Media Release for immediate use

New Zealand's Hydrogen Opportunities – "Real and Achievable"

Dr. Linda Wright, Chief Executive of the New Zealand Hydrogen Association, says the opportunity for large scale hydrogen production in New Zealand for both domestic use and export is both real and achievable, but cautions it requires a long-term view and commitment.

Dr. Wright says since the announcement of the closure of Tiwai Point Aluminium Smelter she has received a large number of enquiries from a wide range of national and international parties interested in the prospect of using the smelter's electricity supply to create a large-scale hydrogen production facility during the next 3 to 5 year-period.

"We now have before us a once-in-a-intergenerational opportunity to be a global leader as the world seeks to advance the delivery of hydrogen infrastructure for use across energy systems," she says.

"The availability of such a significant amount of renewable electricity that the smelter closure would liberate, not only presents an undoubted opportunity for New Zealand, but also a very real possibility for the Southland region to become a green hydrogen export location of international significance.

"Green hydrogen will play an important global role in achieving an integrated low emission energy future. Hydrogen is an energy dense vector that can be used to transport the stranded electricity from New Zealand's southern-most hydro-electric dams, to wherever we need it, whenever we need it," Dr. Wright says.

Dr. Wright points out that New Zealand already has existing hydrogen production expertise. "We have been producing thousands of tonnes of hydrogen annually for several decades at some of our largest industrial facilities that form the backbone of our economy. We also transport it on our roads safely without incident," she says.

Dr. Wright says that most of our current production is made from steam reforming of natural gas, which is considered brown hydrogen as it's derived from fossil fuel. Hydrogen is used to refine oil products at our only refinery, produce fertiliser for use across our agriculture industry, and to make methanol for use in chemical derivatives that are used to produce every day products such as building materials, foam, resins, plastics and a variety of health and pharmaceutical products.

"Unbeknown to most, for the best part of the last decade, hydrogen has also been produced in New Zealand by splitting water through electrolysis using electricity from our highly renewable grid. This low emission hydrogen is delivered by tube trailers to a variety of customers for use in food production, industrial applications and for critical functions in hospitals and research laboratories," Linda Wright says.

Dr. Wright says the desire to decarbonise economies has led not only to an unprecedented global investment in hydrogen technology, but also in an increasing awareness of New Zealand's abundant renewable energy resources, particularly from some of our populace Asian trading partners, who will struggle to produce enough of their own renewable energy to meaningfully reduce emissions.

"Japan, South Korea and Singapore stand out in particular, and the New Zealand Hydrogen Association has been in trade discussions with both private sector and government organisations in those countries. They are ready-to-go in their commitment to hydrogen," she says. "Have no doubt the export potential is there and real."

Dr Wright says large scale hydrogen production would take several years of planning to get to commissioning and production and would require a staged approach with collaborative partnerships involving both private sector and Government, as well as working with the international hydrogen leaders across the supply chain.

“A phased delivery of capacity would need to be aligned with growth in demand, expansion of skills and capability, and technology deployment at a centralised site and distributed locations. Undoubtedly, it would create collaboration opportunities, international trade partnerships and attract inward investment.

Dr. Wright says while the New Zealand Government continues to develop its policies to support the delivery of green hydrogen infrastructure for domestic use and export, there is a need to broaden our general understanding of the role that hydrogen can play across our energy system.

“In particular there is a need to up skill and grow capacity and capability in order to facilitate the successful design and delivery of infrastructure across the country. A well informed Government, public and workforce is a critical component of this opportunity and our success,” she says.

Linda Wright says while it would be easy for nay-sayers to pour cold water on the prospect of New Zealand taking a leadership role in the rapid global deployment of hydrogen infrastructure, she is a strong believer in the ability of both the Government and the private sector in New Zealand to respond to the opportunities the closure of the smelter at Tiwai would bring and that innovation through collaboration is the best way forward.

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