Monday, 6 December 2021
Future security and resilience workstream

Good afternoon

Thank you for the opportunity to participate in the Future Security and Resilience Workshop held this morning.

I provided several comments during the workshop. There was a common thread linking those comments which I would like to expand on.

There does not currently appear to be consideration by the Electricity Authority and Transpower of a scenario where:

- New Zealand over-produces the volume of renewable energy required for domestic requirements
- The balance of the over-production is used for manufacture of a range of energy-intensive products such as green hydrogen and its derivatives such as ammonia, urea, methanol and synthetic fuels.
- The production of green hydrogen can be curtailed and used as a demand response mechanism to provide grid balancing and this forms part of power purchase agreements with manufacturers.

Such a scenario of energy over-production and export has recently been considered by the Australian Energy Market Operator – they call this their hydrogen superpower scenario: AEMO | Australia's energy transition continues at pace. There are also many large renewable generation projects being developed in Australia in conjunction with energy export opportunities.

It also forms the core of a report recently prepared for Venture Taranaki: Power-to-X-Report-Nov-2021.pdf (venture.org.nz)

Investment options which are in-line with this scenario are being actively considered in New Zealand at the moment:

- Hiringa Energy have just received resource consent for their 24MW wind farm at Kapuni. The electricity produced will primarily be for production of green hydrogen (for domestic markets) but I understand there are also intentions to release this to the grid
- Obayashi Corporation is developing the Halcyon project producing green hydrogen for export using electricity from the Mokai geothermal field
- Meridian and Contact are promoting the Southern Green Hydrogen project. This is potentially a 600MW project and is likely to produce hydrogen for domestic and export markets. This project has attract interest from a wide range of parties, some of whom are also likely to be exploring other projects in New Zealand
- There are also several parties exploring large new renewable electricity generation projects in New Zealand where development may depend on concurrent development of energy export opportunities.

While this is a sector still developing I suggest the concept of over-production of renewable electricity and large-scale energy export is a realistic scenario for New Zealand and should be considered as part of industry planning with regard to security and resilience.

Nga mihi
John Haylock