



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI

Energy Dialogue between Germany and New Zealand

Introduction to the Hydrogen Roadmap and hydrogen developments in New Zealand

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New Zealand's energy future



- New Zealand to set emissions budgets from 2022 to 2035 and an emissions reduction plan (ERP) for meeting the budgets.
- The Energy and Industry component of the ERP will include measures to:
 - ensure access to affordable and secure low-emissions electricity for all consumers
 - accelerate fuel switching and the uptake of energy efficiency measures in industry
 - support the development and deployment of low-emissions fuel options such as bioenergy and hydrogen
 - plan how to manage the phase out of fossil fuels across the energy system
- Energy Strategy
- Renewable Energy Targets

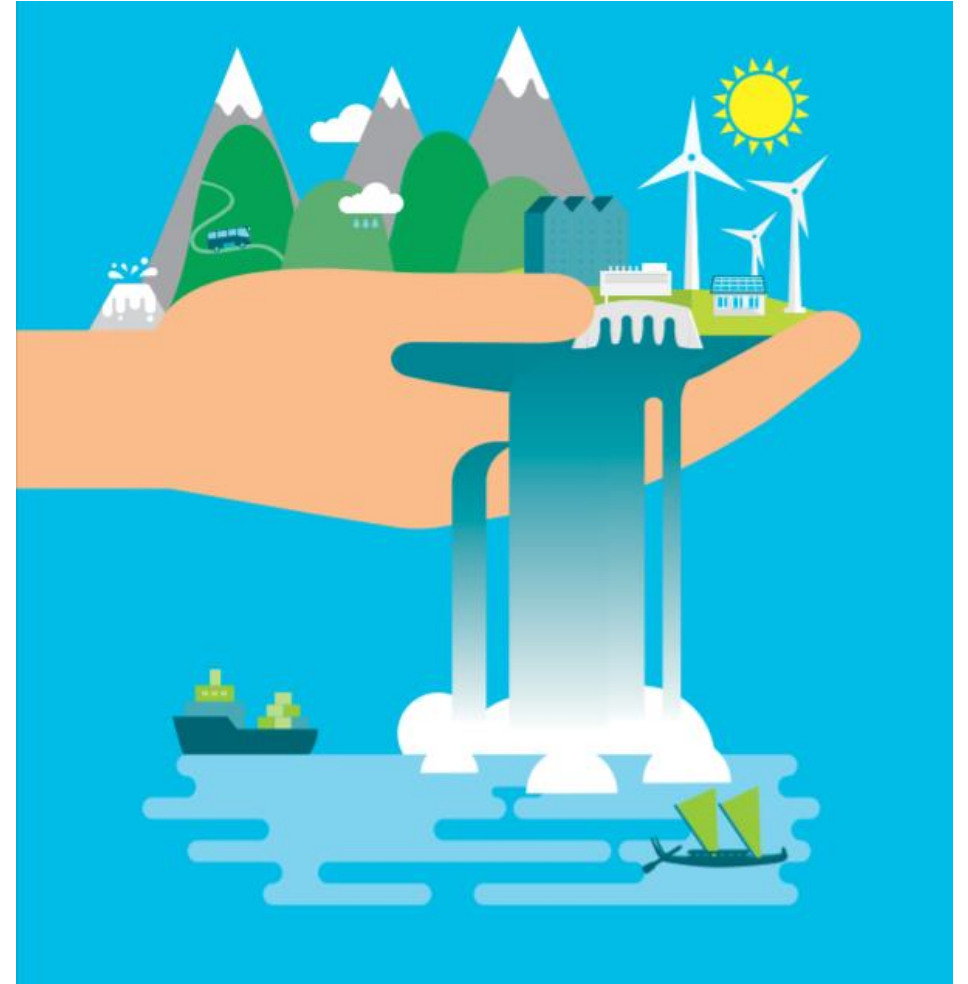
A Vision for Hydrogen in New Zealand

- The hydrogen vision released in 2019 outlined the potential uses of hydrogen in New Zealand and explored in a non-quantitative manner some of the issues around its use.



A roadmap for hydrogen in New Zealand

- The next stage of our hydrogen strategy is a roadmap for the development of a hydrogen industry in New Zealand.
- The roadmap will explore issues that need to be resolved for hydrogen's use in the wider economy, and what steps need to be undertaken to resolve them.
- The primary objective of a roadmap is to provide a blueprint for the development of a hydrogen industry in New Zealand, and inform foreign and domestic investment in hydrogen.

