



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
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New Zealand Hydrogen Strategy

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Context: High level New Zealand Policies

New Zealand's government has committed to :

1. Renewable Electricity

- 100 per cent renewable electricity by 2035 (in a normal hydrological year).

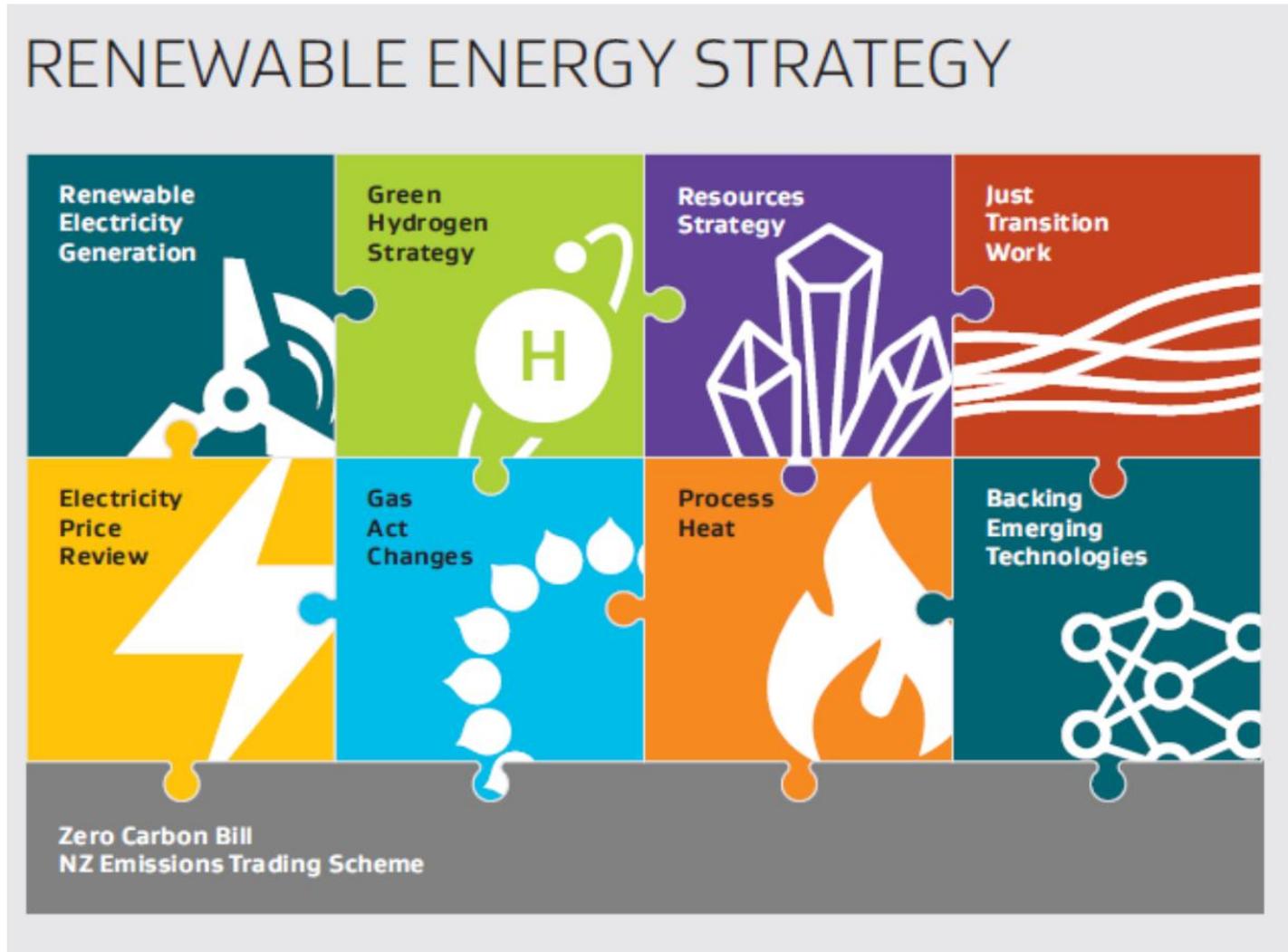
2. Emissions

- Net zero emissions by 2050.

