

NATIONAL NEW ENERGY DEVELOPMENT CENTRE

Introduction to the establishment of the National New
Energy Development Centre in Taranaki, May 2019

TAPUAE
MAKE WAY
ROA
FOR TARANAKI

TARANAKI
like no other

THE NATIONAL NEW ENERGY DEVELOPMENT CENTRE WILL BE AN INSTITUTION OF NATIONAL IMPORTANCE, PLAYING AN INTEGRAL ROLE IN NEW ZEALAND'S SCIENCE AND INNOVATION SYSTEM BY LIFTING INNOVATION IN NEW ENERGY AND SUPPORTING NEW ZEALAND TO TRANSITION TO A LOW-EMISSIONS ECONOMY.

Ambitious goals have been set for a low-emissions future. Incremental change will not be enough – achieving the nation's goals will depend on significantly increasing the pace of innovation, and leveraging national and international developments in technology.

This is a pivotal time for the Taranaki region and the New Zealand economy.

Taranaki has a natural opportunity to be at the forefront of this transition, driving change through business innovation and industry collaboration. The government is aware of its role in assisting Taranaki with this transition.

The National New Energy Development Centre (NNEDC) is central to achieving our goals.

Based in Taranaki, the Centre will give concrete shape and substance to efforts by Taranaki and New Zealand to seize the opportunities presented by an evolving energy landscape. It is an opportunity for thought leadership and collaboration, and demonstrates a commitment to making a positive difference to the nation's goals and future.

WHY THE NNEDC IS NEEDED, NOW

The NNEDC will be a hub that contributes to achieving national and global emissions targets

- An institution of national significance that is focused on growing new-energy innovation in Taranaki and New Zealand, and for export
- A leader in helping New Zealand develop an overarching new energy strategy, necessary to transition to a low emissions future
- The strategic glue that brings new-energy innovation together across multiple organisations, agencies and locations
- A focal point for government, the research sector and the private sector, drawing in the best ideas and technology from overseas
- A partnership-based, seamless, non-partisan energy team and project hub to provide an engine for growth and catalyst for change through innovation at scale
- A lead voice for science and innovation systems, with a focus on new-energy solutions

- The NNEDC will provide a credible and trusted source of independent, commercially impartial advice and information to government and industry
- A critical connector between the 'big picture' and innovation outcomes

The NNEDC will enable more, faster, lower cost and lower risk new-energy innovation

- Better access to infrastructure to develop and test new energy technologies
- A place to pilot new energy solutions in real world test environments
- Greater access to public and private funding from within New Zealand, and overseas investors

Supporting a just transition for Taranaki and growing a more resilient region and economy

- Helping to strengthen the resilience of the energy industry by diversifying energy activity
- Showcasing Taranaki and New Zealand as a leader in the development of new-energy

WHAT IS THE NNEDC?

The National New Energy Development Centre will be a nationwide hub connecting industry, government, research expertise and leaders.

Major companies and small and medium-sized enterprises from across industry and New Zealand will be able to work together in diverse, seamless teams to solve energy challenges by unlocking innovation at scale.

A hub and spoke model will connect the NNEDC with other regions and institutions across New Zealand and internationally, while also championing new-energy innovation in Taranaki and harnessing the region's capability and expertise to build, test and deploy new energy solutions.

THE NNEDC'S VISION IS:

A globally successful new-energy industry that leads New Zealand into a low-emissions future

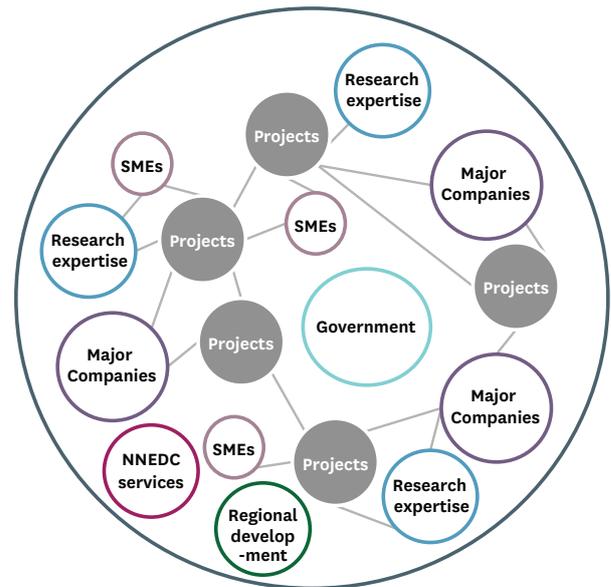
THE NNEDC'S MISSION IS:

