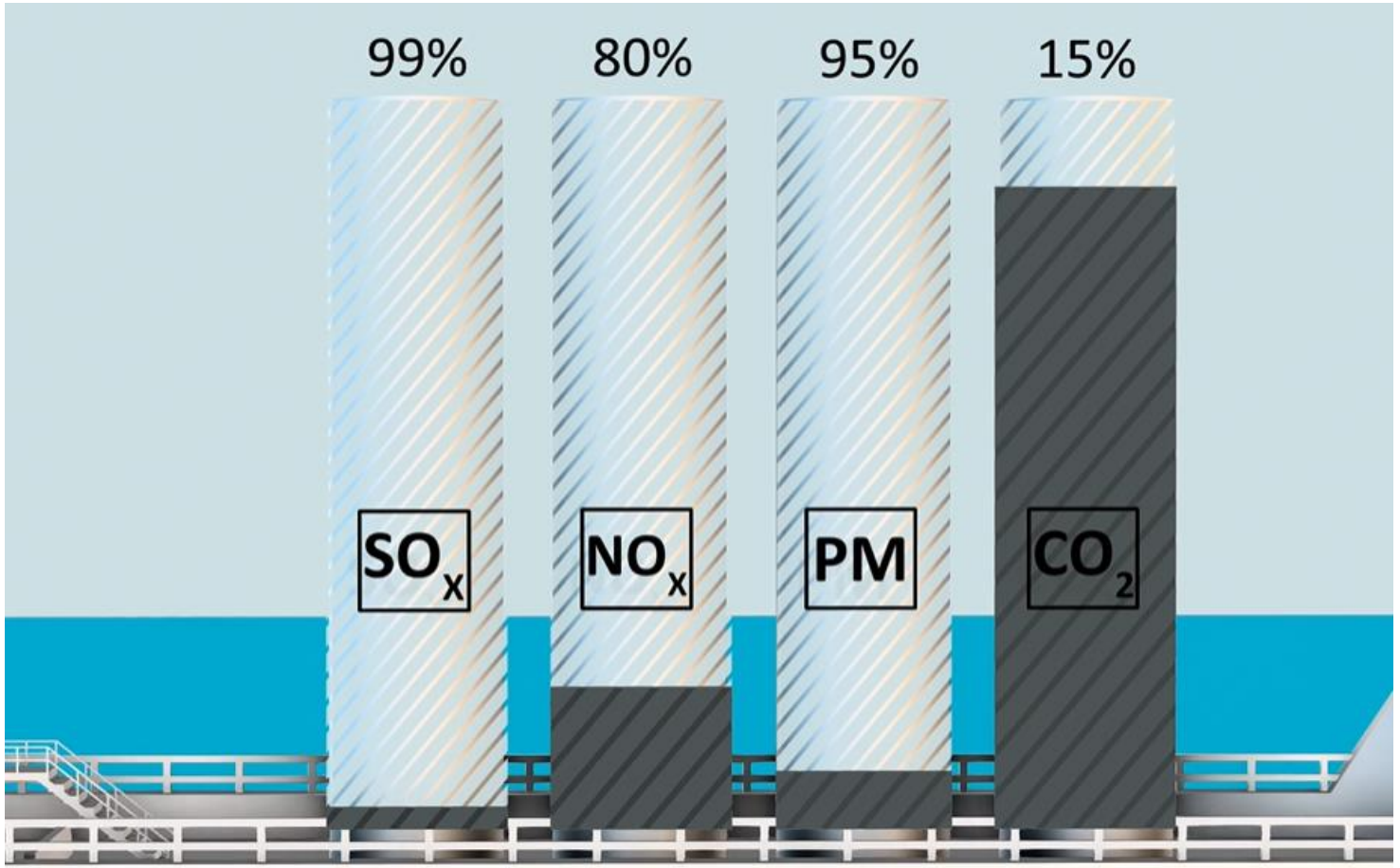
But it is not just all about hydrogen



Venture Taranaki is currently developing a ***Power to X roadmap*** *capturing how Taranaki will contribute to the economy and accelerate the shift towards a low-emissions future for New Zealand.*

