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NZ seeks to use its renewable energy resources to develop large-scale liquid hydrogen exports

As New Zealand looks to decarbonise its total energy system, plans are already afoot to export New Zealand's abundant renewable energy via large-scale liquid hydrogen.

This week private sector consortia from New Zealand and Korea, supported by their respective governments, signed a letter of intent (LOI) to investigate the feasibility and core technology required to develop a liquid hydrogen supply chain for green hydrogen to be produced and liquefied by renewable electricity in New Zealand and imported into Korea for distribution to consumers.

The signing ceremony took place at the New Zealand Ambassador's Residence in Seoul, with New Zealand's Minister of Trade and Export Growth Hon. David Parker representing the New Zealand Government, and Dr Linda Wright, CEO of the New Zealand Hydrogen Association representing the New Zealand private sector consortium members. Also present were Korean National Assembly respresentatives and government officials, key private sector industry representatives, the head of the South Korean SEA LH2 Consortium, Professor Daejun Change, as well as H2Korea Chairman Moon Jae-do.

Dr Linda Wright says, "while the opportunity for New Zealand to export green hydrogen from its abundant renewable energy resources is in its infancy, the signing of this LOI by private sector companies and supported by the respective governments, clearly indicates the potential for New Zealand to become a major exporter of green renewable energy in our Asia-Pacific region."

"Countries like Korea will struggle to decarbonise their energy systems with their own renewable energy resources and will need to import green hydrogen to power their energy intensive manufacturing based economies. New Zealand has been a major exporter of food resources for a very long time, but it took the invention of refrigeration for agriculture to really create the wealth we enjoy as a country today.

"Liquid hydrogen is the refrigerated equivalent for green energy. If we can effectively harness the renewable electricity generated from our abundant wind, geothermal, solar and hydro resources and store it for transportation, then we can add large scale green hydrogen to our export portfolio.

Linda Wright says the export of green hydrogen can play a big role in reducing total global greenhouse gas emissions, while at the same time, the development of a hydrogen economy in New Zealand will advance our own transition to zero emissions through the decarbonisation of our heavy vehicle transport fleet and industrial process heat, which are both heavily reliant on imported fossil fuels.

The LOI was formally signed by both Minister of Energy and Resources Hon Dr Megan Woods on behalf of the New Zealand Government, and Professor Daejun Chang, head of the South Korean SEA LH2 Consortium, as well as private sector members of the New Zealand consortia.

"Once the evaluation of the technical and economic feasibility has been completed, it is hoped that the initiative will lead to a more detailed project involving the engineering and concept design of key facilities and rigorous economic analysis," Wright says.

The New Zealand consortium includes Contact Energy, K One W One, Refining New Zealand and the New Zealand Government, while the Korean consortium represented by LATTICE Technology, comprises six commercial Korean companies including KOGAS-Tech, KOMAC and KOMIPO.

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Photo supplied: LOI Signing Ceremony, L to R: Dr Linda Wright, Professor Daejun Chang, and Hon. David Parker.