COVID-19 Response has added an additional concern to our energy policy. However, these policies remain important in the assessment of any post-COVID recovery policy and investment.



Hydrogen is a key part of the NZ Govt's energy strategy





Our vision

To harness the hydrogen opportunity
for a sustainable and resilient energy
future for New Zealand



New Zealand Hydrogen Strategy has two parts:

1. Hydrogen Vision

- Released in September 2019
- Analysis of submissions published Q1 2020

2. Hydrogen Roadmap

- The target for date for New Zealand's hydrogen roadmap to complete the strategy is the first half of 2021.
- Modelling on hydrogen supply and demand in New Zealand has been completed by Castalia, as a first step in developing the roadmap.
- We hope to have this model on MBIE's webpage shortly.
- Not surprisingly this work concludes that New Zealand's ability to export hydrogen depends mostly on our expected electricity price relative to export competitors.

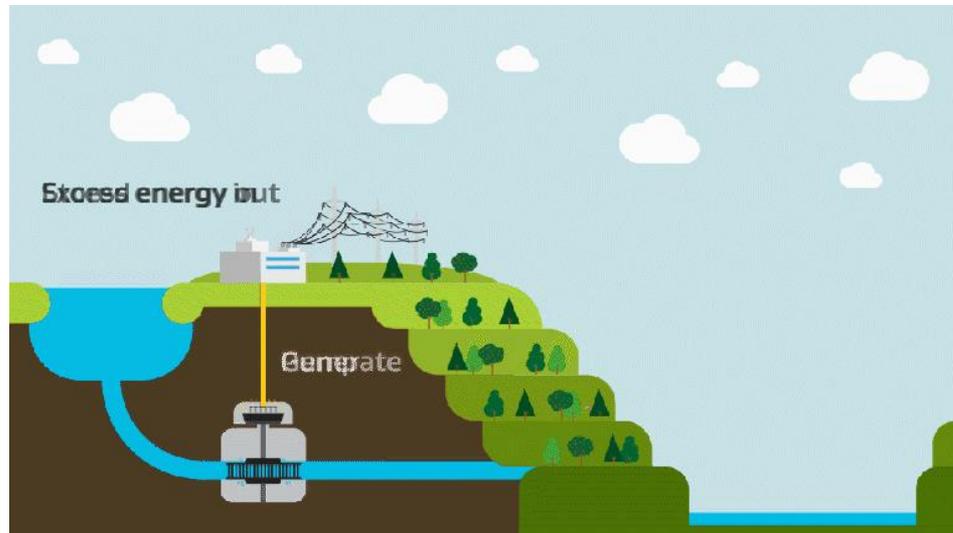


Work underway on hydrogen in New Zealand

- The New Zealand government to date has committed a total of \$21.6 million NZD on hydrogen specific projects.
- This includes :
 - \$1.25 million to support two hydrogen transport initiatives
 - \$20 million for a hydrogen industrial project
 - \$250,000 on a study into hydrogen gas transmission
- We have an active programme to ensure our regulations and standards governing hydrogen are fit for purpose.
- The Government has announced \$155 million NZD support for transformative energy projects. Some of these are hydrogen related but details have not been released publically yet.

Example of other Government initiatives

- NZ Battery – a project to assess optimal storage to reduce New Zealand's dry year problem, e.g. review pumped storage and other options



- What does this mean for hydrogen?
 - Green hydrogen costs are highly dependent on electricity price
 - removing dry year risk and thermal generation should in the long term allow our electricity market price to track downwards with LCOE of wind.



International hydrogen engagements

- The New Zealand government is working with several Asia Pacific countries (Japan, South Korea and Singapore) on future cooperation on hydrogen export from New Zealand.
- As the host of APEC 2021, New Zealand has been investigating a low carbon hydrogen standard. We are evaluating how this project will work now that APEC21 will be a virtual meeting.
- In terms of active international projects in New Zealand:
 - Obayashi Corporation of Japan is working with a the Tuaropaki Trust, to develop a 1.5 MW electrolyser using electricity from the Mokai geothermal power plant.
 - Mitsui Corporation of Japan has formed a joint venture with Hiringa Energy to support its work on hydrogen transport and hydrogen industrial use.