An organisation of national significance that fosters a new-energy eco-system to leverage national and global industry knowledge and specialist expertise to reduce the time, cost, and risk associated with developing new-energy technologies

THE NNEDC'S UNIQUE SELLING POINT IS:

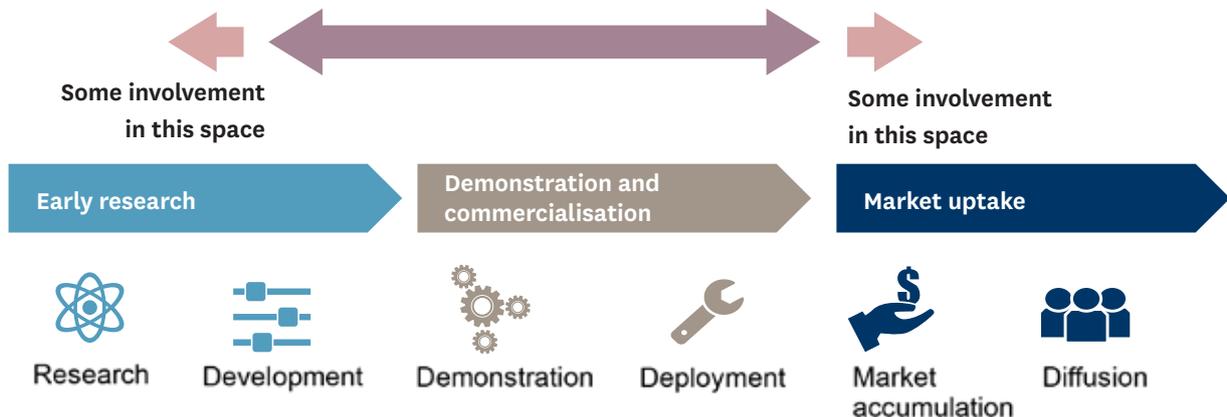
A collaboration and partnership approach that leverages a powerful ecosystem of new-energy leaders, mature companies, research expertise and government to build, test and deploy new-energy solutions.

THE CUSTOMER ECOSYSTEM IN ACTION



The NNEDC will focus on innovation that contributes to efforts in New Zealand and globally to transition to a low-emissions future

MAIN PURPOSE OF THE NNEDC



WHAT WILL THE NNEDC DO?

The NNEDC will answer the call for more new-energy innovation – providing a platform for it to occur at a faster pace and with less cost and risk. At its core, the NNEDC will focus on product development, demonstration and deployment. It will leverage Taranaki’s existing strengths, capabilities and expertise.

KEY FUNCTIONS

The functions of the NNEDC have been shaped through stakeholder discussions and in response to the unique challenges that New Zealand will face on its journey to a low emissions future.

The NNEDC will have 6 main functions.

1. Early research and technology development

- Scanning new-energy research and emerging technologies, and sharing information with stakeholders.
- Identifying new-energy opportunities that will deliver regional, national and global benefits.

2. Connecting and completing the eco-system

- Co-location of industry stakeholders, providing a shared space for working, meeting and holding events.
- Economies of scale and centralised information sharing.
- Acting as a hub to exchange knowledge, expertise and capability with other regions and countries.

3. Pathway to commercialisation

- Easy access to specialist expertise across government, industry and the research sectors.
- Facilitating the development, testing and piloting of energy solutions, and connecting these to the market.
- Ensuring the highest safety standards are applied to development and testing.
- Systematising elements of the commercialisation process, funding and investment streams and project management.

4. Trusted advisor

- Supporting apprenticeships, mentoring programmes, and training organisations to identify the future capability requirements of the industry.
- Independent and impartial advice to government to inform thinking around new-energy strategy and policy.

- Working with regulators and industry to reduce potential barriers to innovation and ensure the application of best practice health and safety.
- Facilitating tailored access to specialist services to support commercialisation and funding and to help projects get investment-ready.

5. Making sure the NNEDC focuses on the right things

- Providing robust governance to achieve the NNEDC’s purpose and report and monitor on the NNEDC’s performance to government and stakeholders.

6. Showcasing the opportunities

- The NNEDC could have a dedicated space for stakeholders – including businesses and new energy projects – to showcase new-energy solutions and demonstrate progress towards a low emissions future.

