

## *New Zealand*

*82<sup>nd</sup> ExCo February 2020, Paris, France*

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Hyundai Nexo – 1st H2 car in NZ



Kawerau geothermal field – H<sub>2</sub> potential

## Recent In-Country Developments / Update on Policy

- National Energy strategy
  - In November 2018 legislation ends new offshore oil and gas exploration in New Zealand.
  - Targets:
    - GHG emissions to 5 per cent below 1990 levels by 2020
    - Paris COP21 commitment to reduce GHG emissions to 30 per cent below 2005 levels by 2030 equivalent to 11 per cent below 1990 levels.
    - 90% renewable energy by 2025 and 100% by 2035 in a normal hydrological year.
    - Net zero emissions by 2050

## Recent In-Country Developments / Update on Policy

- Government policy incentives
  - A target of doubling the number of electric vehicles in New Zealand every year to 2021 or about 2% of the fleet.
  - Tax exemptions on electric vehicles until they make up two percent of the fleet.
  - US\$700k annually for a nation-wide electric vehicle information and promotion campaign over five years
- In Dec 18 the newly established NZ Hydrogen Association was accepted as one of 7 global associations to work with the Hydrogen Council. The NZHA has 35 members and growing.
- In Nov 2019 a letter of intent was signed with South Korea to investigate the feasibility and core technology required to develop a liquid hydrogen supply chain for green hydrogen

## Recent In-Country Developments / Update on Policy

- In Sep 2019 the green paper “A Vision for Hydrogen in New Zealand” was launched by government seeking feedback on the potential for hydrogen production, export, and utilisation in the New Zealand economy.  
[https://img.scoop.co.nz/media/pdfs/1909/Hydrogen\\_Discussion\\_Paper.pdf](https://img.scoop.co.nz/media/pdfs/1909/Hydrogen_Discussion_Paper.pdf)
- In March 2019 “H2 Taranaki Roadmap” for the energy province of Taranaki and beyond, was released by Hiringa Energy in conjunction with Venture Taranaki, New Plymouth District Council, Ministry of Business Innovation and Employment.  
<https://about.taranaki.info/Taranaki2050/Work-Group-Files/H2-Taranaki-Roadmap.pdf>
- Hiringa Energy is working to have initial heavy FC pilot vehicles available in 2020 with fleet roll-outs in 2021.



## Highlights (R&D, Demo)

- Sep 2019 First Gas' received a government Provincial Growth Fund (PGF) grant to assess whether hydrogen can be transported via the existing gas pipe network as well as its application in heating, transport, power generation and integration with other renewable generation sources. Costs of the \$520,000 phase one project will be evenly split between First Gas and the PGF.
- Professor Shusheng Pang of the University of Canterbury has received \$1m over 3 years to 2022 for developing advanced biomass gasification with carbon capture.
- Professor Richard Blaikie of the University of Otago, has received \$1m over three years to 2021 to develop a cost-effective solution for large-scale production of hydrogen gas.



## Other News (Market/Commercial)

- Ports of Auckland have called tenders for NZ's first hydrogen refuelling station with project partners Auckland Transport, Auckland Council and KiwiRail, and have been awarded a 14% subsidy for the purchase of a hydrogen fuel cell (HFC) bus and three HFC cars.
- Tuaropaki Trust and Japan's Obayashi Corporation have commissioned Hydrogenics to develop a pilot 1.5 MW hydrogen production electrolysis plant that utilises heat from the Mokai geothermal field.
- In June 2019 Hiringa Energy and Ballance Agri-nutrients announced the signing of a Joint Development Agreement to develop 16 MW of renewable energy for production of green hydrogen and ammonia at the Kapuni industrial complex in Taranaki.

## Other News (Market/Commercial)

- Hiringa Energy has moved into detailed design of a hydrogen refuelling network with the selection of four central North Island regions/cities (Palmerston North, Taranaki, Hamilton and Tauranga) as the first priority regional refuelling stations in its Phase 1 network enabling coverage of over 95% of the North Island's heavy road freight routes.
- Concept Consulting's report of Jan 2019 'Hydrogen in New Zealand' found applications for hydrogen in niche freight and heavy transport, and energy intensive on-site transport operations such as forklifts and cranes. The report was funded by Contact Energy, the Energy Efficiency Conservation Authority, First Gas, Meridian, Energy, the Ministry of Business Innovation and Employment, and Powerco.

[http://www.concept.co.nz/uploads/2/5/5/4/25542442/h2\\_report1\\_summary\\_v4.pdf](http://www.concept.co.nz/uploads/2/5/5/4/25542442/h2_report1_summary_v4.pdf)



## IEA Hydrogen Task – NZ Engagement

- Task 38 Power-to-Hydrogen and Hydrogen-to-X: System Analysis of the techno-economic, legal and regulatory conditions – Jonathan Leaver, Unitec.
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- Task 41 - Data and Modelling – Jonathan Leaver, Unitec.
- Leaver, J. D. (2019). *Modelling with Hydrogen: A Holistic Challenge*. IEA - H2TCP Task 41: Hydrogen Data and Modelling Workshop, Brussels, Belgium.
- Quarton, C.J., Tlili, O., Welder, L., Mansilla, C., Blanco, H., Heinrichs, H., Leaver, J., Samsatli, N.J., Lucchese, P., Robinius, M., & Samsatli, S. (2019). The curious case of the conflicting roles of hydrogen in global energy scenarios. *Sustainable Energy and Fuels* (Vol. 9 Oct).



## FCV

- 1 off-road vehicle
- 1 Hyundai Nexus

## Infrastructure

HRS	Early market station open to public of fleet	Private Research Lab and/or company site	HRS subtotals by HRS Status and Type
Open	0	0	0
Planned	1	0	1
Projected	4	0	4

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