Real-world-example:

Methanol as an alternative to conventional marine fuels



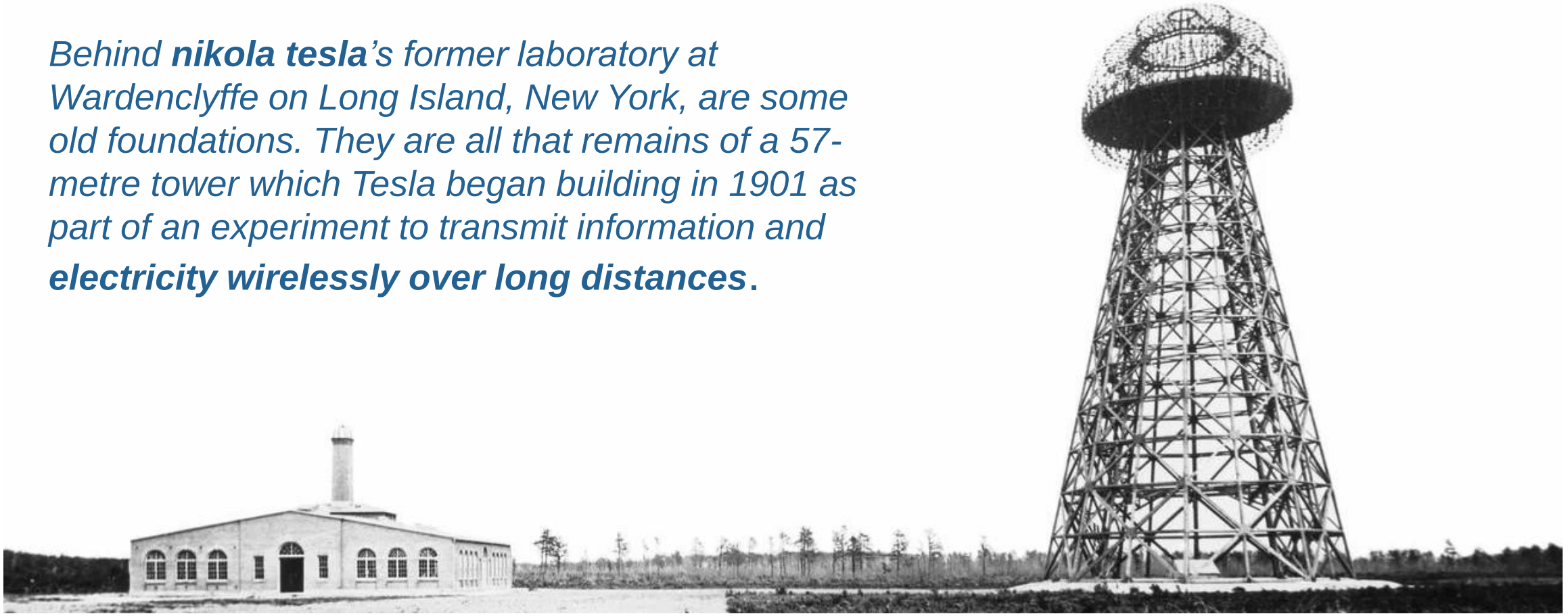
***Maersk** is now only building ships that can ran on carbon neutral fuels. It will operate its first neutral liner in 2023.*

***Stena Germanica** has travelled from Sweden to Germany powered by recycled methanol (2015)*

***Port of Antwerp** will convert the world's first tug to methanol (2022)*

Is the electricity sector going wireless?

*Behind **nikola tesla**'s former laboratory at Wardenclyffe on Long Island, New York, are some old foundations. They are all that remains of a 57-metre tower which Tesla began building in 1901 as part of an experiment to transmit information and **electricity wirelessly over long distances**.*



Thank you!

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