New zealand battery research and development

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Over the period 2016-2023 the New Zealand Government investigated options to ensure sufficient energy storage for electricity generation in the event of future low rainfall resulting in inadequate hydro lake storage. (The NZ battery project). The bioenergy options investigated included energy storage from gaseous, liquid and solid biofuels.

New Zealand"s "dry year problem" is when our existing hydro-power catchments don"t receive enough rainfall or snowmelt and the level of the storage lakes runs low. When this occurs some form of back-up is needed, and this is currently provided by fossil fuel generation.

Bioenergy ? Biogas ? Liquid Biofuels ? Solid biofuels ? Bioenergy Facilities

Inovo have been engaged since 2020 by the Ministry of Business, Innovation and Employment (MBIE) to develop and manage the master-programme for the New Zealand Battery project through to completion of the detailed business case. This role has incorporated the coordination of business case workstreams and leveraged Inovo strategic planning capabilities to integrate legislative process and project experience.

New Zealand Battery is a climate change initiative investigating the ability of pumped hydro, and alternative technologies, to address New Zealand"s dry year electricity problem - when our existing hydro-power catchments don"t receive enough rainfall or snowmelt and the level of the storage lakes runs low. Back up for these times is currently provided by fossil fuel generation. Based on 89 years of hydro inflow records, the NZ Battery Project estimates there can be an energy deficit of between 3 and 5 TWh in the worst dry years. This is about 10% of our current annual energy needs. The name, 'NZ Battery', refers to the way the intended solution may provide stored energy for New Zealand"s electricity system, similar to the way a battery stores energy until it"s needed.

In addition to the Strategic Planning role, Inovo has also provided supportive project control services to MBIE. These services included risk management, and the development of dashboard reporting functions to support the internal and external governance reporting. Dashboard reporting for the project brings together overarching and workstream specific information on schedule, risk, financial forecasting analysis, schedule analysis, summarised decision milestones, and planned value vs actual cost reporting. The dashboard reporting for the NZ Battery Project simplifies and summarises the information required by a dynamic governance group, to make complex project decisions more efficiently.

See the latest updates about product stewardship for large batteries.

Transitioning away from fossil fuels to energy systems which use batteries can"t just be about reducing

emissions during use but must take a holistic approach. This means reducing a battery"s environmental impact from the extraction of the materials which make it up, through to how it"s dealt with at the end of life.

To find the most sustainable solutions we must turn to the waste hierarchy.

Ever heard of a passport for a battery? The European Union this month announced regulations requiring large batteries to have one. And where Europe goes, very often, so does the rest of the world, including Aotearoa New Zealand.

Get updates, news and insights about large batteries charging up our circular economy and the transition to a low carbon future.

A consortium of specialist firms has been awarded a major contract to advance the New Zealand Battery Project"s feasibility investigation into a pumped hydro storage scheme at Lake Onslow, the Minister of Energy and Resources Megan Woods has announced.

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Web: https://www.kary.com.pl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346