WHAT THE NNEDC WILL FOCUS ON

The NNEDC will utilise a portfolio approach to optimise where it focuses its efforts. An example of this portfolio approach is shown in figure 1.

Project areas which could reflect areas of specialty for the NNEDC

- Hydrogen
- Carbon (carbon capture, storage and use)
- Marine: tidal; offshore wind; wave
- Electricity: demand response; smart grid; micro-grid
- Solar
- Wind
- Waste to energy
- Geothermal
- Biofuels/Bioenergy

Over time the NNEDC’s focus will change and evolve to investigate emerging new energy opportunities. The NNEDC is also likely to gravitate towards those projects that excels at, building on successful results and forming deep pockets of expertise. Coupled with the inherent uncertainty involved with innovation, this means it is impossible to predict exactly what type of projects the NNEDC would be involved with in the future.

FIGURE 1. PORTFOLIO APPROACH FOR NNEDC PROJECTS

AREAS OF OPPORTUNITY WHERE TARANAKI HAS A NATURAL ALIGNMENT



Importing technologies and using local-level innovation to adapt solutions to a New Zealand context

Many countries are grappling with energy problems that are similar to New Zealand, and are investing significant resources to solve them. While it is likely that these solutions can be applied in New Zealand, it is expected that further innovation will be needed to tailor these solutions to work in New Zealand’s unique regulatory, geographic and economic environments.

Areas of specialisation

One or two areas of specialisation that are typically mission- led that the NNEDC would focus on. Over time, the specialisation would be expected to change.

Emerging areas of speciality

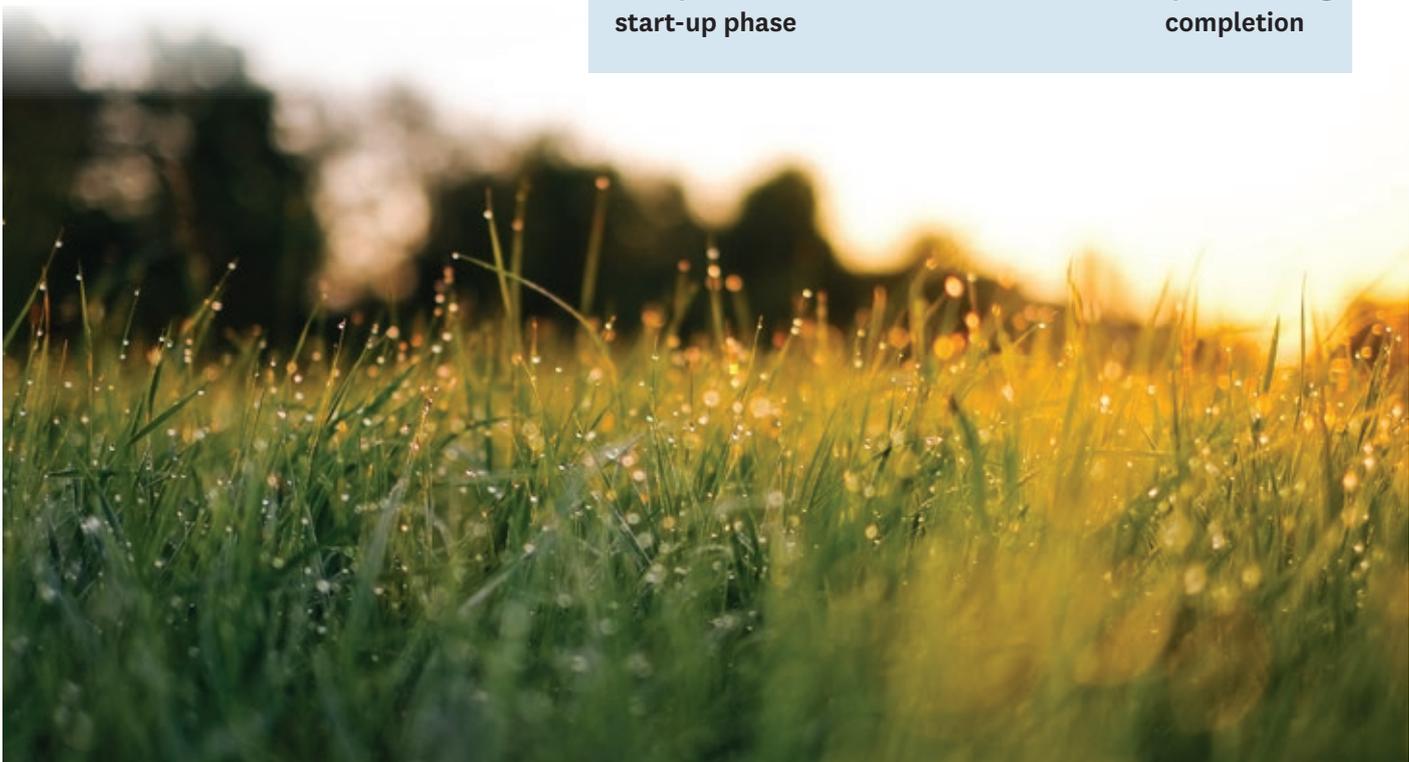
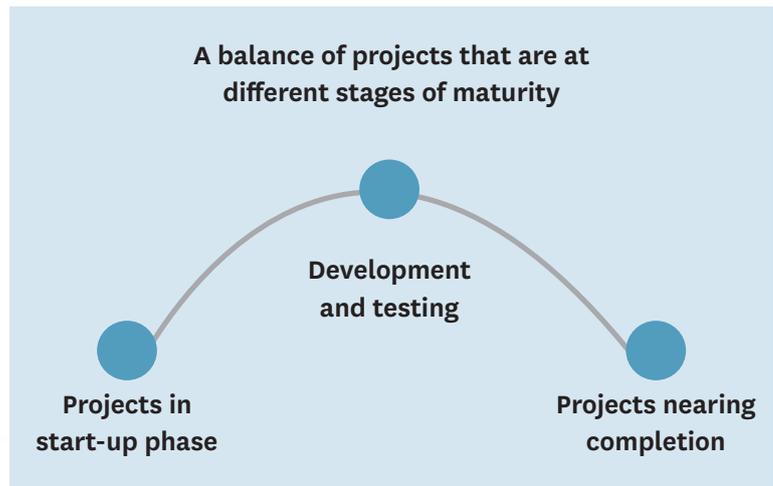
Allows a range of different opportunities to be explored, to help identify what the future energy pathway might look like. This would shape future areas of specialisation for the NNEDC.