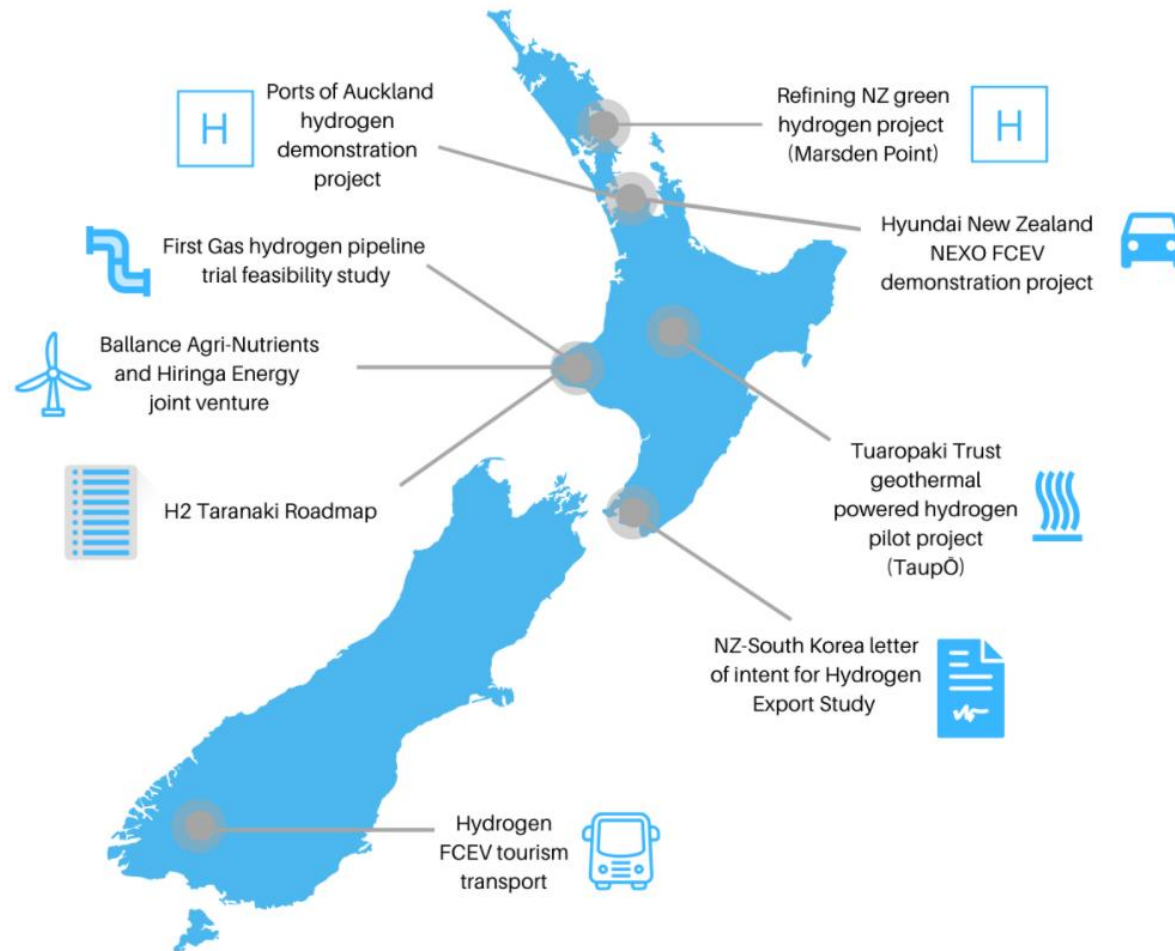


A roadmap for hydrogen in New Zealand

- Stage 1: initial view of hydrogen supply and demand in New Zealand
 - completed in late 2020.
- Stage 2: develop potential scenarios for a future New Zealand hydrogen economy, along with key drivers that will determine how those scenarios might play out.
 - Currently underway
- Aims to inform policy and investment decision-making about the role of hydrogen in the future and will enable the completion of the Roadmap to determine the “right-size” for our hydrogen economy.



Hydrogen Developments in New Zealand – Projects



Hydrogen Developments in New Zealand – Research and Development Initiatives

- **GNS Science** - The Aotearoa: Green Hydrogen Technology programme
- **GNS Science** - “Nano-catalytic surfaces for efficient, stable fuel cells and eco-friendly hydrogen production”
- **GNS Science** - “Powering NZ’s Green-Hydrogen economy: Next-generation electrocatalytic systems for energy production and storage”
- MBIE and the German Federal Ministry of Education and Research (BMBF) have agreed to jointly support up to three Green Hydrogen research projects through the February 2021 Catalyst funding round.
- **University of Canterbury** – funding was provided to develop a new process and materials to produce bio-hydrogen and capture carbon dioxide by using New Zealand wood biomass resources



International collaborations and participation in international hydrogen initiatives

- New Zealand and Singapore signed an Arrangement on 15 July 2021 regarding cooperation on low-carbon hydrogen.
- The Governments of Japan and New Zealand signed a Memorandum of Cooperation on green hydrogen in 2018. The Memorandum seeks to encourage industry and research institutes to collaborate in the field of hydrogen.
- Ministry of Business, Innovation and Employment , on behalf of New Zealand, is also leading work within the Asia Pacific Economic Forum (APEC) to **initiate an APEC-wide discussion on the development of an international standard for low-carbon hydrogen production.**



New Zealand has participated and will continue to participate in the:

- Japan Hydrogen Ministerial
- Clean Energy Ministerial - 'Hydrogen in Ports' task
- ASEAN: Working group on hydrogen Supply and Demand in Asia

Interests of New Zealand government for bilateral cooperation

- The Governments of New Zealand and the Federal Republic of Germany are both committed towards ambitious action towards net zero emissions, and limiting the global temperature increase to 1.5°C. To reach these targets, both sides acknowledge that the energy system must be transformed towards sustainability and emissions reductions, which has political, technical, and economic implications.
- New Zealand sees significant potential for cooperation and collaboration, particularly in the areas of :
 - Green hydrogen;
 - Decarbonisation of industry; and
 - Offshore wind.