Seizing opportunities

Supporting industry- or investigator-led opportunities that present to the NNEDC.

Exporting innovation that helps to achieve global solutions

New-energy innovation may develop solutions that would help to address challenges that other countries are facing, and contribute to reducing global emissions.



WHY TARANAKI



TARANAKI'S STRENGTHS WILL DRIVE NEW-ENERGY INNOVATION

- International connections and networks
- Liquid fuels and industrial chemicals expertise
- Human capital
- Best practice health and safety
- High quality energy infrastructure including the centre of the country's gas infrastructure and good connections to the national electricity grid
- A natural home to innovation that connects the two forms of energy – electrons and molecules
- Established energy businesses and supply chain
- Natural resources to support new energy innovation



The NNEDC will be an organisation of national significance. It will leverage the region's digital and transport links to build strong partnerships with New Zealand and global expertise, support new-energy innovation in regions outside of Taranaki, and be a hub for new-energy innovation across the country.



LEADING TARANAKI'S TRANSITION TO A NEW ENERGY FUTURE

The NNEDC will play a lead role in supporting Taranaki's businesses and communities to transition to a low-emissions economy, position the region at the forefront of the energy transition and be an international success story.



NATIONAL NEW ENERGY DEVELOPMENT CENTRE ESTABLISHMENT NEXT STEPS

The NNEDC will be established using a project-based approach, with the establishment project owners being the Venture Taranaki Board of Trustees. Venture Taranaki will provide public accountability for the project and the governance expertise, in partnership with MBIE, needed to successfully establish the NNEDC.

The board will be accountable for establishing the NNEDC successfully, and will:

- approve the establishment plan to operationalise the NNEDC
- approve key establishment decisions until the chairperson of the NNEDC governance board is appointed
- facilitate the appointment of the chairperson to the NNEDC's governance board.

Venture Taranaki will be the contracting party for any funding agreements to establish the NNEDC and with employees and suppliers that the project needs to engage.

A dedicated programme manager will be appointed to carry out the bulk of the work to establish the NNEDC, supported by a small establishment team.

The establishment project would conclude once the NNEDC is operational.

THE FIGURE BELOW SUMMARISES THE PLANNED STEPS TO ESTABLISH THE NNEDC:



Taranaki's regional development agency Venture Taranaki will be the lead agency for the establishment phase.